

THIS COMPANY HAS A WRITTEN
HAZARD COMMUNICATION PROGRAM
IN COMPLIANCE WITH THE
GLOBAL HARMONIZATION SYSTEM

THE FOLLOWING ITEMS ARE AVAILABLE UPON REQUEST:

- COPY OF THE COMPANY WRITTEN HAZARD COMMUNICATION
- COPY OF THE OSHA HAZARD COMMUNICATION STANDARD
- COPY OF THE COMPANY'S LIST OF HAZARDOUS CHEMICALS FOR YOUR WORKPLACE
- COPIES OF OTHER SDS SHEETS FOR ANY CHEMICALS TO WHICH YOU ARE EXPOSED

TO OBTAIN ANY OR ALL OF THIS INFORMATION

CONTACT YOUR SUPERVISOR

OR COMPANY SAFETY DIRECTOR



3150 BUCKINGHAM ROAD
ENDWELL, NEW YORK 13760
607-754-6464 ~ FAX 607-754-5777

10 KIDS LANE
CASTLETON, NEW YORK 12033
518-766-9360 ~ FAX 518-766-9365

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HAZARD COMMUNICATION POLICY

POLICY STATEMENT

Southern Tier Insulations provides information to employees about hazardous chemicals by means of a hazard communication program, labels, and other forms of warning, safety data sheets, information and training.

REASON FOR POLICY/PURPOSE

The purpose of this policy is to comply with OSHA Hazard Communication Standard found in 29 CFR 1910.1200.

WHO NEEDS TO KNOW THIS POLICY

All field employees.

POLICY/PROCEDURES

SCOPE:

This policy provides for the communication of potential hazards to full-time employees who work in the field and may be exposed to hazardous chemicals.

RESPONSIBILITIES

- The responsibility is by the safety officer, supervisors and field employees to ensure that the program is adequate and followed by all. All chemicals coming from the STI shop will provide:
 - Labeled containers
 - SDS Sheets
 - Training
- Safety Data Sheets (SDS's, formerly Material Safety Data Sheets or MSDSs) for each chemical used in the workplace are maintained and accessible to all employees.
- Training is required for all employees prior to any job assignment involving potential exposure to hazardous substances. Training topics include:
 - OSHA 10
 - Hazard Communication Program
 - Site Specific training per job site

DEFINITIONS

Safety Data Sheets (SDS)

- Documents which provide detailed information about chemical's hazards and how to work with each chemical safely. Each chemical manufacturer or importer is required to provide a SDS for each of their chemicals.

Hazardous Chemical

- Any chemical substance or product which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

Hazard Communication Standard Pictogram

As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification.

HCS Pictograms and Hazards

Health Hazard



- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

Flame



- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides

Exclamation Mark



- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity
- Narcotic Effects
- Respiratory Tract Irritant
- Hazardous to Ozone Layer (Non-Mandatory)

Gas Cylinder



- Gases Under Pressure

Corrosion



- Skin Corrosion/Burns
- Eye Damage
- Corrosive to Metals

Exploding Bomb



- Explosives
- Self-Reactives
- Organic Peroxides

Flame Over Circle



- Oxidizers

Environment



(Non-Mandatory)

- Aquatic Toxicity

Skull and Crossbones



- Acute Toxicity (fatal or toxic)

How to Read A Safety Data Sheet (SDS)

Safety Data Sheets (SDS) are an important requirement of the OSHA Hazard Communication Standard. SDS are essential documents that are used to inform employees, students, and the general public about how materials can be safely handled, used, and stored. Since Flinn provides chemicals only to schools, we have written Flinn SDS specifically for teachers and their students. Using clear and straightforward language, each Flinn SDS provides all the relevant safety and hazard information in a consistent, useful, and easy-to-read two-page format. Flinn SDS follow the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The 16 sections are divided into four major areas, each designed to answer a specific question.

What is the material and what do I need to know immediately in an emergency?

Sections 1–3.

A It is important that the chemical name on the label match the name on the SDS. Many chemicals have similar names, but very different properties.

B The most important section! Provides an overview of the physical and health hazard risks associated with using the material.

C Signal words, either Danger or Warning, heighten the awareness of the relative risk when using certain chemicals. Danger is the more severe warning!

D Eight pictograms exist in the GHS classification scheme to call attention to physical and health hazards. See page 1158 for more information about GHS pictograms.

E This section includes the formula, formula weight, concentration, and CAS#. The CAS# is the single identifying number for each specific substance. CAS# should match the CAS# on the bottle label.

What should I do if a hazardous situation occurs?

Sections 4–6.

F Seek medical attention. These first-aid measures are only meant for immediate first aid and should always be followed up with professional medical care. The CAS# is the single identifying number for each specific substance. CAS# should match the CAS# on the bottle label.

G This section is written for the firefighter. Flash point (the lowest temperature at which enough vapor is present to form an ignitable mixture with air); upper and lower flammable limits; and the auto ignition temperature (AIT) are common properties included in this section.

FLINN SCIENTIFIC, INC. Safety Data Sheet (SDS)

SDS #: 181.00

Revision Date: September 25, 2013

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

n-Butyl Alcohol

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word DANGER

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Flammable liquids (Category 3). Flammable liquid and vapor (H226). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Acute toxicity, oral (Category 4). Harmful if swallowed (H302). Do not eat, drink or smoke when using this product (P270).

Hazard class: Skin corrosion or irritation (Category 2). Causes skin irritation (H315).

Hazard class: Serious eye damage/eye irritation (Category 1). Causes serious eye damage (H318).

Hazard class: Specific target organ toxicity, single exposure; respiratory tract irritation (Category 3). May cause respiratory irritation (H335).

Hazard class: Specific target organ toxicity, single exposure; Narcotic effects (Category 3). May cause drowsiness or dizziness (H336). Avoid breathing mist, vapors or spray (P261).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
n-Butyl alcohol	71-36-3	CH ₃ (CH ₂) ₃ OH	74.12	

Synonym: 1-Butanol; n-Butanol

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell (P312).

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340).

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing (P305+P351+P338).

If on skin (or hair): Immediately remove all contaminated clothing. Rinse skin with water (P303+P361+P353).

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell (P302+P301+P312).

SECTION 5 — FIRE FIGHTING MEASURES

Class 1C flammable liquid.

Flash point: 37 °C Flammable limits: Lower: 1.4% Upper: 11.2% Autoignition Temperature: 343 °C

When heated to decomposition, may emit CO and CO₂.

In case of fire: Use triclass dry chemical fire extinguisher (P370+P378).

NFPA Code

H-2

F-3

R-0

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Remove all ignition sources and ventilate area. Contain the spill with sand or other inert absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

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H The NFPA code is a numerical code established by the National Fire Protection Association. It rates the substance *under fire conditions* in four categories: Health, Flammability, Reactivity, and unusual reactivity: 4 is a severe hazard, 0 is no hazard.

I How to clean up a spill. Always remove unprotected personnel from area and make sure all students are safe. Contain the spill with sand or absorbent materials.

How to Read A Safety Data Sheet (SDS), continued

Each Flinn SDS follows the same format and the information is always found in the same location, making it a valuable resource in the event of an emergency. With your first chemical order of the year, every teacher will receive a CD from Flinn Scientific containing all of our SDS. You may also request another CD at any time. Flinn SDS are updated on a regular basis, guaranteeing the most up-to-date safety information possible. Flinn sells a complete SDS Library in two versions, a hard copy version in two binders (Catalog No. AP7703) or as part of the Flinn Online Chemventory program. For a more detailed description of the Flinn Online Chemventory program (Catalog No. SE3000), please refer to the *Flinn Scientific Catalog/Reference Manual*. For our customers' convenience, Flinn has also placed a free complete set of SDS on our website. Simply go to www.flinnsci.com and click on the *Free SDS* button—individual SDS are easy to find and copies may be printed from your computer.

FLINN SCIENTIFIC, INC.		
Safety Data Sheet	n-Butyl Alcohol	SDS #: 181.00
		Revision Date: September 25, 2013
SECTION 7 — HANDLING AND STORAGE		
Flinn Suggested Chemical Storage Pattern: Organic #2. Store with alcohols, glycols, amines, and amides. Store in a dedicated flammables cabinet. If a flammables cabinet is not available, store in Flinn Saf-Stor™ can. Keep container tightly closed (P233). Keep cool (P235). Use only in a well-ventilated area or in a hood (P271).		
SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION		
Wear protective gloves, protective clothing and eye protection (P280). Wash thoroughly after handling (P264). Use ventilation to keep airborne concentrations below exposure limits. Exposure guidelines: PEL 100 ppm (OSHA) TLV 20 ppm (ACGIH).		
SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES		
Clear colorless liquid. Wine-like odor.	Boiling point: 117.7 °C	
Soluble: Water (20%). Miscible with alcohol and ether.	Melting point: -89 °C	
	Refractive index: 1.3988	
	Specific gravity: 0.81	
SECTION 10 — STABILITY AND REACTIVITY		
Avoid contact with aluminum, chromium trioxide, and oxidizing materials. Substance may develop explosive hydroperoxides. Shelf life: Fair, substance may oxidize. See Section 7 for further information.		
SECTION 11 — TOXICOLOGICAL INFORMATION		
Acute effects: Absorbed through skin. Eye, skin, respiratory tract irritation. Dizziness. CNS depression.	ORL-RAT LD ₅₀ : 790 mg/kg	
Chronic effects: N.A.	IHL-RAT LC ₅₀ : 8000 ppm/4H	
Target organs: Eyes, skin, respiratory system, central nervous system.	SKN-RBT LD ₅₀ : 3400 mg/kg	
N.A. = Not available, not all health aspects of this substance have been fully investigated.		
SECTION 12 — ECOLOGICAL INFORMATION		
Data not yet available.		
SECTION 13 — DISPOSAL CONSIDERATIONS		
Please review all federal, state and local regulations that may apply before proceeding. Flinn Suggested Disposal Method #18b is one option.		
SECTION 14 — TRANSPORT INFORMATION		
Shipping name: Butanols. Hazard class: 3, Flammable Liquid. UN number: UN1120.		
N/A = Not applicable		
SECTION 15 — REGULATORY INFORMATION		
TSCA-listed, EINECS-listed (200-751-6), RCRA code U031.		
SECTION 16 — OTHER INFORMATION		
This Safety Data Sheet (SDS) is for guidance and is based upon information and tests believed to be reliable. Flinn Scientific, Inc. makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages relating thereto. The data is offered solely for your consideration, investigation, and verification. The data should not be confused with local, state, federal or insurance mandates, regulations, or requirements and CONSTITUTE NO WARRANTY. Any use of this data and information must be determined by the science instructor to be in accordance with applicable local, state or federal laws and regulations. The conditions or methods of handling, storage, use and disposal of the product(s) described are beyond the control of Flinn Scientific, Inc. and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT(S).		
Consult your copy of the <i>Flinn Science Catalog/Reference Manual</i> for additional information about laboratory chemicals.		
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How can I prevent hazardous situations from occurring?

Sections 7–11.

J Use the Flinn Suggested Chemical Storage Pattern to prevent accidents and improve safety. Special storage and usage tips are also included.

K Wear personal protective equipment such as goggles, gloves, and an apron. See page 1146–1147 for an explanation of exposure guidelines.

L Clear, concise, and useful physical and chemical properties help you learn more about the chemicals you use. The first part describes the material's appearance. If it doesn't look like this, STOP. Do not use it. It may be more or less hazardous.

M Describes the conditions or reactions to be avoided. Also provides some indication about anticipated shelf life.

N More detail on how the material may injure you. Acute (short exposure) and chronic (long-term) effects are listed along with their target organs.

O Oral (ORL), inhalation (IHL), and skin absorption (SKN) toxicity data on test animals is included. For more information on LD₅₀, see pages 1148–1149.

Other useful information.

Sections 12–16.

P Ecological impact if large amounts (e.g., tank car) of the chemical spill near a river or lake.

Q Suggested disposal methods for laboratory quantities of chemicals. See pages 1188–1216 for Flinn Suggested Disposal Methods.

R Department of Transportation shipping information is included for your school district, emergency responders, and transport/shipping departments.

S Regulatory information used by regulatory compliance personnel.

T Flinn Scientific has an ongoing program to update its SDS. As professional chemists, we try our best to provide science teachers with the most accurate and useful safety information. Call Flinn if you have any questions. We can help!



THE MAKERS OF
Armaflex®



PRODUCT NAME ARMAFLEX 520 LOW VOC ADHESIVE

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name **ARMACELL AUSTRALIA PTY LTD**
 Address **13 - 17 Nathan Road, Dandenong, Victoria, AUSTRALIA, 3175**
 Telephone **(03) 8710 5999**
 Fax **(03) 8710 5900**
 Emergency **(03) 8710 5999**
 Email
 Web Site **http://www.armacell.com.au**

Synonym(s) **ARMACELL ARAMFLEX 520 LOW VOC ADHESIVE**
 Use(s) **ADHESIVE**

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA

RISK PHRASES

R11 Highly flammable.

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No.	1133	Hazchem Code	3[Y]E	Pkg Group	II
DG Class	3	Subsidiary Risk(s)	None Allocated	EPG	3A1

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Formula	Conc.	CAS No.
ACETONE	C3-H6-O	>60%	67-64-1
ADDITIVES	Not Available	Not Available	Not Available

4. FIRST AID MEASURES

Eye	Hold eyelids apart and flush continuously with water. Continue until advised to stop by the Poisons Information Centre, a doctor, or for at least 15 minutes. Keep patient calm.
Inhalation	Leave area of exposure. If symptoms develop, seek urgent medical attention. If assisting a person exposed, wear a Type A (Organic vapour) respirator (or Air-line respirator in poorly ventilated areas). If person is not breathing, apply artificial respiration and seek urgent medical attention.
Skin	Remove contaminated clothing and gently flush affected areas with water. Seek medical attention if irritation develops. Launder clothing before reuse.
Ingestion	DO NOT induce vomiting. Immediately wash out mouth with water, and then give water to drink. Seek medical attention.
Advice to Doctor	Treat symptomatically

5. FIRE FIGHTING MEASURES

Flammability	Highly flammable. Vapours may form explosive mixtures with air. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling. Earth containers when dispensing fluids.
Fire and Explosion	Highly flammable - explosive vapour. Evacuate area and contact emergency services. Toxic gases may be evolved when heated. Remain upwind and notify those downwind of hazard. Wear full protective equipment (see spill above) including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.
Extinguishing	Small fires: fog or fine water spray, carbon dioxide or dry chemical. Large fires: fog or fine water spray. Prevent contamination of drains or waterways.
Hazchem Code	3[Y]E

6. ACCIDENTAL RELEASE MEASURES

Spillage	If spilt (bulk), contact emergency services if appropriate. Wear splash-proof goggles, butyl or neoprene gloves, a Type A (Organic vapour) respirator (where an inhalation risk exists), coveralls and boots. Eliminate all ignition sources. Ventilate and clear area of all unprotected personnel. Absorb spill with sand or similar, collect and place in sealable containers for disposal. Prevent spill entering drains or waterways.

7. STORAGE AND HANDLING

Storage	Store in cool, dry, well ventilated area, preferably flammables store, removed from direct sunlight, heat and ignition sources, oxidising agents, acids, chloroform and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate fire protection and ventilation systems.
Handling	Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas (eg. if container is damaged).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation	Do not inhale vapours. Use in well ventilated areas. In poorly ventilated areas, mechanical explosion proof extraction ventilation is recommended. Flammable/explosive vapours may accumulate in poorly ventilated areas. Vapours are heavier than air and may travel some distance to an ignition source and flash back. Maintain vapour levels below the recommended exposure standard.
Exposure Standards	ACETONE (67-64-1) ES-STEL : 1000 ppm (2375 mg/m ³) ES-TWA: 500 ppm (1185 mg/m ³) WES-TWA: 500 ppm (1185 mg/m ³)
PPE	Wear splash-proof goggles and neoprene or butyl gloves. If spraying, wear a Type A-Class P1 (Organic vapour and Particulate) Respirator. Where an inhalation risk exists, wear a Type A (Organic vapour) Respirator. When using large quantities or where heavy contamination is likely, wear coveralls.



PRODUCT NAME **ARMAFLEX 520 LOW VOC ADHESIVE**

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	BLACK LIQUID	Solubility (water):	INSOLUBLE
Odour:	SOLVENT ODOUR	Specific Gravity:	0.87
pH:	NOT AVAILABLE	% Volatiles:	> 60 %
Vapour Pressure:	NOT AVAILABLE	Flammability:	HIGHLY FLAMMABLE
Vapour Density:	> 1 (Air = 1)	Flash Point:	-20 C
Boiling Point:	> 56 C	Upper Explosion Limit:	NOT AVAILABLE
Melting Point:	NOT AVAILABLE	Lower Explosion Limit:	NOT AVAILABLE
Evaporation Rate:	NOT AVAILABLE	Autoignition Temperature:	NOT AVAILABLE
Exposure Standard:	500 ppm Acetone		

10. STABILITY AND REACTIVITY

Reactivity	Incompatible with oxidising agents (eg. hypochlorites, peroxides), acids (eg. sulphuric acid), chloroform, heat and ignition sources.
Decomposition Products	May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Low to moderate toxicity - narcotic at high concentrations. This product has the potential to cause adverse health effects with over exposure. Use safe work practices to avoid eye or skin contact and vapour inhalation. Over exposure may cause central nervous system (CNS) depression, with headache, dizziness and unconsciousness at high levels.
Eye	Irritant. Contact may result in lacrimation, irritation, pain, redness and conjunctivitis. Prolonged contact - corneal burns and possible permanent damage.
Inhalation	Irritant - narcotic at high levels. Over exposure may result in mucous membrane irritation of the nose and throat, nausea, vomiting, weakness and headache. At high levels; dizziness, drowsiness, incoordination, bronchial irritation and unconsciousness.
Skin	Irritant. Prolonged contact may result in drying and defatting of the skin, rash and dermatitis. Toxic effects may result from skin absorption.
Ingestion	Low to moderate toxicity. Ingestion may result in gastrointestinal irritation, nausea, vomiting, headache and weakness. Large doses may result in dizziness, drowsiness, kidney damage, unconsciousness and coma.
Toxicity Data	ACETONE (67-64-1) LC50 (Inhalation): 44000 mg/m ³ /4 hours (mouse) LD50 (Ingestion): 3000 mg/kg (mouse) LD50 (Skin): > 9400 uL/kg (guinea pig)

12. ECOLOGICAL INFORMATION

Environment	SOIL: If released on soil, acetone will both volatilise and leach into the ground and probably biodegrade. WATER: If released into water, acetone will probably biodegrade. It will also be lost due to volatilisation (half-life ~20 hr using a model river). Bioconcentration in aquatic organisms and adsorption to sediment should not be significant. ATMOSPHERE: Acetone will be lost by photolysis and reaction with hydroxyl radicals. Half-life estimated from these combined sources is 22 days (faster in warmer weather).

13. DISPOSAL CONSIDERATIONS

Waste Disposal	Wearing the protective equipment outlined, ensure all ignition sources are extinguished. For small quantities, absorb on paper, sand or similar and evaporate under a fume cupboard or open area. For large volumes, atomise into incinerator (mixing with more flammable solvent if required) or recycle by gravimetric separation, distilling & reusing. Contact the manufacturer for additional information if required.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

Shipping Name	ADHESIVES containing flammable liquid				
UN No.	1133	Hazchem Code	3[Y]E	Pkg Group	II
DG Class	3	Subsidiary Risk(s)	None Allocated	EPG	3A1

PRODUCT NAME ARMAFLEX 520 LOW VOC ADHESIVE

15. REGULATORY INFORMATION

Poison Schedule	Classified as a Schedule 5 (S5) Poison using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).
AICS	All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information WORK PRACTICES - SOLVENTS: Organic solvents may present both a health and flammability hazard. It is recommended that engineering controls should be adopted to reduce exposure where practicable (for example, if using indoors, ensure explosion proof extraction ventilation is available). Flammable or combustible liquids with explosive limits have the potential for ignition from static discharge. Refer to AS 1020 (The control of undesirable static electricity) and AS 1940 (The storage and handling of flammable and combustible liquids) for control procedures.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

ABBREVIATIONS:

mg/m³ - Milligrams per cubic metre

ppm - Parts Per Million

TWAVES - Time Weighted Average or Exposure Standard.

CNS - Central Nervous System

NOS - Not Otherwise Specified

pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline.

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

M - moles per litre, a unit of concentration.

IARC - International Agency for Research on Cancer.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

COLOUR RATING SYSTEM: RMT has assigned all Chem Alert reports a colour rating of Green, Amber or Red for the sole purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline, a Green colour rating indicates a low hazard, an Amber colour rating indicates a moderate hazard and a Red colour rating indicates a high hazard.

While all due care has been taken by RMT in the preparation of the Colour Rating System, it is intended as a guide only and RMT does not provide any warranty in relation to the accuracy of the Colour Rating System. As far as is lawfully possible, RMT accepts no liability or responsibility whatsoever for the actions or omissions of any person in reliance on the Colour Rating System.

Report Status

This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Material Safety Data Sheet ('MSDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this MSDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any

AMBER

PRODUCT NAME ARMAFLEX 520 LOW VOC ADHESIVE

loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this MSDS.

Prepared By

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MSDS Date: 05 Sep 2006

End of Report

Safety Data Sheet
 according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
 OSHA GHS

Printing date 20.03.2015

Revision: 19.03.2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** Armaflex WB Finish
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
 No further relevant information available.
- **Application of the substance / the mixture** Coating compound/ Surface coating/ paint
- **1.3 Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
 Armacell, LLC
 7600 Oakwood St. Ext.
 Mebane, NC 27302
 Phone: 919-304-3846
- **1.4 Emergency telephone number:**
 ChemTel Inc.
 (800)255-3924, +1 (813)248-0585



SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
 The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H317, H360Df, H411.
 Classifications listed also are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).
 The following classifications are applicable only to OSHA (USA) regulations and not the specific CLP regulation: H360.
 Repr. 1 H360: May damage fertility or the unborn child



health hazard

Carc. 1B H350 May cause cancer.

Repr. 1B H360Df May damage the unborn child. Suspected of damaging fertility.



environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



T; Toxic

R45-60-61: May cause cancer. May impair fertility. May cause harm to the unborn child.

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Xn; Harmful

R62: Possible risk of impaired fertility.



Xi; Sensitising

R43: May cause sensitisation by skin contact.



N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

Additional information:

There are no other hazards not otherwise classified that have been identified.

0 percent of the mixture consists of component(s) of unknown toxicity

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008**

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H317, H360Df, H411.

The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H360.

The product is additionally classified and labelled according to the Globally Harmonized System within the United States (GHS).

The product is classified and labelled according to the CLP regulation.

Hazard pictograms

This pictogram only applicable for EU regulations. Not for use in the United States (OSHA GHS).



GHS07 GHS08 GHS09

Signal word Danger**Hazard-determining components of labelling:**

benzyl butyl phthalate

Attapulgate (Palygorskite)

Quartz (SiO₂)

Petroleum Distillates

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Hazard statements

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H317, H360Df, H411.

The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H360.

H360: May damage fertility or the unborn child.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

H360Df May damage the unborn child. Suspected of damaging fertility.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

The following Precautionary Statements are applicable only to the EU CLP regulations and not the OSHA GHS regulations: P302+P352, P333+P313.

P280 Wear protective gloves.

P273 Avoid release to the environment.

P202 Do not handle until all safety precautions have been read and understood.

P363 Wash contaminated clothing before reuse.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of water.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

Restricted to professional users.

Hazard description:**WHMIS-symbols:**

D2A - Very toxic material causing other toxic effects

**NFPA ratings (scale 0 - 4)**

Health = 1

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = *1

Fire = 0

Reactivity = 0

* - Indicates a long term health hazard from repeated or prolonged exposures.

HMIS Long Term Health Hazard Substances

13463-67-7	titanium dioxide
85-68-7	benzyl butyl phthalate
14808-60-7	Quartz (SiO ₂)

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- 2.3 Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3: Composition/Information on Ingredients

· 3.2 Mixtures

· **Description:** Mixture of substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 85-68-7 EINECS: 201-622-7 Index number: 607-430-00-3	benzyl butyl phthalate ☒ T Repr. Cat. 2, 3 R61; ☒ Xn R62; ☒ N R50/53 ⚠ Repr. 1B, H360Df ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	2,5-10%
CAS: 12174-11-7 EC number: 601-805-5	Attapulgite (Palygorskite) ☒ Xn R40 ⚠ Carc. 2, H351	≤ 2,5%
CAS: 9016-45-9 NLP: 500-024-6	4-nonylphenyl-polyethylene glycol ☒ Xi R36/38; ☒ N R51/53 ⚠ Aquatic Chronic 2, H411 ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319	< 1%
CAS: 14808-60-7 EINECS: 238-878-4	Quartz (SiO ₂) ☒ T R49; ☒ Xn R48 ⚠ Carc. 1A, H350	< 1%
	Petroleum Distillates ⚠ Carc. 1B, H350	< 1%

· SVHC

85-68-7	benzyl butyl phthalate
9016-45-9	4-nonylphenyl-polyethylene glycol

· Dangerous Components (Alternative Classifications):

CAS: 13463-67-7 EINECS: 236-675-5	titanium dioxide	⚠ Carc. 2, H351	10-25%

· Additional information:

For the listed ingredients, the identity and exact percentages are being withheld as a trade secret.
For the wording of the listed risk phrases refer to section 16.

· Notable Trace Components (≤ 0,1% w/w)

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CAS: 55965-84-9
Index number: 613-167-00-5

reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)

■ T R23/24/25; ■ C R34; ■ Xi R43; ■ N R50/53

⚠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331

⚠ Skin Corr. 1B, H314

⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410

⚠ Skin Sens. 1, H317

CAS: 1897-45-6
EINECS: 217-588-1
Index number: 608-014-00-4

chlorothalonil (ISO)

■ T+ R26; ■ Xn R40; ■ Xi R37-41; ■ Xi R43; ■ N R50/53

Carc. Cat. 3

⚠ Acute Tox. 2, H330

⚠ Carc. 2, H351

⚠ Eye Dam. 1, H318

⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410

⚠ Skin Sens. 1, H317; STOT SE 3, H335

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

Immediately remove any clothing soiled by the product.

Take affected persons out into the fresh air.

After inhalation:

Supply fresh air; consult doctor in case of complaints.

Provide oxygen treatment if affected person has difficulty breathing.

After skin contact:

Immediately remove any clothing soiled by the product.

Immediately wash with water and soap and rinse thoroughly.

Laundry contaminated clothing before re-use.

If skin irritation continues, consult a doctor.

After eye contact:

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed

Headache

Dizziness

Nausea in case of ingestion.

Gastric or intestinal disorders when ingested.

Allergic reactions

Hazards

May cause cancer.

Suspected of damaging fertility or the unborn child.

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4.3 Indication of any immediate medical attention and special treatment needed

Medical supervision for at least 48 hours.

If necessary oxygen respiration treatment.

Treat skin and mucous membrane with antihistamine and corticoid preparations.

Contains reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1). May produce an allergic reaction.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:**

Foam

Water haze or fog

Fire-extinguishing powder

Carbon dioxide

For safety reasons unsuitable extinguishing agents: None.**5.2 Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters**Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional information Cool endangered receptacles with water spray.**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Particular danger of slipping on leaked/spilled product.

For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.

6.2 Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Send for recovery or disposal in suitable receptacles.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 - Prevent formation of aerosols.
 - Use only in well ventilated areas.
 - Avoid splashes or spray in enclosed areas.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage:**
 - **Requirements to be met by storerooms and receptacles:**
 - Avoid storage near extreme heat, ignition sources or open flame.
 - **Information about storage in one common storage facility:**
 - Store away from foodstuffs.
 - Do not store together with oxidising and acidic materials.
 - **Further information about storage conditions:**
 - Store in cool, dry conditions in well sealed receptacles.
 - Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

Ingredients with limit values that require monitoring at the workplace:

13463-67-7 titanium dioxide

- PEL (USA) Long-term value: 15* mg/m³
*total dust
- REL (USA) See Pocket Guide App. A
- TLV (USA) Long-term value: 10 mg/m³
withdrawn from NIC
- EL (Canada) Long-term value: 10* 3** mg/m³
*total dust; **respirable fraction; IARC 2B
- EV (Canada) Long-term value: 10 mg/m³
total dust

14808-60-7 Quartz (SiO₂)

- PEL (USA) see Quartz listing
- REL (USA) Long-term value: 0,05* mg/m³
*respirable dust; See Pocket Guide App. A
- TLV (USA) Long-term value: 0,025* mg/m³
*as respirable fraction

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EL (Canada)	Long-term value: 0,025 mg/m ³ ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0,10* mg/m ³ *respirable fraction

- **DNELs** No further relevant information available.
- **PNECs** No further relevant information available.
- **Additional information:** The lists valid during the making were used as basis.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Pregnant women should strictly avoid inhalation or skin contact.

Respiratory protection:

Use suitable respiratory protective device when high concentrations are present.

Use respiratory protection when grinding or cutting material.

For spills, respiratory protection may be advisable.

NIOSH or EN approved organic vapor respirator equipped with a dust/mist prefilter should be used.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Safety glasses

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment**
No further relevant information available.

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- Risk management measures
- See Section 7 for additional information.
- No further relevant information available.

SECTION 9: Physical and chemical properties

• 9.1 Information on basic physical and chemical properties

• General Information

• Appearance:

Form:	Liquid
Colour:	White
Odour:	Mild
Odour threshold:	Not determined.

• pH-value: Not determined.

• Change in condition

Melting point/Melting range:	Not Determined.
Boiling point/Boiling range:	>100 °C (>212 °F)

• Flash point: Not applicable.

• Flammability (solid, gaseous): Not applicable.

• Auto/Self-ignition temperature: Not determined.

• Decomposition temperature: Not determined.

• Self-igniting: Product is not self-igniting.

• Danger of explosion: Product does not present an explosion hazard.

• Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

• Vapour pressure at 20 °C (68 °F): 23 hPa (17 mm Hg)

• Density at 20 °C (68 °F): 1,4 g/cm³ (11,683 lbs/gal)

• Relative density: Not determined.

• Vapour density at 20 °C (68 °F): > 1 g/cm³ (> 8,345 lbs/gal) (Air= 1)

• Evaporation rate: Not determined.

• Solubility in / Miscibility with water:

Dispersible.

• Partition coefficient (n-octanol/water): Not determined.

• Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

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9.2 Other information

No further relevant information available.

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SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions**
Toxic fumes may be released if heated above the decomposition point.
Reacts with strong acids and oxidising agents.
- **10.4 Conditions to avoid**
Keep away from heat and direct sunlight.
Store away from oxidising agents.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
Hydrogen chloride (HCl)

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values relevant for classification:** None.
- **Primary irritant effect:**
- **on the skin:** Slight irritant effect on skin and mucous membranes.
- **on the eye:** Slight irritant effect on eyes.
- **Sensitisation:** Sensitisation possible through skin contact.
- **Subacute to chronic toxicity:** No further relevant information available.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant
Danger through skin adsorption.
May cause cancer.
May damage fertility or the unborn child.
- **Sensitisation:** May cause an allergic skin reaction.
- **Repeated dose toxicity:**
May cause damage to organs through prolonged or repeated exposure.
Repeated exposures may result in skin and/or respiratory sensitivity.
May cause cancer.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**
Carc. 1B, Repr. 1B

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SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** Toxic for aquatic organisms
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**
 Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 Danger to drinking water if even extremely small quantities leak into the ground.
 Also poisonous for fish and plankton in water bodies.
 Toxic for aquatic organisms
 Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
 Must not be disposed together with household garbage. Do not allow product to reach sewage system.
 Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.
 The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**
 - **DOT**
 - **ADR, IMDG, IATA**
- Not Regulated
UN3082

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14.2 UN proper shipping name



Limited Quantity for packages less than 30 kg (66 lb) and inner packagings less than 5 L (1.3 gal).

· DOT
· ADR

Not Regulated

· IMDG

3082 ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S. (benzyl butyl phthalate)
ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (benzyl butyl phthalate, chlorothalonil
(ISO)), MARINE POLLUTANT

· IATA

ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (benzyl butyl phthalate)

14.3 Transport hazard class(es)

· DOT
· Class

Not Regulated

· ADR



· Class

9 (M6) Miscellaneous dangerous substances and
articles.

· Label

9

· IMDG, IATA



· Class

9 Miscellaneous dangerous substances and articles.

· Label

9

14.4 Packing group

· DOT

Not Regulated

· ADR, IMDG, IATA

III

14.5 Environmental hazards:

Product contains environmentally hazardous
substances: benzyl butyl phthalate

· Marine pollutant:

Yes

· Special marking (ADR):

Symbol (fish and tree)

· Special marking (IATA):

Symbol (fish and tree)

· 14.6 Special precautions for user

Symbol (fish and tree)

Warning: Miscellaneous dangerous substances and
articles.

· Danger code (Kemler):

90

· EMS Number:

F-A,S-F

· 14.7 Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code

Not applicable.

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· **Transport/Additional information:**

· **ADR**

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **Transport category**

3

· **Tunnel restriction code**

E

· **IMDG**

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

UN3082, ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S. (benzyl butyl phthalate),
9, III

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **United States (USA)**

· **SARA**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65 (California):**

· **Chemicals known to cause cancer:**

Reference to Attapulgite is based on unbound respirable particles and is not generally applicable to product as supplied.

Reference to Titanium Dioxide is based on unbound respirable particles and is not generally applicable to product as supplied.

Reference to Crystalline Silica and/or Quartz is based on unbound respirable particles and is not generally applicable to product as supplied.

13463-67-7	titanium dioxide
12174-11-7	Attapulgite (Palygorskite)
14808-60-7	Quartz (SiO ₂)
1897-45-6	chlorothalonil (ISO)

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

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• **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

• **Chemicals known to cause developmental toxicity:**

85-68-7 benzyl butyl phthalate

• **Carcinogenic Categories**

• **EPA (Environmental Protection Agency)**

85-68-7 benzyl butyl phthalate

C

• **IARC (International Agency for Research on Cancer)**

13463-67-7 titanium dioxide

2B

85-68-7 benzyl butyl phthalate

3

12174-11-7 Attapulgit (Palygorskite)

2B

14808-60-7 Quartz (SiO₂)

1

• **TLV (Threshold Limit Value established by ACGIH)**

13463-67-7 titanium dioxide

A4

14808-60-7 Quartz (SiO₂)

A2

• **NIOSH-Ca (National Institute for Occupational Safety and Health)**

13463-67-7 titanium dioxide

14808-60-7 Quartz (SiO₂)

• **Canada**

• **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

• **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients are listed.

• **Canadian Ingredient Disclosure list (limit 1%)**

85-68-7 benzyl butyl phthalate

• **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

• **Other regulations, limitations and prohibitive regulations**

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

• **Substances of very high concern (SVHC) according to REACH, Article 57**

85-68-7 benzyl butyl phthalate

9016-45-9 4-nonylphenyl-polyethylene glycol

• **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

(Contd. on page 15)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 20.03.2015

Revision: 19.03.2015

Trade name: Armaflex WB Finish

(Contd. of page 14)

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H350 May cause cancer.
- H351 Suspected of causing cancer.
- H360Df May damage the unborn child. Suspected of damaging fertility.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.
- R36/38 Irritating to eyes and skin.
- R40 Limited evidence of a carcinogenic effect.
- R48 Danger of serious damage to health by prolonged exposure.
- R49 May cause cancer by inhalation.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R61 May cause harm to the unborn child.
- R62 Possible risk of impaired fertility.

Abbreviations and acronyms:

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- WHMIS: Workplace Hazardous Materials Information System (Canada)
- DNEL: Derived No-Effect Level (REACH)
- PNEC: Predicted No-Effect Concentration (REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
- Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
- Carc. 1A: Carcinogenicity, Hazard Category 1A
- Carc. 1B: Carcinogenicity, Hazard Category 1B
- Carc. 2: Carcinogenicity, Hazard Category 2
- Repr. 1B: Reproductive toxicity, Hazard Category 1B
- Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1
- Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1
- Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

Sources

SDS Prepared by:
ChemTel Inc.

(Contd. on page 16)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 20.03.2015

Revision: 19.03.2015

Trade name: Armaflex WB Finish

(Contd. of page 15)

1305 North Florida Avenue
Tampa, Florida USA 33602-2902
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
Website: www.chemtelinc.com



Safety Data Sheet

BOSS® 180 Multi-Seal® Insulation Anchor Pin System Adhesive

Section 1. Identification

Product Identifier BOSS® 180 Multi-Seal® Insulation Anchor Pin System Adhesive
Synonyms 18071; 18001
Manufacturer Stock Numbers 04224WH25; 04224WH10; C04072WH

Recommended use Refer to Technical Information
Uses advised against Refer to Technical Information

Manufacturer Contact
Address Soudal Accumetric
350 Ring Road
Elizabethtown, KY, 42701
USA

Phone	Emergency Phone	Fax
(270) 769-3385	(800) 424-9300 CHEMTREC	(270) 765-2412

Section 2. Hazards Identification

Classification EYE DAMAGE/IRRITATION - Category 2A
HAZARDOUS TO THE AQUATIC ENVIRONMENT - LONG-TERM HAZARD -
Category 3
SENSITIZATION - SKIN - Category 1
SPECIFIC TARGET ORGAN TOXICITY (Repeated Exposure) - Category 2

Signal Word Warning
Pictogram



Hazard Statements	Causes serious eye irritation Harmful to aquatic life with long lasting effects May cause an allergic skin reaction May cause damage to organs through prolonged or repeated exposure.
Precautionary Statements	
Response	Get medical advice/attention if you feel unwell. If eye irritation persists: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Read label before use. Wash contaminated clothing before reuse.
Prevention	Avoid breathing dust/fume/gas/mist/ vapors/spray. Avoid release to the environment Contaminated work clothing must not be allowed out of the workplace. Do not breathe dust/fume/gas/mist/ vapors/spray. Wash hands thoroughly after handling. Wear eye protection/face protection. Wear protective gloves.
Storage	N/A
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Ingredients of unknown toxicity	0%
Hazards not Otherwise Classified	None known

Section 3. Ingredients

CAS	Ingredient Name	Weight %
2224-33-1	Vinyl Oximino Silane	1% - 5%
22984-54-9	Methyl Oximino Silane	1% - 5%
1760-24-3	N-beta-(aminoethyl)-gamma-aminopropyltrimethoxysilane	1% - 5%
63148-62-9	Dimethylpolysiloxane	10% - 30%
112945-52-5	Amorphous fumed silica	5% - 10%
64741-44-2	Distillates (petroleum), straight-run middle	5% - 10%

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-Aid Measures

Eye Contact Immediately flush with water for 15 minutes.

Skin Contact	Remove from skin and immediately flush with water for 15 minutes. Get medical attention if irritation or ill effects develop or persist.
Inhalation	Remove to fresh air. If symptoms persist, obtain appropriate medical attention.
Ingestion	Get medical attention.
Comments	Treat according to person's condition and specifics of exposure.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media	On large fires use dry chemical, foam, or water spray. On small fires use carbon dioxide, dry chemical or water spray. Water can be used to cool fire exposed containers.
Unsuitable Extinguishing Media	None known
Auto-ignition Temperature	Not determined
Flammability Limits in Air	Not determined
Special Fire Fighting Procedures	Self-contained breathing apparatus and protective clothing should be worn when fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.
Unusual Fire or Explosion Hazards	None known

Section 6. Accidental Release Measures

Steps to be taken in case of spill or release	Observe all personal protection equipment. Use absorbent material to collect and contain material for disposal.
	Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Section 7. Handling and Storage

Storage	Keep container closed and store in a cool, well ventilated area, away from water or moisture.
Handling	Avoid breathing vapors in top of shipping container. Keep container closed. Use with adequate ventilation. Avoid contact with skin and clothing. Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits	Ingredient Name	ACGIH	OSHA	STEL
		TLV	PEL	
	Vinyl Oximino Silane	N/A	N/A	N/A
	Methyl Oximino Silane	N/A	N/A	N/A

	N-beta-(aminoethyl)-gamma-aminopropyltrimethoxysilane	N/A	N/A	N/A
	Dimethylpolysiloxane	N/A	N/A	N/A
	Amorphous fumed silica	10 mg/m3	6 mg/m3	N/A
	Distillates (petroleum), straight-run middle	N/A	N/A	N/A
Personal Protective Equipment	N/A			
Component Exposure Limits	Methyl ethyl ketoxime is formed upon contact with water or moisture in the air. Provide adequate ventilation to control exposures to within the exposure guideline of 2 ppm (TWA).			
Engineering Controls	Local Ventilation: Recommended General Ventilation: Recommended			
Eye Protection	Use proper protection - safety glasses as a minimum.			
Skin Protection	Wash at mealtimes and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.			
	Suitable Gloves: Silver Shield® 4H®			
Respiratory Protection	Use respiratory protection unless adequate exhaust ventilation is provided or exposure assessment demonstrates that exposures are within exposure guidelines. Industrial Hygiene Personnel can assist in judging the adequacy of existing engineering controls.			
	Suitable Respirator: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits as determined by air sampling or are unknown, appropriate respiratory protection should be worn. Follow OSHA Respirator Regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.			
Comment	Product evolves methyl ethyl ketoxime (MEKO) when exposed to water or humid air. Provide ventilation during use to control methyl ethyl ketoxime within the exposure guidelines or use respiratory protection.			

Section 9. Physical and Chemical Properties

Physical State	Paste
Color	White
Odor	Slight
Odor Threshold	N/A
Solubility	Dilutable in wet stage
Partition coefficient Water/n-octanol	N/A
VOC%	47 g/L
Viscosity	N/A
Specific Gravity	1.3
Density lbs/Gal	N/A
Pounds per Cubic Foot	N/A

Flash Point	Not applicable
FP Method	N/A
Ph	N/A
Melting Point	Not determined
Boiling Point	Not determined
Boiling Range	N/A
LEL	N/A
UEL	N/A
Evaporation Rate	Not determined
Flammability	N/A
Decomposition Temperature	N/A
Auto-ignition Temperature	N/A
Vapor Pressure	Not determined
Vapor Density	Not determined

Note

The above information is not intended for use in preparing product specifications. Contact Soudal Accumetric before writing specifications.

Section 10. Stability and Reactivity

Conditions to Avoid	None known
Hazardous polymerization	Will not occur
Materials to Avoid / Incompatibility	Oxidizing material can cause a reaction.
Chemical Stability	Stable

Section 11. Toxicological Information

Special Hazard Information on Component	Methyl Oximino Silane (22984-54-9) Possible skin sensitizer Vinyl Oximino Silane (2224-33-1) Possible skin sensitizer
Component Toxicology Information	Methyl Ethyl Ketoxime (MEKO) is formed upon contact with water or humid air. Male rodents exposed to MEKO vapor throughout their lifetime developed liver tumors. Since many commonly used chemicals cause liver tumors in rats and mice, additional testing is planned by the MEKO supplier to determine any relevance to humans. Until more data is known, exposure levels should be maintained as low as achievable.
Carcinogenicity	No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.
Mutagenicity	This product is not known to be a mutagen.
Teratogenicity	This product is not known to be teratogenic.
Reproductive Toxin	This product is not known to be a reproductive toxin.

Section 12. Ecological Information

Environmental Effects	Complete information is not yet available.
Fate and Effects in Waste Water Treatment Plants	Complete information is not yet available.
Environmental Fate and Distribution	Complete information is not yet available.

Section 13. Disposal

Waste Disposal Method	We make no guarantee or warranty of any kind that the use or disposal of this product complies with all local, state, or federal laws. It is also the obligation of each user of the product mentioned herein to determine and comply with the requirements of all applicable statutes. This product is not known to be regulated under RCRA regulations. Disposal of unused portions of this product and process waste containing this product should be done only after a careful evaluation and in compliance with all federal, local and state laws.

Section 14. Transport Information

UN Number	N/A
UN Proper Shipping Name	Caulking & Glaziers, NOI
DOT Classification	None
Packing Group	N/A
Ocean Shipment (IMDG)	Not subject to IMDG code.

Section 15. Regulatory Information

	The contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA Status	All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.
SARA Title III Section 302 Extremely Hazardous Substances	None
SARA Title III Section 304 CERCLA Substances dangereuses	None
SARA Title III Section 312 Hazard Class	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactive: No
SARA Title III Section 313 Toxic Chemicals	None present or none present in regulated quantities.

California Proposition 65	This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm: None known
Massachusetts	Silica, amorphous fumed (112945-52-5)
New Jersey	Silica, amorphous (112945-52-5) Dimethyl siloxane, hydroxy-terminated (70131-67-8) Polydimethylsiloxane (63148-62-9) Methyl tri (ethylmethylketoxime) silane (22984-54-9) Calcium carbonate, treated (1317-65-3) Vinyl oximino silane (2224-33-1)
Pennsylvania	Silica, amorphous (112945-52-5) Dimethyl siloxane, hydroxy-terminated (70131-67-8) Polydimethylsiloxane (63148-62-9) Methyl tri (ethylmethylketoxime) silane (22984-54-9) Calcium carbonate, treated (1317-65-3) Vinyl oximino silane (2224-33-1)
Canada Domestic Substances List	All ingredients are listed on the DSL.

Section 16. Other Information

Revision Date

10/30/2015

Disclaimer

The data contained herein is based upon information that Soudal Accumetric believes to be reliable. Users of this product have the responsibility to determine that suitability of use and to adopt all necessary precautions to ensure the safety and protection of property and persons involved in said use. All statements or suggestions are made without warranty, expressed or implied, regarding the accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof.

Insulating Cement

Version 1.1

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Print Date 08/02/2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : CalCoat-127®

Manufacturer or supplier's details

Company : Johns Manville

Address : P.O. Box 5108
Denver, CO USA 80127

Telephone : 303-978-2000 8:00AM-5:00PM M-F

Emergency telephone number : 1-800-424-9300 (Chemtrec, in English)

Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Skin corrosion : Category 1

Serious eye damage : Category 1

Carcinogenicity : Category 1A

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS Label element

Hazard pictograms



Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust or mist.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281 Use personal protective equipment as required.

Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/

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shower.

P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Immediately call a POISON CENTER or doctor/ physician.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P363 Wash contaminated clothing before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Hazardous components**

Chemical Name	CAS-No.	Concentration (%)
cement, portland, chemicals	65997-15-1	>= 30 - < 50
synthetic calcium silicate	1344-95-2	>= 30 - < 50
Continuous Filament Glass Fibers	Not Assigned	>= 20 - < 30
Crystalline silica	14808-60-7	>= 0.1 - < 1

SECTION 4. FIRST AID MEASURES

General advice	: Do not leave the victim unattended.
If inhaled	: If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of eye contact	: Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed	: Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5. FIREFIGHTING MEASURES

Hazardous combustion products	: No hazardous combustion products are known

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- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid dust formation.
- Methods and materials for containment and cleaning up : Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
- Conditions for safe storage : Keep in a dry, cool place.
- Materials to avoid : No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
cement, portland, chemicals	65997-15-1	TWA (Respirable fraction)	1 mg/m ³	ACGIH
		TWA (Respirable)	5 mg/m ³	NIOSH REL
		TWA (total)	10 mg/m ³	NIOSH REL
		TWA (total dust)	15 mg/m ³	OSHA
		TWA (respirable fraction)	5 mg/m ³	OSHA
		TWA (Total dust)	10 mg/m ³	OSHA
		TWA (respirable)	5 mg/m ³	OSHA

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		dust fraction)		
		TWA (Dust)	50 Million particles per cubic foot	OSHA
synthetic calcium silicate	1344-95-2	TWA (Respirable)	5 mg/m3	NIOSH REL
		TWA (total)	10 mg/m3	NIOSH REL
		TWA (total dust)	15 mg/m3	OSHA
		TWA (respirable fraction)	5 mg/m3	OSHA
		TWA	10 mg/m3	ACGIH
Continuous Filament Glass Fibers	Not Assigned	TWA (Total dust)	10 mg/m3	ACGIH
		TWA (Total dust)	15 mg/m3	OSHA
		TWA (Respirable dust)	5 mg/m3	OSHA
		TWA (Respirable dust)	5 mg/m3	ACGIH
Crystalline silica	14808-60-7	TWA (Respirable fraction)	0.025 mg/m3	ACGIH
		TWA (total dust)	30 mg/m3 / %SiO ₂ +2	OSHA
		TWA (respirable)	10 mg/m3 / %SiO ₂ +2	OSHA
		TWA (respirable)	250 mppcf / %SiO ₂ +5	OSHA
		TWA (Respirable dust)	0.05 mg/m3	NIOSH REL
		TWA (Respirable fraction)	0.1 mg/m3	OSHA

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection
Remarks : For prolonged or repeated contact use protective gloves.

Eye protection : Safety glasses

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- Skin and body protection : If used and stored as directed, no special protective equipment is necessary.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Written instructions for handling must be available at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : solid
- Colour : yellow
- Odour : not significant
- Odour Threshold : No data available
- pH : Not applicable
- : Not applicable
- : Not applicable
- Flash point : Not applicable
- Evaporation rate : Not applicable
- Flammability (solid, gas) : No data available
- Upper explosion limit : Not applicable
- Lower explosion limit : Not applicable
- Vapour pressure : Not applicable
- Relative vapour density : Not applicable
- Relative density : No data available
- Solubility(ies)
Water solubility : Insoluble
- Solubility in other solvents : No data available
- Partition coefficient: n-octanol/water : No data available
- Auto-ignition temperature : No data available
- Thermal decomposition : No data available
- Viscosity, dynamic : No data available

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Viscosity, kinematic : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : Stable under recommended storage conditions.
No hazards to be specially mentioned.

Conditions to avoid : No data available

SECTION 11. TOXICOLOGICAL INFORMATION

IARC	Group 1: Carcinogenic to humans	
	Crystalline silica	14808-60-7
ACGIH	Suspected human carcinogen	
	Crystalline silica	14808-60-7
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	
NTP	Known to be human carcinogen	
	Crystalline silica	14808-60-7

STOT - single exposure**Components:**

synthetic calcium silicate:
Target Organs: Eyes, Lungs

Further information**Product:**

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability

No data available

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Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation

40 CFR Protection of Environment; Part 82 Protection of
Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured with a
Class I or Class II ODS as defined by the U.S. Clean Air Act
Section 602 (40 CFR 82, Subpt. A, App.A + B).Additional ecological
information

: No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Contaminated packaging

: Empty containers should be taken to an approved waste
handling site for recycling or disposal.
Packaging that can not be reused after cleaning must be
disposed or recycled in accordance with all federal, national
and local regulations.**SECTION 14. TRANSPORT INFORMATION****International transport regulations**

These products are not classified as dangerous goods according to international transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA list

: Not relevant

Not relevant

EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302: No chemicals in this material are subject to the reporting
requirements of SARA Title III, Section 302.

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SARA 313

: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM/ Intermediate or Final VOC's (40 CFR 60.489).

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

Crystalline silica

14808-60-7

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL.

SECTION 16. OTHER INFORMATION**Further information**

Revision Date : 01/16/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Print Date: 05-06-2015

CHILDERS CP-10
801796PM**SAFETY DATA SHEET**

REVISION DATE: 12-12-2014

SUPERSEDES: 10-20-2014

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER**PRODUCT INFORMATION**

PRODUCT: CHILDERS CP-10
PRODUCT DESCRIPTION: Coating
INTENDED USE: Coating
PRODUCT IDENTIFIER: 801796PM

COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
1105 S. Frontenac Street
Aurora, IL 60504
Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION**GHS Hazard Symbols:**

GHS Signal Word: Warning
GHS Classification: Carcinogenicity Category 2
GHS Hazard Phrases: Suspected of causing cancer.

GHS Precautions:
Safety Precautions: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
First Aid Measures: IF exposed or concerned: Get medical advice/attention.
Storage: Store locked up.
Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Crystalline silica	14808-60-7	10 - 30	Carc. 1A; H350 STOT RE 1; H372	* (see below)
Titanium dioxide	13463-67-7	1 - 5	Carc. 2; H351	* (see below)
2,2,4-Trimethyl-1,3-pentanediolmonoisobutyrate	25265-77-4	1 - 5	Aquatic Acute 3; H402	
Attapulgate	12174-11-7	1 - 5	Carc. 2; H351	* (see below)
Vinyl acetate	108-05-4	0.1 - 1	Carc. 2; H351 Flam. Liq. 2; H225	

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*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.

IF ON SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:	Use water spray, foam, dry chemical or carbon dioxide.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	There is a possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.
SPECIAL FIRE FIGHTING INSTRUCTIONS:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide, Carbon monoxide

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION:	No adverse health effects expected from the clean-up of spilled material. Follow personal protective equipment recommendations found in Section 8 of this MSDS.
METHODS FOR CLEAN-UP:	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems. Avoid creating dusts. Cover material with absorbent and moisten and collect for disposal.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: No special handling instructions due to toxicity. Avoid breathing material.

Storage: Store in a cool, dry place.
Consult the Technical Data Sheet for specific storage instructions.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Crystalline silica	* (see below)	0.025 mg/m ³ TWA (respirable fraction)	((250)/(%SiO ₂ + 5) mppcf TWA (respirable)); ((10)/(%SiO ₂ + 2) mg/m ³ TWA (respirable)); ((30)/(%SiO ₂ + 2) mg/m ³ TWA (total dust))
Titanium dioxide	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)
Cellulose	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Vinyl acetate		10 ppm TWA 15 ppm STEL	Not established

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

VENTILATION: Use local exhaust ventilation or other engineering controls to minimize exposures.

EYE PROTECTION: Wear safety glasses when handling this product.

SKIN PROTECTION: Avoid skin contact by wearing chemically resistant gloves.

GLOVES: Not normally required. Use nitrile gloves if conditions warrant.

RESPIRATORY PROTECTION: Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with dust/mist filter.
Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	White
ODOR:	Sweet
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	Non flammable
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	11.30
SPECIFIC GRAVITY:	1.370
SOLUBILITY:	Not established

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OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	63.8
VOC, weight percent	1.89
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	45g/liter of material

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Not established
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide

SECTION 11: TOXICOLOGICAL INFORMATION**Component Toxicity / Toxicology Data:**

COMPONENT NAME	LD50/LC50
Crystalline silica	ORAL LD50 RAT 500 MG/KG
Aluminum hydroxide	ORAL LD50 RAT > 5,000 MG/KG
Titanium dioxide	ORAL LD50 RAT > 10,000 MG/KG
2,2,4-Trimethyl-1,3-pentanediolmonoisobutyrate	ORAL LD50 RAT 3,200 MG/KG DERMAL LD50 RAT > 15,200.00 MG/KG
Cellulose	INHALATION LC50-4H RAT > 5,800.00 MG/M3

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause minor skin irritation, defatting, and dermatitis.

Serious eye damage / irritation :Can cause minor irritation, tearing and reddening.

Respiratory / skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: Contains a material that may cause cancer.

Reproductive toxicity: No data available.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: No data available.

Specific target organ toxicity-repeated exposure: No data available.

Target organs potentially affected by exposure: Lungs

Aspiration hazard: No data available.

Medical Conditions Aggravated by Exposure: Lung disease

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available for this product.

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MOBILITY: No data available.
PERSISTENCE: No data available.
BIOACCUMULATION: No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
2,2,4-Trimethyl-1,3-pentanediolmonoisobutyrate	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 30 mg/L Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): 72 Hr EC50 Pseudokirchneriella subcapitata: 18.4 mg/L

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

US DOT: NOT REGULATED
IATA: NOT REGULATED

SECTION 15: REGULATORY INFORMATION**INVENTORY STATUS**

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: The components of this product are included on the DSL or are exempt from DSL requirements.

EUROPEAN REACH: As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.

AUSTRALIA AICS: This product is in compliance with the Australian Inventory of Chemical Substances requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
Vinyl acetate	108-05-4	0.1 - 1

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System.
D2A

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Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List	CAS	Percent
Quartz (Carcinogen)	14808-60-7	10 - 30
Titanium dioxide (Carcinogen)	13463-67-7	1 - 5
Acetaldehyde (Carcinogen)	75-07-0	0.001 - 0.01
Formaldehyde (Carcinogen)	50-00-0	< 10 ppm
Lead (Carcinogen)	7439-92-1	< 10 ppm
1,4-Dioxane (Carcinogen)	123-91-1	< 10 ppm
Cadmium (Carcinogen)	7440-43-9	< 10 ppm
Lead (Developmental toxin)	7439-92-1	< 10 ppm
Cadmium (Developmental toxin)	7440-43-9	< 10 ppm
Methanol (Developmental toxin)	67-56-1	< 10 ppm
Lead (Female reproductive toxin)	7439-92-1	< 10 ppm
Lead (Male reproductive toxin)	7439-92-1	< 10 ppm
Cadmium (Male reproductive toxin)	7440-43-9	< 10 ppm

Substances of Very High Concern (SVHC) Content:

Unless listed below, this product does not contain SVHC's.

4-Nonylphenol, ethoxylated
tert-Octylphenol, ethoxylated**SECTION 16: OTHER INFORMATION**

SDS VERSION DATE: 12-12-2014

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 0 FLAMMABILITY -- 0 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

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REVISION DATE: 03-20-2015

SUPERSEDES: 10-21-2014

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER**PRODUCT INFORMATION**

PRODUCT: CHILDERS CP-30 LO
PRODUCT DESCRIPTION: Coating
INTENDED USE: Coating
PRODUCT IDENTIFIER: 801811PM

COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
1105 S. Frontenac Street
Aurora, IL 60504
Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

**GHS Hazard
Symbols:**



GHS Signal Word:
GHS Classification:

Warning
Skin Sensitisation Category 1; Carcinogenicity Category 2; Flammable Liquid Category 3; Hazardous to the aquatic environment - Acute Category 3; Hazardous to the aquatic environment - Chronic Category 3

**GHS Hazard
Phrases:**

Flammable liquid and vapour.; May cause an allergic skin reaction.; Suspected of causing cancer.; Harmful to aquatic life.; Harmful to aquatic life with long lasting effects.

GHS Precautions:

Safety Precautions:

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapours/spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF ON SKIN: Wash with plenty of soap and water. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. In case of fire: Use water spray, foam, dry chemical or carbon dioxide to extinguish.

Storage:

Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Stoddard solvent	8052-41-3	30 - 50	Asp. Tox. 1; H304	Note P
Titanium dioxide	13463-67-7	1 - 5	Carc. 2; H351	* (see below)
Trimethyl benzene	25551-13-7	1 - 5	Acute Tox. 4; H312 Acute Tox. 4; H302 Eye Irrit. 2; H319 Skin Irrit. 2; H315	
Trimethylbenzene, 1,2,4-	95-63-6	1 - 5	Aquatic Chronic 2; H411 Acute Tox. 4; H332 Eye Irrit. 2; H319 Flam. Liq. 3; H226 Skin Irrit. 2; H315 STOT SE 3; H335	
Wood rosin	8050-09-7	0.1 - 1	Skin Sens. 1; H317	
Antimony trioxide	1309-64-4	0.1 - 1	Aquatic Acute 1; H400 Carc. 2; H351	* (see below)
Tri(nonylphenol)phosphite	26523-78-4	0.1 - 1	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Skin Sens. 1; H317	
Naphthalene	91-20-3	0.1 - 1	Aquatic Chronic 1; H410 Acute Tox. 2; H330 Acute Tox. 4; H302 Carc. 2; H351	

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

IF ON SKIN: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Restore breathing, if necessary. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention immediately. Drink two glasses of water or milk to dilute. Do not give anything by mouth to an unconscious person. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:

Use water spray, foam, dry chemical or carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Vapors are heavier than air and can travel to a source of ignition and flash back.

SPECIAL FIRE FIGHTING INSTRUCTIONS:

Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

HAZARDOUS COMBUSTION PRODUCTS:

Carbon dioxide, Carbon monoxide Sulfur containing gases

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Chlorine containing gases

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred. Evaporation of volatile substances can lead to the displacement of air creating an environment that can cause asphyxiation.

METHODS FOR CLEAN-UP: Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.
Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: Avoid contacting and avoid breathing the material. Use only in a well ventilated area.
Keep away from heat, sparks and flame.
Wash thoroughly after handling.
Keep container closed.
Emptied container retains vapor and product residue.
Observe all labeled precautions until container is cleaned.
Drums of this material should be grounded when pouring.
DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.

Storage: Store in a cool, dry, ventilated location. Keep away from heat and flame. Keep container closed.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**EXPOSURE LIMITS:**

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Stoddard solvent	Note P	100 ppm TWA	500 ppm TWA; 2900 mg/m3 TWA
Calcium sulfate	* (see below)	10 mg/m3 TWA (inhalable fraction)	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
Talc	* (see below)	2 mg/m3 TWA (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)	Not established
Titanium dioxide	* (see below)	10 mg/m3 TWA	15 mg/m3 TWA (total dust)
Trimethyl benzene		25 ppm TWA	Not established
Calcium carbonate	* (see below)	No data available.	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

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Cumene		50 ppm TWA	50 ppm TWA; 245 mg/m3 TWA Skin absorption may potentially contribute to the overall exposure to this material.
Naphthalene		10 ppm TWA Skin absorption may potentially contribute to the overall exposure to this material.	10 ppm TWA; 50 mg/m3 TWA
Ethylbenzene		20 ppm TWA	100 ppm TWA; 435 mg/m3 TWA

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

- VENTILATION:** Use local exhaust ventilation or other engineering controls to minimize exposures.
- EYE PROTECTION:** Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.
- SKIN PROTECTION:** Avoid skin contact by wearing chemically resistant gloves and long sleeved shirt. An apron may be appropriate if splashing can occur. Skin absorption may potentially contribute to the overall exposure to this material. Appropriate measures should be taken to prevent absorption so that the TLV is not invalidated.
- GLOVES:** Nitrile
- RESPIRATORY PROTECTION:** Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with organic vapor cartridge. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	White
ODOR:	Solvent Mild
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	42C; 108F TCC
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	9.60
SPECIFIC GRAVITY:	1.150
SOLUBILITY:	Not established

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OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	57.0
VOC, weight percent	40.89
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	469g/liter of material

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Strong oxidizing agents
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide Sulfur containing gases Chlorine containing gases

SECTION 11: TOXICOLOGICAL INFORMATION**Component Toxicity / Toxicology Data:**

COMPONENT NAME	LD50/LC50
Aluminum hydroxide	ORAL LD50 RAT > 5,000 MG/KG
Calcium sulfate	ORAL LD50 RAT > 3,000 MG/KG
Titanium dioxide	ORAL LD50 RAT > 10,000 MG/KG
Trimethylbenzene, 1,2,4-	ORAL LD50 RAT 3,400 MG/KG INHALATION LC50-4H RAT 18.00 G/M3 DERMAL LD50 RABBIT > 3,160.00 MG/KG
Calcium carbonate	ORAL LD50 RAT 6,450 MG/KG

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Serious eye damage / irritation: Can cause moderate irritation, tearing and reddening.

Respiratory / skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: Contains a material that is suspected of causing cancer.

Reproductive toxicity: No data available.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: May cause respiratory irritation.

Specific target organ toxicity-repeated exposure: No data available.

Target organs potentially affected by exposure: Kidneys Central nervous system Lungs Blood Skin Liver

Aspiration hazard: No data available.

Medical Conditions Aggravated by Exposure: Kidney disease, Lung disease, Blood disorders (like anemia), Skin disease including eczema and sensitization, Liver disease

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OVERVIEW: No ecological information available for this product.
MOBILITY: No data available.
PERSISTENCE: No data available.
BIOACCUMULATION: No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
Calcium sulfate	Acute Toxicity (Fish): 96 Hr LC50 <i>Lepomis macrochirus</i> : 2980 mg/L [static]; 96 Hr LC50 <i>Pimephales promelas</i> : >1970 mg/L [static] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Chlorinated paraffin	Acute Toxicity (Fish): 96 Hr LC50 <i>Lepomis macrochirus</i> : >300 mg/L [static]; 96 Hr LC50 <i>Oncorhynchus mykiss</i> : >0.0109 mg/L [flow-through]; 96 Hr LC50 <i>Oncorhynchus mykiss</i> : 94.5 - 271 mg/L [static]; 96 Hr LC50 <i>Lepomis macrochirus</i> : >0.1 mg/L [flow-through]; 96 Hr LC50 <i>Pimephales promelas</i> : >100 mg/L [static] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Talc	Acute Toxicity (Fish): 96 Hr LC50 <i>Brachydanio rerio</i> : >100 g/L [semi-static] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Trimethyl benzene	Acute Toxicity (Fish): 96 Hr LC50 <i>Pimephales promelas</i> : 7.72 mg/L [flow-through] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Trimethylbenzene, 1,2,4-	Acute Toxicity (Fish): 96 Hr LC50 <i>Pimephales promelas</i> : 7.19 - 8.28 mg/L [flow-through] Acute Toxicity (Daphnia): 48 Hr EC50 <i>Daphnia magna</i> : 6.14 mg/L Acute Toxicity (Algae): Not established

SECTION 13: DISPOSAL CONSIDERATIONS

This product meets the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. It is ignitable waste class D001. Disposal via incineration is recommended. Consult your state, local, or provincial authorities for more restrictive requirements.

LAND DISPOSAL RESTRICTIONS: Naphthalene ethylbenzene

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

US DOT: UN1139, COATING SOLUTION, 3, III
IATA: UN1139, COATING SOLUTION, 3, III
IMDG: COATING SOLUTION

SECTION 15: REGULATORY INFORMATION**INVENTORY STATUS**

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: The components of this product are included on the DSL or are exempt from DSL requirements.

EUROPEAN REACH: As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.

AUSTRALIA AICS: This product is in compliance with the Australian Inventory of

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KOREAN TCCL: Chemical Substances requirements.
 This product is in compliance with the Korean Existing Chemicals List requirements.

CHINA IECSC INVENTORY: This product is in compliance with the Inventory of Existing Chemical Substances in China (IECSC) requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Cumene	98-82-8	0.1 - 1
Antimony compounds	1309-64-4	0.1 - 1
Naphthalene	91-20-3	0.1 - 1
ethylbenzene	100-41-4	0.1 - 1

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List	CAS	Percent
Titanium dioxide (Carcinogen)	13463-67-7	1 - 5
Cumene (Carcinogen)	98-82-8	0.1 - 1
Antimony(III) oxide (Carcinogen)	1309-64-4	0.1 - 1
Naphthalene (Carcinogen)	91-20-3	0.1 - 1
ethylbenzene (Carcinogen)	100-41-4	0.1 - 1
Quartz (Carcinogen)	14808-60-7	0.01 - 0.1
Benzene (Carcinogen)	71-43-2	0.001 - 0.01
Lead (Carcinogen)	7439-92-1	0.001 - 0.01
Arsenic compounds (inorganic) (Carcinogen)	7440-38-2	0.001 - 0.01
Cadmium (Carcinogen)	7440-43-9	< 10 ppm
Benzene (Developmental toxin)	71-43-2	0.001 - 0.01
Lead (Developmental toxin)	7439-92-1	0.001 - 0.01
Cadmium (Developmental toxin)	7440-43-9	< 10 ppm
Toluene (Developmental toxin)	108-88-3	< 10 ppm
Lead (Female reproductive toxin)	7439-92-1	0.001 - 0.01
Benzene, methyl- (Female reproductive toxin)	108-88-3	< 10 ppm
Benzene (Male reproductive toxin)	71-43-2	0.001 - 0.01
Lead (Male reproductive toxin)	7439-92-1	0.001 - 0.01
Cadmium (Male reproductive toxin)	7440-43-9	< 10 ppm

Substances of Very High Concern (SVHC) Content:

Unless listed below, this product does not contain SVHC's.

SECTION 16: OTHER INFORMATION

SDS VERSION DATE:

03-20-2015

Print Date: 05-06-2015

CHILDERS CP-30 LO
801811PM**SAFETY DATA SHEET**

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 2 FLAMMABILITY -- 2 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

Print Date: 05-11-2015

 CHILDERS CP-35 (CP0350)
 801813PM

SAFETY DATA SHEET

REVISION DATE: 04-29-2015

SUPERSEDES: 04-22-2015

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER

PRODUCT INFORMATION

PRODUCT: CHILDERS CP-35 (CP0350)
 PRODUCT DESCRIPTION: Coating
 INTENDED USE: Coating
 PRODUCT IDENTIFIER: 801813PM

COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
 1105 S. Frontenac Street
 Aurora, IL 60504
 Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
 Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

GHS Hazard Symbols:



GHS Signal Word: Warning
GHS Classification: Serious Eye Damage/Eye Irritation Category 2; Hazardous to the aquatic environment - Acute Category 2; Hazardous to the aquatic environment - Chronic Category 2
GHS Hazard Phrases: Causes serious eye irritation.; May cause harm to breast-fed children.; Toxic to aquatic life.; Toxic to aquatic life with long lasting effects.
GHS Precautions:
Safety Precautions: Obtain special instructions before use. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact during pregnancy/while nursing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
First Aid Measures: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Collect spillage.
Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Styrene/butyl acrylate copolymer	25767-47-9	10 - 30	Eye Irrit 2; H319	
C14-17, chlorinated paraffin	85535-85-9	1 - 5	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Acute Tox 4; H302	

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Titanium dioxide	13463-67-7	1 - 5	Carc. 2; H351	* (see below)

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

IF ON SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:	Use water spray, foam, dry chemical or carbon dioxide.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	There is a possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.
SPECIAL FIRE FIGHTING INSTRUCTIONS:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide, Carbon monoxide Chlorine containing gases

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION:	No adverse health effects expected from the clean-up of spilled material. Follow personal protective equipment recommendations found in Section 8 of this MSDS.
METHODS FOR CLEAN-UP:	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: No special handling instructions due to toxicity.

Storage: Store in a cool, dry place. Protect from freezing
Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**EXPOSURE LIMITS:**

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CHILDERS CP-35 (CP0350)
801813PM**SAFETY DATA SHEET**

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Titanium dioxide	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

VENTILATION:	Use local exhaust ventilation or other engineering controls to minimize exposures.
EYE PROTECTION:	Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.
SKIN PROTECTION:	Not normally required. Wear chemically resistant gloves to prevent prolonged or repeated contact.
GLOVES:	Not normally required. Use nitrile gloves if conditions warrant.
RESPIRATORY PROTECTION:	Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	White
ODOR:	Slight Ammonia
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	Non flammable
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	12.10
SPECIFIC GRAVITY:	1.500
SOLUBILITY:	Not established
OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	73.0
VOC, weight percent	Not determined
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	36g/liter of material

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CHILDERS CP-35 (CP0350)
801813PM**SAFETY DATA SHEET****SECTION 10: STABILITY AND REACTIVITY**

STABILITY: Stable under normal conditions.
CHEMICAL INCOMPATIBILITY: Not established
HAZARDOUS POLYMERIZATION: Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide Chlorine containing gases

SECTION 11: TOXICOLOGICAL INFORMATION**Component Toxicity / Toxicology Data:**

COMPONENT NAME	LD50/LC50
Aluminum hydroxide	ORAL LD50 RAT > 5,000 MG/KG
Water	ORAL LD50 RAT > 90 ML/KG
C14-17, chlorinated paraffin	ORAL LD50 RAT 2,000 MG/KG
2,2,4-Trimethyl-1,3-pentanediolmonoisobutyrate	ORAL LD50 RAT 3,200 MG/KG DERMAL LD50 RAT > 15,200.00 MG/KG
Titanium dioxide	ORAL LD50 RAT > 10,000 MG/KG

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause minor skin irritation, defatting, and dermatitis.

Serious eye damage / irritation :Can cause moderate irritation, tearing and reddening.

Respiratory / skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: Contains a material that is suspected of causing cancer.

Reproductive toxicity: No data available.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: No data available.

Specific target organ toxicity-repeated exposure: No data available.

Target organs potentially affected by exposure: Kidneys Liver Lungs

Aspiration hazard: No data available.

Medical Conditions Aggravated by Exposure: Liver disease, Kidney disease, Lung disease

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available for this product.
MOBILITY: No data available.
PERSISTENCE: No data available.
BIOACCUMULATION: No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
2,2,4-Trimethyl-1,3-	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 30 mg/L

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801813PM**SAFETY DATA SHEET**

pentanediolmonoisobutyrate	Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): 72 Hr EC50 Pseudokirchneriella subcapitata: 18.4 mg/L

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

US DOT: NOT REGULATED
IATA: NOT REGULATED
IMDG: UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID,
N.O.S. (C14-C17 CHLORINATED PARAFFIN), 9, III, MARINE
POLLUTANT

SECTION 15: REGULATORY INFORMATION**INVENTORY STATUS**

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: The components of this product are included on the DSL or are exempt from DSL requirements.

EUROPEAN REACH: As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.

AUSTRALIA AICS: This product contains a component that is not on the Australian Inventory (AICS).

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING**EPA SARA Title III Section 313**

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List	CAS	Percent
Titanium dioxide (Carcinogen)	13463-67-7	1 - 5
Quartz (Carcinogen)	14808-60-7	0.01 - 0.1
Formaldehyde (Carcinogen)	50-00-0	0.001 - 0.01
Dibromoacetonitrile (Carcinogen)	3252-43-5	0.001 - 0.01
Acrylamide (Carcinogen)	79-06-1	< 10 ppm
Ethyl acrylate (Carcinogen)	140-88-5	< 10 ppm

Print Date: 05-11-2015

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Lead	(Carcinogen)	7439-92-1	< 10 ppm
1,4-Dioxane	(Carcinogen)	123-91-1	< 10 ppm
Cadmium	(Carcinogen)	7440-43-9	< 10 ppm
2,2'-Iminodiethanol	(Carcinogen)	111-42-2	< 10 ppm
Acrylonitrile	(Carcinogen)	107-13-1	< 10 ppm
Acrylamide	(Developmental toxin)	79-06-1	< 10 ppm
Lead	(Developmental toxin)	7439-92-1	< 10 ppm
Cadmium	(Developmental toxin)	7440-43-9	< 10 ppm
Lead	(Female reproductive toxin)	7439-92-1	< 10 ppm
Acrylamide	(Male reproductive toxin)	79-06-1	< 10 ppm
Lead	(Male reproductive toxin)	7439-92-1	< 10 ppm
Cadmium	(Male reproductive toxin)	7440-43-9	< 10 ppm

Substances of Very High Concern (SVHC) Content:

Unless listed below, this product does not contain SVHC's.
 tert-Octylphenol, ethoxylated

SECTION 16: OTHER INFORMATION

SDS VERSION DATE: 04-29-2015

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 0 FLAMMABILITY -- 0 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

SAFETY DATA SHEET**Childers™ CHIL-LAG® CP-52C**

Version 1.1

Revision Date 04/01/2022

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Childers™ CHIL-LAG® CP-52C
Product code : 100000014985

Manufacturer or supplier's details

Company : H.B. Fuller Construction Products

Address : 1105 South Frontenac
Aurora, IL, 60504

Telephone : 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

Recommended use of the chemical and restrictions on use

Recommended use : Water based sealant

Restrictions on use : For industrial use only.

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance	liquid
Color	white
Odor	sweet

GHS Classification

Specific target organ toxicity - repeated exposure : Category 2 (Kidney)

GHS label elements

Hazard pictograms



Signal Word

: Warning

Hazard Statements:

H373 May cause damage to organs (Kidney) through prolonged or repeated exposure.

Precautionary Statements:

Prevention: P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

SAFETY DATA SHEET

Childers™ CHIL-LAG® CP-52C

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Response: P314 Get medical advice/ attention if you feel unwell.

Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Carcinogenicity:

IARC

Group 1: Carcinogenic to humans During normal handling of the product, this substance is encapsulated within the product and will not present a cancer exposure risk.

Quartz (SiO₂) 14808-60-7

Group 2B: Possibly carcinogenic to humans During normal handling of the product, this substance is encapsulated within the product and will not present a cancer exposure risk.

Paraffin waxes and 63449-39-8

Hydrocarbon waxes, chloro

Alkanes, chloro 61788-76-9

titanium dioxide 13463-67-7

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

Known to be human carcinogen During normal handling of the product, this substance is encapsulated within the product and will not present a cancer exposure risk.

Quartz (SiO₂) 14808-60-7

Reasonably anticipated to be a human carcinogen During normal handling of the product, this substance is encapsulated within the product and will not present a cancer exposure risk.

Paraffin waxes and 63449-39-8

Hydrocarbon waxes, chloro

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration [%]
calcium carbonate	471-34-1	20 - 30
Paraffin waxes and Hydrocarbon waxes, chloro	63449-39-8	1 - 5
Alkanes, chloro	61788-76-9	1 - 5
titanium dioxide	13463-67-7	1 - 5
ethylene glycol	107-21-1	1 - 5
Quartz (SiO ₂)	14808-60-7	0.1 - 1

Actual concentration is withheld as a trade secret

SAFETY DATA SHEET**Childers™ CHIL-LAG® CP-52C**

Version 1.1

Revision Date 04/01/2022

SECTION 4. FIRST AID MEASURES

General advice	: Show this material safety data sheet to the doctor in attendance.
If inhaled	: Move to fresh air. If symptoms persist, call a physician.
In case of skin contact	: Wash off with soap and water.
In case of eye contact	: Flush eyes with water at least 15 minutes. Get medical attention if eye irritation develops or persists.
If swallowed	: Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this SDS.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	: Not combustible. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: none
Specific hazards during fire fighting	: Cool closed containers exposed to fire with water spray.
Specific extinguishing methods	:
Further information	: This product is an aqueous mixture that will not burn. Dried product film will burn in a fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Refer to protective measures listed in sections 7 and 8.
Environmental precautions	: No special environmental precautions required. Prevent product from entering drains.
Methods and materials for containment and cleaning up	: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

SAFETY DATA SHEET

Childers™ CHIL-LAG® CP-52C

Version 1.1

Revision Date 04/01/2022

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : No special precautions are needed in handling this material.
- Conditions for safe storage : Keep container closed when not in use.
Keep in a dry, cool place.
- Materials to avoid : Do not freeze.
No special restrictions on storage with other products.
- Storage temperature : $\geq 40^{\circ}\text{F}$

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
calcium carbonate	471-34-1	PEL (Total dust)	10 mg/m ³	CAL PEL
		PEL (respirable dust fraction)	5 mg/m ³	CAL PEL
titanium dioxide	13463-67-7	TWA	10 mg/m ³	ACGIH
		TWA (total dust)	15 mg/m ³	OSHA Z-1
		TWA (Total)	10 mg/m ³	OSHA P0
		TWA (Total dust)	10 mg/m ³	OSHA P0
ethylene glycol	107-21-1	C	50 ppm 125 mg/m ³	OSHA P0
		C	100 mg/m ³	ACGIH
		C (Vapor)	40 ppm 100 mg/m ³	CAL PEL
		TWA (Vapor)	25 ppm	ACGIH
		STEL (Vapor)	50 ppm	ACGIH
		STEL (Inhalable fraction, Aerosol only)	10 mg/m ³	ACGIH
Quartz (SiO ₂)	14808-60-7	TWA (Respirable particulate matter)	0.025 mg/m ³	ACGIH
		TWA (total)	30 mg/m ³	OSHA Z-3

SAFETY DATA SHEET

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		dust)	/ %SiO ₂ +2	
		TWA (respirable)	10 mg/m ³ / %SiO ₂ +2	OSHA Z-3
		TWA (respirable)	250 mppcf / %SiO ₂ +5	OSHA Z-3
		TWA (Respirable fraction)	0.1 mg/m ³	OSHA P0
		TWA (Respirable dust)	0.05 mg/m ³	OSHA Z-1
		PEL (Respirable dust)	0.05 mg/m ³	CAL PEL
		TWA (respirable dust fraction)	0.1 mg/m ³	OSHA P0

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.
In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection

Material : Nitrile rubber
Remarks : For prolonged or repeated contact use protective gloves.

Eye protection : Safety glasses

Protective measures : No special protective equipment required.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid
 Color : white
 Odor : sweet
 Odor Threshold : no data available
 Melting point/freezing point : 32 °F
 Boiling point/boiling range : 212 °F
 Flash point : not applicable
 Evaporation rate : is not determined
 Flammability (solid, gas) : Not classified as a flammability hazard

SAFETY DATA SHEET**Childers™ CHIL-LAG® CP-52C**

Version 1.1

Revision Date 04/01/2022

Upper explosion limit	: Upper flammability limit is not determined
Lower explosion limit	: Lower flammability limit is not determined
Vapor pressure	: is not determined
Relative vapor density	: is not determined
Density	: 11.2 lb/gal
Solubility(ies)	
Water solubility	: dispersible
Partition coefficient: n-octanol/water	: no data available
Autoignition temperature	: is not determined
VOC, less water, in g/l	: 69

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	: The product is chemically stable.
Possibility of hazardous reactions	: Hazardous polymerization does not occur.
Hazardous decomposition products	: Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity****Product:**

Acute oral toxicity	: Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method

Components:**ethylene glycol:**

Acute oral toxicity	: LD50 Oral Rat: 4,000 mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

SAFETY DATA SHEET**Childers™ CHIL-LAG® CP-52C**

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No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT-single exposure

No data available

STOT-repeated exposure

No data available

Aspiration toxicity

No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****Paraffin waxes and Hydrocarbon waxes, chloro :**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.0109 mg/l
Exposure time: 96 h
Test Method: flow-through test

Persistence and degradability

No data available

Bioaccumulative potential**Mobility in soil**

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

SAFETY DATA SHEET**Childers™ CHIL-LAG® CP-52C**

Version 1.1

Revision Date 04/01/2022

Waste from residues : To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.
The hazard and precautionary statements displayed on the label also apply to any residues left in the container.

SECTION 14. TRANSPORT INFORMATION**International Regulations****IATA-DGR**

UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(ALKANES, C14-17, CHLORO)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964

IMDG-Code

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(ALKANES, C14-17, CHLORO)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation**49 CFR**

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SAFETY DATA SHEET**Childers™ CHIL-LAG® CP-52C**

Version 1.1

Revision Date 04/01/2022

SECTION 15. REGULATORY INFORMATION**SARA 311/312 Hazards** : Specific target organ toxicity (single or repeated exposure)**SARA 302** : This material does not contain any components with a section 302 EHS TPQ.**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

ethylene glycol 107-21-1

Clean Air Act

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

ethylene glycol 107-21-1

US State Regulations**California Prop 65** Please contact Supplier for more information.**The ingredients of this product are reported in the following inventories:****TSCA** All substances listed as active on the TSCA inventory**DSL** All components of this product are on the Canadian DSL**AIIC** On the inventory, or in compliance with the inventory**KECI** On the inventory, or in compliance with the inventory**PICCS** On the inventory, or in compliance with the inventory**IECSC** On the inventory, or in compliance with the inventory**Inventories Legend** TSCA (USA), DSL (Canada), REACH(Europe), AIIC (Australia), NZIoC (New Zealand), ENCS (Japan), KECI (Korea), PICCS (Philippines), IECSC (China), TWINV (Taiwan)**SECTION 16. OTHER INFORMATION**

Prepared by: Global Regulatory Office - phone: 1-651-236-5842 - email: msds.request@hbfuller.com

SAFETY DATA SHEET

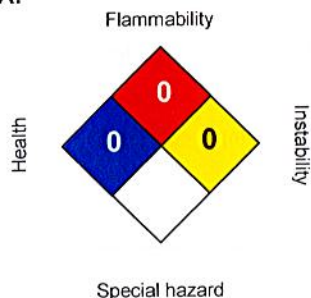
Childers™ CHIL-LAG® CP-52C

Version 1.1

Revision Date 04/01/2022

Further information

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to the H.B. Fuller Company from its suppliers, and because the H.B. Fuller Company has no control over the conditions of handling and use, the H.B. Fuller Company makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and the H.B. Fuller Company assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B. Fuller Company products to comply with all applicable federal, state and local laws and regulations.

MATERIAL SAFETY DATA SHEET

REVISION DATE: 04-06-2004

SUPERSEDES: 08-14-2001

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY INFORMATION

Specialty Construction Brands, Inc.
(formerly Foster Products Corporation
an H.B. Fuller Company Subsidiary)
315 South Hicks Road
Palatine, IL 60067
Phone: 847-358-9500

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

PRODUCT INFORMATION

PRODUCT IDENTIFIER: 801831PM
PRODUCT NUMBER: CP0700
PRODUCT NAME: CHILDERS CP-70
PRODUCT DESCRIPTION: Sealant

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for any additional exposure limit guidelines.

Chemical Name	CAS #	PERCENT	OSHA PEL
Calcium carbonate	471-34-1	50 - 70	TWA (Respirable dust) 5 MG/M3 TWA (Total dust) 15 MG/M3
Stoddard solvent	8052-41-3	1 - 5	TWA 100 ppm
Cobalt compounds		0.1 - 1	TWA (as Co) Fume 0.05 MG/M3
Xylene	1330-20-7	0.1 - 1	TWA 100 ppm STEL 150 ppm

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Combustible

HMIS RATING: HEALTH -- 0 FLAMMABILITY -- 2 REACTIVITY -- 0

MATERIAL SAFETY DATA SHEET

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

POTENTIAL HEALTH EFFECTS BY ROUTE OF ENTRY

EYE: Can cause minor irritation, tearing and reddening.

SKIN: Can cause minor skin irritation, defatting, and dermatitis.

INHALATION: Can cause minor respiratory irritation. Inhalation of dusts produced during cutting, grinding or sanding of this product may cause irritation of the respiratory tract.

Other possible symptoms include coughing or wheezing.

Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination.

INGESTION: Ingestion is not an anticipated route of exposure. No hazard in normal industrial use.

LONG-TERM (CHRONIC) HEALTH EFFECTS

REPRODUCTIVE: Contains a substance that is a probable reproductive hazard based on human studies.

TARGET ORGAN(S): Kidneys Central nervous system Blood Heart Lungs Liver

REGULATED CARCINOGEN STATUS:

Unless noted below, this product does not contain regulated levels of NTP, IARC, ACGIH, or OSHA listed carcinogens.

Cobalt compounds

EXISTING HEALTH CONDITIONS AFFECTED BY EXPOSURE: Kidney disease, Blood disorders (like anemia); Lung disease; Liver disease

SECTION 4: FIRST AID MEASURES

IF IN EYES: Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.

IF ON SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

IF VAPORS INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: 62C; 144F

AUTOIGNITION TEMPERATURE: Not established

LOWER EXPLOSIVE LIMIT (% in air): Not established

UPPER EXPLOSIVE LIMIT (% in air): Not established

EXTINGUISHING MEDIA: Use water spray, foam, dry chemical or carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors are heavier than air and can travel to a source of ignition and flash back.

SPECIAL FIRE FIGHTING INSTRUCTIONS: Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, Carbon monoxide Chlorine containing gases
Nitrogen containing gases

MATERIAL SAFETY DATA SHEET

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION: No adverse health effects expected from the clean-up of spilled material. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Evaporation of volatile substances can lead to the displacement of air creating an environment that can cause asphyxiation.

CLEAN-UP: Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.
Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: No special handling instructions due to toxicity.
Keep away from heat, sparks and flame.
Wash thoroughly after handling.
Keep container closed.
Emptied container retains vapor and product residue.
Observe all labeled precautions until container is cleaned.
Drums of this material should be grounded when pouring.
DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.

Storage: Store in a cool, dry, ventilated location. Keep away from heat and flame. Keep container closed.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION: Wear safety glasses when handling this product.

SKIN PROTECTION: Avoid skin contact by wearing chemically resistant gloves.

GLOVES: Not normally required. Use nitrile gloves if conditions warrant.

RESPIRATORY PROTECTION: Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.
Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

VENTILATION: Use local exhaust ventilation or other engineering controls to minimize exposures.

EXPOSURE LIMITS:

Chemical Name	ACGIH EXPOSURE LIMITS	AIHA WEEL
Calcium carbonate	TWA 10 MG/M3	Not established
Stoddard solvent	TWA 100 ppm	Not established
Cobalt compounds	TWA (as Co) Inorganic 0.02 MG/M3	Not established

MATERIAL SAFETY DATA SHEET

Xylene	TWA 100 ppm STEL 150 ppm	Not established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	Gray
ODOR:	Solvent
ODOR THRESHOLD:	Not established
WEIGHT PER GALLON (lbs.):	14.2
SPECIFIC GRAVITY:	1.7
SOLIDS (% by weight):	96.0
pH:	Not established
BOILING POINT (deg. C):	Not established
FREEZING/MELTING POINT (deg. C):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
EVAPORATION RATE:	Not established
OCTANOL/WATER COEFFICIENT:	Not established

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Strong oxidizing agents
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide Chlorine containing gases Nitrogen containing gases

SECTION 11: TOXICOLOGICAL INFORMATION

CHEMICAL NAME	LD50/LC50
Calcium carbonate	Oral LD50 Rat = 6450 mg/kg
Stoddard solvent	Not established
Cobalt compounds	Not established
Xylene	Oral LD50 Rat = 4300 mg/kg Inhalation LC50 Rat = 5000 ppm/4H Dermal LD50 Rat = 1700 mg/kg

TOXICOLOGY SUMMARY: No additional health information available.

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available

54 g VOC/liter of material, less water and exempt solvents
(VOC theoretically determined using EPA Publication 450/3-84-019)

MATERIAL SAFETY DATA SHEET

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Dispose of in an approved landfill. Consult your state, local or provincial authorities and your local waste vendor for more restrictive requirements.

LAND DISPOSAL RESTRICTIONS: Xylenes (o-, m-, p- isomers)

SECTION 14: TRANSPORTATION INFORMATION

Consult Bill of Lading for transportation information.

DOT: NOT REGULATED

IATA: NOT REGULATED

SECTION 15: REGULATORY INFORMATION

INVENTORY STATUS

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: This product is in compliance with the Canadian Domestic Substance List requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at 651-236-5858 (USA) or 450-655-1306 x227 (Canada) to request an export review.

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 72. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
Cobalt compounds		0.1 - 1
Xylene (mixed isomers)	1330-20-7	0.1 - 1

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System.

B3

D2B D2A

STATE REPORTING

This MSDS is not prepared for distribution in California.

SECTION 16: ADDITIONAL INFORMATION

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

MATERIAL SAFETY DATA SHEET

Prepared by: The Global Regulatory Department
Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to Specialty Construction Brands, Inc. from its suppliers, and because Specialty Construction Brands, Inc. has no control over the conditions of handling and use, Specialty Construction Brands, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and Specialty Construction Brands, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of Specialty Construction Brands, Inc. products to comply with all applicable federal, state and local laws and regulations.

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D2B D2A D1A

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List		CAS	Percent
Quartz	(Carcinogen)	14808-60-7	10 - 30
Titanium dioxide	(Carcinogen)	13463-67-7	0.1 - 1
Cumene	(Carcinogen)	98-82-8	0.1 - 1
Naphthalene	(Carcinogen)	91-20-3	0.1 - 1
ethylbenzene	(Carcinogen)	100-41-4	0.1 - 1
Benzene	(Carcinogen)	71-43-2	0.001 - 0.01
Toluene	(Developmental toxin)	108-88-3	1 - 5
Benzene	(Developmental toxin)	71-43-2	0.001 - 0.01
Benzene, methyl-	(Female reproductive toxin)	108-88-3	1 - 5
Benzene	(Male reproductive toxin)	71-43-2	0.001 - 0.01

Substances of Very High Concern (SVHC) Content:

Unless listed below, this product does not contain SVHC's.

SECTION 16: OTHER INFORMATION

SDS VERSION DATE: 12-19-2014

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 2 FLAMMABILITY -- 2 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

Print Date: 05-06-2015

CHILDERS CP-76
801832PM**SAFETY DATA SHEET****SECTION 13: DISPOSAL CONSIDERATIONS**

This product meets the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. It is ignitable waste class D001. Disposal via incineration is recommended. Consult your state, local, or provincial authorities for more restrictive requirements.

LAND DISPOSAL RESTRICTIONS: Toluene Naphthalene ethylbenzene

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

US DOT: NOT REGULATED

IATA: NOT REGULATED

SECTION 15: REGULATORY INFORMATION**INVENTORY STATUS**

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: The components of this product are included on the DSL or are exempt from DSL requirements.

EUROPEAN REACH: As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.

AUSTRALIA AICS: This product is in compliance with the Australian Inventory of Chemical Substances requirements.

KOREAN TCCL: This product is in compliance with the Korean Existing Chemicals List requirements.

PHILIPPINES: This product is in compliance with the Philippine Inventory of Chemicals and Chemical Substances requirements.

CHINA IECSC INVENTORY: This product is in compliance with the Inventory of Existing Chemical Substances in China (IECSC) requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING**EPA SARA Title III Section 313**

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
Toluene	108-88-3	1 - 5
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Cumene	98-82-8	0.1 - 1
Naphthalene	91-20-3	0.1 - 1
ethylbenzene	100-41-4	0.1 - 1

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System.

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	INHALATION LC50-4H RAT 18.00 G/M3 DERMAL LD50 RABBIT > 3,160.00 MG/KG
Calcium carbonate	ORAL LD50 RAT 6,450 MG/KG

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause skin irritation.

Serious eye damage / irritation: Can cause moderate irritation, tearing and reddening.

Respiratory / skin sensitization: May cause an allergic skin reaction.

Germ cell mutagenicity: May cause genetic defects.

Carcinogenicity: Contains a material that may cause cancer.

Reproductive toxicity: Contains a substance that is a possible reproductive hazard based on animal studies.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity-repeated exposure: Causes damage to organs through prolonged or repeated exposure.

Target organs potentially affected by exposure: Kidneys Central nervous system Lungs Reproductive system Liver Blood

Aspiration hazard: May be fatal if swallowed and enters airways.

Medical Conditions Aggravated by Exposure: Kidney disease, Lung disease, Liver disease, Blood disorders (like anemia)

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW:	No ecological information available for this product.
MOBILITY:	No data available.
PERSISTENCE:	No data available.
BIOACCUMULATION:	No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
Toluene	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 15.22 - 19.05 mg/L [flow-through] (1 day old); 96 Hr LC50 Pimephales promelas: 12.6 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 5.89 - 7.81 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 14.1 - 17.16 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 5.8 mg/L [semi-static]; 96 Hr LC50 Lepomis macrochirus: 11.0 - 15.0 mg/L [static]; 96 Hr LC50 Oryzias latipes: 54 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 28.2 mg/L [semi-static]; 96 Hr LC50 Poecilia reticulata: 50.87 - 70.34 mg/L [static] Acute Toxicity (Daphnia): 48 Hr EC50 Daphnia magna: 5.46 - 9.83 mg/L [Static]; 48 Hr EC50 Daphnia magna: 11.5 mg/L Acute Toxicity (Algae): 96 Hr EC50 Pseudokirchneriella subcapitata: >433 mg/L; 72 Hr EC50 Pseudokirchneriella subcapitata: 12.5 mg/L [static]
Aromatic petroleum distillate	Acute Toxicity (Fish): 96 Hr LC50 Oncorhynchus mykiss: 9.22 mg/L Acute Toxicity (Daphnia): 48 Hr EC50 Daphnia magna: 6.14 mg/L Acute Toxicity (Algae): Not established
Trimethyl benzene	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 7.72 mg/L [flow-through] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Trimethylbenzene, 1,2,4-	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 7.19 - 8.28 mg/L [flow-through] Acute Toxicity (Daphnia): 48 Hr EC50 Daphnia magna: 6.14 mg/L Acute Toxicity (Algae): Not established

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handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with organic vapor cartridge. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Semi-solid
COLOR:	White
ODOR:	Solvent
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	40C; 104F Pensky-Martens
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	10.50
SPECIFIC GRAVITY:	1.200
SOLUBILITY:	Not established
OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	71.7
VOC, weight percent	28.30
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	356g/liter of material

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Strong oxidizing agents
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide

SECTION 11: TOXICOLOGICAL INFORMATION

Component Toxicity / Toxicology Data:

COMPONENT NAME	LD50/LC50
Crystalline silica	ORAL LD50 RAT 500 MG/KG
Toluene	ORAL LD50 RAT 636 MG/KG INHALATION LC50-4H RAT 12.50 MG/L DERMAL LD50 RABBIT 8,390.00 MG/KG
Aromatic petroleum distillate	INHALATION LC50-4H RAT 3,400.00 PPM DERMAL LD50 RABBIT > 2,000.00 MG/KG
Trimethylbenzene, 1,2,4-	ORAL LD50 RAT 3,400 MG/KG

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SAFETY DATA SHEET

DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.

Storage: Store in a cool, dry, ventilated location. Keep away from heat and flame. Keep container closed.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Stoddard solvent	Note P	100 ppm TWA	500 ppm TWA; 2900 mg/m ³ TWA
Crystalline silica	* (see below)	0.025 mg/m ³ TWA (respirable fraction)	((250)/(%SiO ₂ + 5) mppcf TWA (respirable)); ((10)/(%SiO ₂ + 2) mg/m ³ TWA (respirable)); ((30)/(%SiO ₂ + 2) mg/m ³ TWA (total dust))
Mica	* (see below)	3 mg/m ³ TWA (respirable fraction)	Not established
Toluene		20 ppm TWA	200 ppm TWA 300 ppm Ceiling
Trimethyl benzene		25 ppm TWA	Not established
Calcium carbonate	* (see below)	No data available.	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Titanium dioxide	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)
Cumene		50 ppm TWA	50 ppm TWA; 245 mg/m ³ TWA Skin absorption may potentially contribute to the overall exposure to this material.
Naphthalene		10 ppm TWA Skin absorption may potentially contribute to the overall exposure to this material.	10 ppm TWA; 50 mg/m ³ TWA
Ethylbenzene		20 ppm TWA	100 ppm TWA; 435 mg/m ³ TWA

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

VENTILATION:

Use local exhaust ventilation or other engineering controls to minimize exposures.

EYE PROTECTION:

Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

SKIN PROTECTION:

Avoid skin contact by wearing chemically resistant gloves. Skin absorption may potentially contribute to the overall exposure to this material. Appropriate measures should be taken to prevent absorption so that the TLV is not invalidated.

GLOVES:

Nitrile

RESPIRATORY PROTECTION:

Respiratory protection may be required to avoid overexposure when

Print Date: 05-06-2015

CHILDERS CP-76
801832PM**SAFETY DATA SHEET**

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

IF ON SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention immediately. Drink two glasses of water or milk to dilute. Do not give anything by mouth to an unconscious person.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water spray, foam, dry chemical or carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors are heavier than air and can travel to a source of ignition and flash back.

SPECIAL FIRE FIGHTING INSTRUCTIONS: Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, Carbon monoxide

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Evaporation of volatile substances can lead to the displacement of air creating an environment that can cause asphyxiation.

METHODS FOR CLEAN-UP: Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.

Avoid creating dusts. Cover material with absorbent and moisten and collect for disposal.

Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Avoid breathing material.
Keep away from heat, sparks and flame.
Wash thoroughly after handling.
Keep container closed.
Emptied container retains vapor and product residue.
Observe all labeled precautions until container is cleaned.
Drums of this material should be grounded when pouring.

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with plenty of soap and water. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Call a POISON CENTER or doctor/physician if you feel unwell. Do NOT induce vomiting. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Wash contaminated clothing before reuse. In case of fire: Use water spray, foam, dry chemical or carbon dioxide to extinguish.

Storage: Keep container tightly closed. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Feldspar group minerals	68476-25-5	30 - 50	Eye Irrit. 2; H319 STOT SE 3; H335	
Crystalline silica	14808-60-7	10 - 30	Carc. 1A; H350 STOT RE 1; H372	* (see below)
Rosin, pentaerythritol ester	8050-26-8	5 - 10	Aquatic Chronic 4; H413 Eye Irrit. 2A; H319 Skin Sens. 1; H317	
Polybutene	9003-29-6	1 - 5	Aquatic Chronic 4; H413	
Toluene	108-88-3	1 - 5	Asp. Tox. 1; H304 Acute Tox. 4; H302 Flam. Liq. 2; H225 Repr. 2; H361 Skin Irrit. 2; H315 STOT RE 2; H373 STOT SE 3; H336	
Aromatic petroleum distillate	64742-95-6	1 - 5	Asp. Tox. 1; H304 Carc. 1B; H350 Muta. 1B; H340	
Trimethyl benzene	25551-13-7	1 - 5	Acute Tox. 4; H312 Acute Tox. 4; H302 Eye Irrit. 2; H319 Skin Irrit. 2; H315	
Trimethylbenzene, 1,2,4-	95-63-6	1 - 5	Aquatic Chronic 2; H411 Acute Tox. 4; H332 Eye Irrit. 2; H319 Flam. Liq. 3; H226 Skin Irrit. 2; H315 STOT SE 3; H335	
Titanium dioxide	13463-67-7	0.1 - 1	Carc. 2; H351	* (see below)
Tri(nonylphenol)phosphite	26523-78-4	0.1 - 1	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Skin Sens. 1; H317	
Naphthalene	91-20-3	0.1 - 1	Aquatic Chronic 1; H410 Acute Tox. 4; H302 Acute Tox. 2; H330 Carc. 2; H351	

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

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REVISION DATE: 12-19-2014

SUPERSEDES: 10-22-2014

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER**PRODUCT INFORMATION**

PRODUCT: CHILDERS CP-76
PRODUCT DESCRIPTION: Sealant
INTENDED USE: Sealant
PRODUCT IDENTIFIER: 801832PM

COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
1105 S. Frontenac Street
Aurora, IL 60504
Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

GHS Hazard
Symbols:



GHS Signal Word: Danger

GHS Classification: Skin Sensitisation Category 1; Germ Cell Mutagenicity Category 1B; Carcinogenicity Category 1B; Specific Target Organ Systemic Toxicity (STOT) - Repeated Exposure Category 1; Aspiration Hazard Category 1; Serious Eye Damage/Eye Irritation Category 2; Reproductive Toxicity Category 2; Flammable Liquid Category 3; Hazardous to the aquatic environment - Acute Category 3; Hazardous to the aquatic environment - Chronic Category 3; Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3

GHS Hazard Phrases: Flammable liquid and vapour.; May be fatal if swallowed and enters airways.; May cause an allergic skin reaction.; Causes serious eye irritation.; May cause respiratory irritation.; May cause genetic defects.; May cause cancer.; Suspected of damaging fertility or the unborn child.; Causes damage to organs through prolonged or repeated exposure.; Harmful to aquatic life.; Harmful to aquatic life with long lasting effects.

GHS Precautions:

Safety Precautions: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures: IF SWALLOWED: Immediately call a POISON CENTER or doctor. IF ON SKIN: Wash

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REVISION DATE: 03-24-2015

SUPERSEDES: 10-22-2014

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER

PRODUCT INFORMATION

PRODUCT: CHILDERS CP-82
 PRODUCT DESCRIPTION: Adhesive
 INTENDED USE: Adhesive
 PRODUCT IDENTIFIER: 801837PM

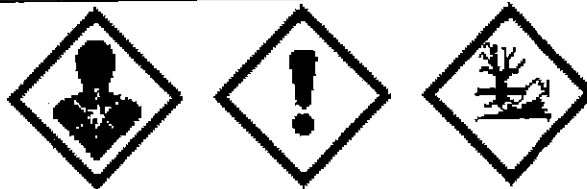
COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
 1105 S. Frontenac Street
 Aurora, IL 60504
 Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
 Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

GHS Hazard
Symbols:



GHS Signal Word:
GHS Classification:

Warning
 Skin Sensitisation Category 1; Hazardous to the aquatic environment - Acute Category 1;
 Carcinogenicity Category 2

GHS Hazard
Phrases:

May cause an allergic skin reaction.; Suspected of causing cancer.; Very toxic to aquatic life.

GHS Precautions:

Safety Precautions:

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapours/spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Collect spillage.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Methylene chloride	75-09-2	70 - 100	Carc. 2; H351	
Chlorinated paraffin	63449-39-8	5 - 10	Aquatic Acute 1; H400	

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Chlorinated paraffin	63449-39-8	1 - 5	Aquatic Acute 1; H400	
P-t-butylphenol/formaldehyde poly Mg complex	68037-42-3	1 - 5	Skin Sens. 1; H317	
Titanium dioxide	13463-67-7	1 - 5	Carc. 2; H351	* (see below)
Wood rosin	8050-09-7	0.1 - 1	Skin Sens. 1; H317	
Crystalline silica	14808-60-7	0.1 - 1	Carc. 1A; H350 STOT RE 1; H372	* (see below)

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

IF ON SKIN: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Restore breathing, if necessary. Keep warm and quiet. Call a physician.

IF SWALLOWED: Severely irritating. Do not induce vomiting. Seek medical attention immediately. Drink 2 glasses of water or milk to dilute. Do not give anything by mouth to an unconscious person. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:	Use water spray, foam, dry chemical or carbon dioxide.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	There is a possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.
SPECIAL FIRE FIGHTING INSTRUCTIONS:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide, Carbon monoxide Chlorine containing gases Nitrogen containing gases

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION:	Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred.
METHODS FOR CLEAN-UP:	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

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SECTION 7: HANDLING AND STORAGE

Handling: Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Avoid breathing vapors.
 Use only with adequate ventilation.
 Avoid contact with eyes, skin and clothing.
 Wash thoroughly after handling.
 Keep container closed.
 Emptied container retains vapor and product residue.
 Observe all labeled safeguards until container is cleaned.
DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.
 Aluminum is not an acceptable material of construction for pumps, mixers, fittings or storage for this product.
 This product contains an ingredient that may release formaldehyde at heated cure temperatures.

Storage: Store in a cool, dry place.
 Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Methylene chloride		50 ppm TWA	25 ppm TWA 125 ppm STEL (see 29 CFR 1910.1052)
Titanium dioxide	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)
Crystalline silica	* (see below)	0.025 mg/m ³ TWA (respirable fraction)	((250)/(%SiO ₂ + 5) mppcf TWA (respirable)); ((10)/(%SiO ₂ + 2) mg/m ³ TWA (respirable)); ((30)/(%SiO ₂ + 2) mg/m ³ TWA (total dust))

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

VENTILATION: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

EYE PROTECTION: Wear safety glasses with side shields when handling this product.
 Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

SKIN PROTECTION: Avoid skin contact by wearing chemically resistant gloves and long sleeved shirt. An apron may be appropriate if splashing can occur.

GLOVES: Nitrile

RESPIRATORY PROTECTION: Respiratory protection will be required when ventilation or other engineering controls can not reduce the exposure to acceptable levels.
 Use supplied-air respiratory equipment as required.
 Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

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PHYSICAL STATE:	Liquid
COLOR:	Tan
ODOR:	Solvent
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	Non flammable
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	11.10
SPECIFIC GRAVITY:	1.330
SOLUBILITY:	Not established
OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	30.0
VOC, weight percent	0.05
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	2.2g/liter of material

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Aluminum alloys
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Chlorine containing gases Carbon monoxide, carbon dioxide Nitrogen containing gases

SECTION 11: TOXICOLOGICAL INFORMATION**Component Toxicity / Toxicology Data:**

COMPONENT NAME	LD50/LC50
Methylene chloride	ORAL LD50 RAT > 2,000 MG/KG
Titanium dioxide	ORAL LD50 RAT > 10,000 MG/KG

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Serious eye damage / irritation :Can cause moderate irritation, tearing and reddening.

Respiratory / skin sensitization: May cause an allergic skin reaction.

Germ cell mutagenicity: No data available.

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Carcinogenicity: Contains a material that may cause cancer.

Reproductive toxicity: No data available.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: No data available.

Specific target organ toxicity-repeated exposure: No data available.

Target organs potentially affected by exposure: Heart Liver Central nervous system Lungs Skin

Aspiration hazard: No data available.

Medical Conditions Aggravated by Exposure: Liver disease, Overexposure to methylene chloride may cause cardiac effects (including the elevation of carboxyhemoglobin levels) which may be significant in smokers or persons with anemia or heart disease and those exposed to carbon monoxide, Lung disease, Skin disease including eczema and sensitization

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available for this product.
 MOBILITY: No data available.
 PERSISTENCE: No data available.
 BIOACCUMULATION: No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
Methylene chloride	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 140.8 - 277.8 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 262 - 855 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 193 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 193 mg/L [flow-through] Acute Toxicity (Daphnia): 48 Hr EC50 Daphnia magna: 1532 - 1847 mg/L [Static]; 48 Hr EC50 Daphnia magna: 190 mg/L Acute Toxicity (Algae): 96 Hr EC50 Pseudokirchneriella subcapitata: >500 mg/L; 72 Hr EC50 Pseudokirchneriella subcapitata: >500 mg/L
Chlorinated paraffin	Acute Toxicity (Fish): 96 Hr LC50 Lepomis macrochirus: >300 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: >0.0109 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 94.5 - 271 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: >0.1 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: >100 mg/L [static] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Chlorinated paraffin	Acute Toxicity (Fish): 96 Hr LC50 Lepomis macrochirus: >300 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: >0.0109 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 94.5 - 271 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: >0.1 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: >100 mg/L [static] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established

SECTION 13: DISPOSAL CONSIDERATIONS

This product contains greater than 10% chlorinated solvent. Spent chlorinated solvents are considered hazardous waste; however, as a component of a mixture, chlorinated solvents do not meet the RCRA definition of hazardous waste under 40 CFR 261. Consult state, local, or provincial authorities for more restrictive requirements.

LAND DISPOSAL RESTRICTIONS: Methylene chloride

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

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US DOT:	UN1593, DICHLOROMETHANE MIXTURE, 6.1, III. IF 1395 POUNDS OR MORE: UN1593, DICHLOROMETHANE MIXTURE, 6.1, UN1593, III, RQ. IF 119 GALLONS OR MORE OR IF SHIPPED BY VESSEL ADD: MARINE POLLUTANT (CHLORINATED PARAFFIN).
IATA:	UN1593, DICHLOROMETHANE MIXTURE, 6.1, III. IN CONTAINERS 1395 POUNDS OR MORE: UN1593, DICHLOROMETHANE MIXTURE, 6.1, III, RQ
IMDG:	DICHLOROMETHANE MIXTURE

SECTION 15: REGULATORY INFORMATION

INVENTORY STATUS

U.S. EPA TSCA:	This product is in compliance with the Toxic Substances Control Act's Inventory requirements.
CANADIAN CEPA DSL:	The components of this product are included on the DSL or are exempt from DSL requirements.
EUROPEAN REACH:	As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.
AUSTRALIA AICS:	This product contains a component that is not on the Australian Inventory (AICS).
JAPAN ENCS:	This product is in compliance with the Japanese Existing and New Chemical Substances requirements.
CHINA IECSC INVENTORY:	This product is in compliance with the Inventory of Existing Chemical Substances in China (IECSC) requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
Dichloromethane	75-09-2	70 - 100
Polychlorinated alkanes	63449-39-8	5 - 10

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List	CAS	Percent
Dichloromethane (Carcinogen)	75-09-2	70 - 100
Titanium dioxide (Carcinogen)	13463-67-7	1 - 5
Quartz (Carcinogen)	14808-60-7	0.1 - 1
ethylbenzene (Carcinogen)	100-41-4	0.01 - 0.1
Formaldehyde (Carcinogen)	50-00-0	0.001 - 0.01
Toluene (Developmental toxin)	108-88-3	<10 ppm
Benzene, methyl- (Female reproductive toxin)	108-88-3	<10 ppm



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Substances of Very High Concern (SVHC) Content:
Unless listed below, this product does not contain SVHC's.

SECTION 16: OTHER INFORMATION

SDS VERSION DATE: 03-24-2015

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 2 FLAMMABILITY -- 0 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department
Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

MATERIAL SAFETY DATA SHEET

Effective Date: March 1, 2007

SECTION I PRODUCT IDENTIFICATION & EMERGENCY INFORMATION

PRODUCT NAME(S) OR NUMBER(S)

DAXCEL® FOAMASTIK® 161-D Adhesive

EMERGENCY PHONE NUMBERS

Chemtrec® 800-424-9300 (Inside US)
703-527-3887 (Outside US)
Supplier 412-922-2536

MANUFACTURER/SUPPLIER/NAME/ADDRESS

Dacar Products Company Inc.
1019 McCartney Street
Pittsburgh, PA 15220

IMO & IATA HAZARD DESIGNATION

PROPER NAME / CLASS / NUMBER / PKG GROUP / RQ
Adhesive, 3.3, UN 1133, III (containing
less than 5% Naphtha, Petroleum)

CHEMICAL FAMILY

Oil-based Adhesive

FORMULA

See Section II

DOT DOMESTIC US GROUND TRANSPORT HAZARD DESIGNATION

Unregulated

HAZARD RATINGS

	NPCA-HMIS	KEYS	
Health	0	4 = Severe	1 = Slight
Flammability	2	3 = Serious	0 = Minimal
Reactivity	0	2 = Moderate	N = None (see Section VIII)
Personal Protection	N		

SECTION II CHEMICAL COMPONENTS

CHEMICAL NAME	TLV	CAS NOS.	PCT.
Calcium Carbonate	N/A	471-34-1	60-70
Magnesium Carbonate	N/A	546-93-0	4-10
Linseed Oil	N/A	8001-26-1	4-10
Soybean Oil	N/A	68152-81-8	4-10
Petroleum Naphtha	500 ppm	8742-88-7 /	4-10
Mixture		64742-47-8	

(N/A = Not Available)

SECTION III PHYSICAL DATA

Boiling Point (°C / °F)	> 127 / 261	Solubility in Water	Negligible
Vapor Pressure (@ 20°C)	N/A	Specific Gravity	1.8
Vapor Density (air = 1)	N/A	Evaporation Rate	
Volatile Organic Content (g / l)	< 80	(Ethyl ether = 1)	N/A

APPEARANCE

Heavy Mastic, Light Gray

ODOR

Mild Odor

MATERIAL IS A

Paste

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Closed Cup)

40°C / 104°F (Pensky Martin)

LEL

1.4*

UEL

8.1*

IGNITION TEMPERATURE

216°C / 421°F*

EXTINGUISHING MEDIA

Regular Foam or Carbon Dioxide

*Solvent Only

SPECIAL FIRE FIGHTING PROCEDURES

None

UNUSUAL FIRE AND EXPLOSION HAZARDS

None

SECTION V PHYSIOLOGICAL EFFECTS

EFFECTS OF EXPOSURE

Eyes: May cause irritation

Skin: May cause irritation and contact dermatitis in sensitive persons

Inhalation: May cause lightheadedness

Swallowing: May cause irritation, nausea, vomiting or diarrhea

EMERGENCY AND FIRST AID PROCEDURES

Eyes: Flush with large amounts of water; get medical attention

Skin: Wash thoroughly with soap and water

Inhalation: Remove to fresh air

Swallowing: Drink two glasses of water and induce vomiting; get medical attention

SECTION VI REACTIVITY DATA

MATERIALS IS

Stable

CONDITIONS TO AVOID

Heat, flame and fire

MATERIALS TO AVOID

None

DECOMPOSITION PRODUCTS

Carbon dioxide/monoxide

HAZARDOUS POLYMERIZATION

Will Not Occur

CONDITIONS TO AVOID

Avoid open flame or sparks

SECTION VII SPILL OR LEAK PROCEDURES

SMALL SPILL

Absorb residue on floor absorbent or similar material; dispose of absorbent properly.

LARGE SPILL

Material may be shoveled into proper containers. Residue may be absorbed by clay, sand, floor absorbent or similar materials and shoveled into containers.

WASTE DISPOSAL METHOD

Dispose of in accordance with all Federal, State and Local laws and regulations.

SECTION VIII PROTECTIVE EQUIPMENT

Ventilation: Generally none. For prolonged exposure in small, closed space, general ventilation.

Respiratory: None.

For Eyes: Generally none; product will not splash easily. If needed, use any type splash goggles.

For Skin: Generally none; for prolonged skin contact, wear natural rubber gloves.

SECTION IX SPECIAL PRECAUTIONS

Container may contain liquid or vapor residue. Do not cut container with torch. Obey all precautions until container disposed of. Do not reuse container. Dispose of container in accordance with Federal, State and Local regulations.

CHANGES since last version: None.

GHS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		 ADHESIVE Class 3 UN 1133 P.G.: III

SECTION I: IDENTIFICATION

Use: This product complements bituminous waterproofing membranes and is used as jointing mastics, caulking materials and joint fillers. It is compatible with bituminous materials and ensures good waterproofing.

Manufacturer:
Soprema Canada
1675 Haggerty Street
Drummondville (Quebec) J2C 5P7
CANADA
Tel.: 819 478-8163

Distributors:
Soprema Inc.
44955 Yale Road West
Chilliwack (BC) V2R 4H3
UNITED STATES
Tel.: 604 793-7100

Soprema USA
310 Quadral Drive
Wadsworth (Ohio) 44281
UNITED STATES
Tel.: 1 800 356-3521

Soprema USA
12251 Seaway Road
Gulfport (Mississippi) 39503
UNITED STATES
Tel.: 228 701-1900

In case of emergency:

SOPREMA (8:00am to 5:00pm): 1 800 567-1492

CANUTEC (Canada) (24h.): 613 996-6666

CHEMTREC (USA) (24h.): 1 800 424-9300

SECTION II: HAZARD(S) IDENTIFICATION

DANGER

Flammable liquid and vapour. May be fatal if swallowed and enters airways. Harmful if swallowed. May cause respiratory irritation or drowsiness or dizziness. Causes skin irritation. Causes eye irritation. Suspected of damaging fertility or the unborn child. May cause damage to the central nervous system (CNS) through prolonged or repeated exposure if inhaled.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames and hot surfaces. No smoking. Use explosion proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

Do not eat or drink when using this product. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves, eye protection and an organic vapour respirator. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. Dispose of container in accordance with local, regional and national regulations.

SECTION III: COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Asphalt	8052-42-4	15-40	0.5 mg/m ³	Not established
Xylene	1330-20-7	10-30	100 ppm	150 ppm
Oxidized asphalt	64742-93-4	5-10	0.5 mg/m ³	Not established

Effects of Short-Term (Acute) Exposure

INHALATION

Xylene: Xylene (mixed isomers) readily forms a vapour at room temperature. The main effect of inhaling xylene vapour is depression of the CNS, with symptoms such as headache, dizziness, nausea and vomiting. Volunteers have tolerated 100 ppm, but higher concentrations become objectionable. Irritation of the nose and throat can occur from exposure to approximately 200 ppm xylene (mixed isomers; unspecified composition) for 3-5 minutes or to 50 ppm m-xylene for 2 hours. Exposures estimated as 700 ppm (xylene composition not specified) have caused nausea and vomiting. An extremely high concentration (approximately 10 000 ppm, xylene composition not specified) has caused incoordination, loss of consciousness, respiratory failure and death. In some cases, a potentially fatal accumulation of fluid in the lungs (pulmonary oedema) may result. The symptoms of pulmonary oedema include coughing, chest pain and shortness of breath and be delayed for up to 24 or 48 hours after exposure. These symptoms are aggravated by physical exertion. However, these effects are rarely seen since xylenes are irritating, and identifiable by odour at much lower concentrations. Xylene (mixed isomers) can accumulate in a confined space increasing the risk of toxicity. The only reported death resulted from exposure to approximately 10 000 ppm xylene (mixed isomers; unspecified composition) for several hours while painting in a confined space. The worker who died had severe lung congestion and pulmonary oedema. Two other workers who survived the exposure, both had reversible liver damage and one had reversible kidney damage. (1)

Asphalt: Exposure is not expected by this route of entry under normal product use.

SKIN CONTACT

Xylene: Xylene (mixed isomers) liquid is a moderate skin irritant based on animal information. Studies with xylene isomers have shown irritation, redness and a burning sensation can result from contact. These effects are reversible shortly (usually within 1 hour) after the contact stops. Repeated or prolonged exposure to xylene can defat the skin resulting in dermatitis (red, dry, itchy skin). Xylene (mixed isomers) liquid or vapour can be absorbed through the skin, but not as readily as when inhaled or ingested. (1)

Asphalt: Asphalt may cause irritation to the skin. (2)

EYE CONTACT

Xylene: Xylene (mixed isomers) liquid is a very mild irritant, based on animal information. (1)

Asphalt: Asphalt, in this form is not expected to cause eye irritation. (2)

INGESTION

It is unlikely that toxic amounts of this product would be ingested with normal handling and use.

Xylene: Xylene (mixed isomers) is not considered toxic if ingested based on animal information. Ingestion of large amounts is likely to cause CNS effects such as dizziness, nausea and vomiting. (1)

Asphalt: No information available.

SKIN CONTACT

Xylene: Prolonged contact with xylene (mixed isomers) is expected to cause dermatitis (dry, red skin) because of its defatting action. (1)

Asphalt: Repeated or prolonged contact may cause irritation. (2)

SKIN SENSITIZATION

Xylene: Xylene (mixed isomers) is not known to be an occupational skin sensitizer. (1)

INHALATION

Xylene: See effects described below.

Asphalt: Exposure is not expected by this route of entry under normal product use.

NERVOUS SYSTEM EFFECTS

Xylene: Long-term xylene (mixed isomers) exposure may cause harmful effects on the nervous system, but there is not enough information available to draw firm conclusions. Symptoms such as headaches, irritability, depression, insomnia, agitation, extreme tiredness, tremors, and impaired concentration and short-term memory have been reported following long-term occupational exposure to xylene and other solvents. This condition is often referred to as "organic solvent syndrome". Unfortunately, there is very little information available that isolates xylenes from other solvent exposures in the examination of these long-term neurological effects. Other study deficiencies include inadequate reporting on the duration of exposure and the exposure levels, and poor matching of controls. (1)

BLOOD/BLOOD FORMING SYSTEM

Xylene: Historical reports sometimes associate xylene exposure with certain blood effects, including leukemia, which are now known to be caused by benzene. Xylene that does not contain benzene as a contaminant is not known to cause these effects. (1)

LIVER AND KIDNEY EFFECTS

Xylene: A number of case reports and occupational studies have suggested that liver and kidney damage may result from long-term occupational exposure to xylene. However, it is not possible to attribute these effects directly to xylene exposure because generally there was exposure to other chemicals at the same time, particularly other solvents, and there was no information provided on the exposure levels or duration of exposure. (1)

Asphalt: No information available.

HEARING

Xylene: There is evidence that long-term exposure to solvent mixtures including xylenes may cause hearing loss. The simultaneous exposure to noise and solvents appears to enhance this effect. However, the limited information available does not allow a conclusion to be drawn specifically for xylene (mixed isomers). (1)

CARCINOGENICITY

Xylene: The International Agency for Research on Cancer (IARC) has determined that there is inadequate evidence for the carcinogenicity of xylene in humans. IARC has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3). The American Conference of Governmental Industrial Hygienists (ACGIH) has designated this chemical as not classifiable as a human carcinogen (A4). The US National Toxicology Program (NTP) has not listed this chemical in its report on carcinogens. (1)

Oxidized asphalt: In its 2013 monograph (Volume 103), IARC conducted a review of the potential carcinogenicity of bitumen (the European term for asphalt). One of its conclusions was "occupational exposures to oxidized bitumens and their emissions during roofing" are classified in IARC Group 2A, "probably carcinogenic to humans.". However, due to the product form, exposure to such component is unlikely under normal conditions of use.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Xylene: Xylene (mixed isomers) is considered fetotoxic in humans, based on observations of reduced foetal weight, delayed ossification and persistent behavioural effects in animal studies in the absence of

animal studies in the presence of maternal toxicity. (1)

REPRODUCTIVE TOXICITY

Xylene: The limited information located suggests that xylene (mixed isomers) does not cause reproductive toxicity. Xylenes have been shown to transfer into human breast milk. (1)

MUTAGENICITY

Xylene: Xylene (mixed isomers) is not known to be a mutagen. Negative results have been obtained in a few limited studies in humans. Negative results have been obtained in studies in live animals and in cultured mammalian cells and bacteria, which were carried out with pure isomers of xylene and with mixed isomers containing up to 36% ethylbenzene. (1)

TOXICOLOGICALLY SYNERGISTIC MATERIALS

Xylene: There have been several studies in humans and animals on the interaction of xylenes with drugs, alcohol and other solvents. Xylene has a high potential to interact with other compounds because it increases metabolic enzymes in the liver and decreases metabolic enzymes in the lungs. In general, exposure to related solvents, such as benzene, toluene and ethanol (alcohol) slows the rate of clearance of xylenes from the body, thus enhancing its toxic effects. In rats, exposure to xylene (mixed isomers; unspecified composition) in combination with the solvents trichloroethylene or chlorobenzene has had an additive effect in causing hearing loss, while exposure to xylene (mixed isomers) enhanced the hearing loss caused by n-hexane and decreased the toxicity of n-hexane on peripheral nerves. (1)

POTENTIAL FOR ACCUMULATION

Xylene: The three xylene isomers are readily absorbed by inhalation and ingestion and are widely distributed throughout the body. A small amount may be absorbed through the skin. Xylenes are largely broken down by the liver and most of the absorbed material is rapidly excreted in the urine as breakdown products. Small amounts are eliminated unchanged in the exhaled air. There is low potential for accumulation. (1)

SECTION IV: FIRST-AID MEASURES

If exposed or concerned: Get medical advice.

SKIN CONTACT

Wash with plenty of water. If skin irritation occurs: Get medical advice. Take off immediately all contaminated clothing and wash it before reuse.

EYE CONTACT

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.

INHALATION

Remove person to fresh air and keep comfortable for breathing. Call a poison center if you feel unwell.

SWALLOWING

Immediately call a poison center. Do NOT induce vomiting. Rinse mouth.

SECTION V: FIRE-FIGHTING MEASURES

FLAMMABILITY: Flammable Class 1C (NFPA)

EXPLOSION DATA: Sensitivity to mechanical impact: No
Sensitivity to static charge: Can accumulate static charge by flow.

FLASH POINT: 25°C (ASTM D-93)

AUTO-IGNITION TEMPERATURE: 527°C (xylene)

FLAMMABILITY LIMITS IN AIR: (% in volume) 1 – 7 (xylene)

FIRE AND EXPLOSION HAZARDS

This product and its vapours are easily ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. The product may ignite on contact with strong oxidizing agents. Do not cut, puncture or weld empty containers.

Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Toxic and/or irritating gases or fumes can emanate from empty containers when submitted to high temperatures: CO, CO₂, Aldehydes, ketone, acrolein, halogenated compound. During a fire, carbon monoxide, carbon dioxide, reactive hydrocarbons, low molecular weight aldehydes (e.g. acetaldehyde) and other irritating and toxic vapours, fumes and smoke may be generated.

FIRE FIGHTING INSTRUCTIONS

Isolate area. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Approach fire from upwind and fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from containers because of the high risk of explosion. Stop leak before attempting to put out the fire. If leak cannot be stopped, and if there is no risk to the surrounding area, let the fire burn itself out. Move containers from fire area if this can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

MEANS OF EXTINCTION

Anti-alcohol or universal foam, dry chemical powder, CO₂, sand. Use of water spray when fighting fire may be inefficient because of the low flash point of the product.

SECTION VI: ACCIDENTAL RELEASE MEASURES

RELEASE OR SPILL

Ventilate area. Wear appropriate protective equipment during cleanup. Eliminate all sources of ignition. Shut off source of leak if you can do it without risk. Contain the spill. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Sweep or shovel into containers with lids, use clean non-sparking tools to collect absorbed material. Cover and remove to appropriate well-ventilated area until disposal. Do not touch or walk through spilled material. Wash spill area with soap and water. Prevent entry into waterways, sewers, basements or confined areas. Dispose of the product according to the environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING

This product is flammable and toxic. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash thoroughly after handling. Before handling, it is very important that ventilation controls are operating and protective equipment requirements are being followed. People working with this product would be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Ground transfer containers to avoid static accumulation. Tightly reseal all partially used containers. Do not cut, puncture or weld containers.

STORAGE

Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. Keep storage areas clear of combustible materials. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment near storage area. Inspect all containers to make sure they are properly labelled.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

HANDS: Wear gloves made from polyvinyl alcohol (PVA) or viton.

RESPIRATORY: If the TLV is exceeded, if use is performed in a poorly ventilated confined area, use an approved respirator in accordance with standards.

YES: Wear chemical safety goggles in accordance with standards.

EYES: Eye bath and safety shower.

CONTROL OF VAPOURS: Local exhaust is needed to control vapour and dust level to below recommended limits.

PHYSICAL STATE:

ODOUR AND APPEARANCE: Black paste with strong solvent odour

ODOUR THRESHOLD:

VAPOUR DENSITY (air = 1):

EVAPORATION RATE (Butyl acetate = 1):

BOILING POINT (760 mm Hg):

FREEZING POINT:

SPECIFIC GRAVITY (H₂O = 1):

SOLUBILITY IN WATER (20°C):

VOLATILE ORGANIC COMPOUND (V.O.C.):

Paste

Not available

Heavier than air

0.7 (xylene)

Not available

Not available

1.15 kg/L

Insoluble

225 g/L

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.

CONDITIONS OF REACTIVITY: Avoid excessive heat

INCOMPATIBILITY: Bases, acids and strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: None identified.

HAZARDOUS POLYMERISATION: None

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

Xylene: (1)

LC₅₀ (male rat): 6 350 ppm (4-hour exposure) (unspecified isomers and ethylbenzene)

LD₅₀ (oral, rat): 3 523 mg/kg

Asphalt: Not available.

Effects of Short-Term (Acute) Exposure

EYE IRRITATION

Xylene: Xylene (mixed isomers) is a very mild eye irritant. (1)

Asphalt: No information available.

SKIN IRRITATION

Xylene: Xylene (mixed isomers) is a moderate skin irritant. (1)

Asphalt: No information available.

INHALATION

Xylene: The major effect of xylene inhalation is on the CNS. There is initial excitation followed by depression, drowsiness, incoordination, and unconsciousness at approximately 2 000 ppm. Death at higher concentrations is from respiratory failure due to CNS depression and/or accumulation of fluid in the lungs (pulmonary oedema). (1)

Asphalt:

No information available.

Effects of Long-Term (Chronic) Exposure

INHALATION

Xylene: Rats exposed to 0, 50 or 100 ppm m-xylene for 3 months (6 hours/day, 5 days/week) had significantly increased sensitivity to pain at 50 ppm and impaired rotarod performance at 100 ppm. Reversibility was not assessed. Male rats exposed to 0, 100 or 1 000 ppm m-xylene for 12 weeks (6 hours/day, 5 days/week) had a dose-related impairment of learning when tested in a maze. The impairment was still present 2 months after exposure ended. (1)

CARCINOGENICITY

Xylene: IARC has determined that there is inadequate evidence for carcinogenicity of xylene (mixed isomers) in animals. (1)

Asphalt: No information available.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Xylene: Xylene (mixed isomers) causes developmental toxicity (fetotoxic). Reduced foetal weight, delayed ossification and persistent behavioural effects have been observed in the absence of maternal toxicity. Other developmental effects have been observed in the presence of maternal toxicity. (1)

Asphalt: No information available.

Xylene: The limited information located suggests that xylene (mixed isomers) does not cause reproductive toxicity. (1)

Asphalt: No information available.

MUTAGENICITY

Xylene: Xylene (mixed isomers) is not known to be a mutagen. Negative results have been obtained in studies using live animals and in most studies with cultured mammalian cells and bacteria which were carried out with pure isomers of xylene and with mixed isomers containing up to 36% ethylbenzene. (1)

Asphalt: No information available.

SECTION XII: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS

Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Block off drains and ditches. Provincial and federal regulations may require that environmental and / or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

SECTION XIII: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

This product is listed as hazardous waste. Consult local, state, provincial or territory authorities to know disposal methods. Also listed as hazardous waste by the RCRA (USA); waste disposal as to follow EPA regulations. Do not dispose of waste with normal garbage or sewers systems.

SECTION XIV: TRANSPORT INFORMATION

CLASSIFICATION (TDG - DOT): Class 3

IDENTIFICATION NUMBER: UN 1133

SHIPPING NAME: Adhesive

PACKING GROUP: III

CONTAINERS ARE IN CONFORMITY WITH STANDARDS.

Classification based on Section V of this document

SECTION XV: REGULATORY INFORMATION

DSL: All constituents of this product are included on the Domestic Substances List (DSL - Canada).

TSCA: All constituents of this product are included on the Toxic Substances Control Act Inventory (TSCA - United States).

Prop. 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

GLOSSARY

ASTM:	American Society for Testing and Materials (United States)
CAS:	Chemical Abstract Services
CSA:	Canadian Standardization Association
DOT:	Department of Transportation (United States)
EPA:	Environmental Protection Agency (United States)
GHS	Globally Harmonized System
LD₅₀/LC₅₀:	Less high lethal dose and lethal concentration published
NIOSH:	National Institute for Occupational Safety and Health (United States)
RCRA:	Resource Conservation and Recovery Act (United States)
TDG:	Transportation of Dangerous Goods (Canada)
TLV-TWA:	Threshold Limit Value - Time-Weighted Average

References:

- (1) CHEMINFO (2015) Canadian Centre of Occupational Health and Safety, Hamilton (Ontario) Canada.
- (2) Safety Data Sheet of the supplier.

Code of SDS:

CA U DRU SS FS 028

For more information:

1 800 567-1492

The Safety Data Sheets of SOPREMA Canada are available on Internet at the following site: www.soprema.ca

Justification of the update:

- Triennial update.
- GHS format.
- Addition of oxidized asphalt to the list of ingredients

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Safety Data Sheet

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Document Group: 10-2980-0
Issue Date: 11/17/15

Version Number: 46.02
Supersedes Date: 11/16/15

SECTION 1: Identification

1.1. Product identifier

3M™ Fastbond™ Contact Adhesive 30-NF, Neutral

Product Identification Numbers

62-4274-6530-7, 62-4274-6535-6, 62-4274-7530-6, 62-4274-7535-5, 62-4274-8530-5, 62-4274-9530-4

1.2. Recommended use and restrictions on use

Recommended use

water based contact adhesive, Industrial use

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Skin Sensitizer: Category 1.

Reproductive Toxicity: Category 1B.

Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

May cause an allergic skin reaction.
May damage fertility or the unborn child.

Causes damage to organs:
sensory organs |

Causes damage to organs through prolonged or repeated exposure:
nervous system |
sensory organs |

Precautionary Statements

Prevention:

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wear protective gloves and eye/face protection.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see Notes to Physician on this label).

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:

This product contains methanol. If there is a reasonable suspicion of methanol poisoning, intravenous (IV) administration with either fomepizole (preferred) or ethanol (if fomepizole is unavailable) should be considered as part of the medical management.

2.3. Hazards not otherwise classified

None.

6% of the mixture consists of ingredients of unknown acute dermal toxicity.
14% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Water	7732-18-5	30 - 60 Trade Secret *
Polychloroprene	9010-98-4	25 - 50 Trade Secret *
Glycerol Esters of Rosin Acids	8050-31-5	5 - 10 Trade Secret *
Rosin, Polymer with Phenol	68083-03-4	3 - 7 Trade Secret *
Methyl Alcohol	67-56-1	1 - 5 Trade Secret *
Zinc Oxide	1314-13-2	1 - 5 Trade Secret *
Toluene	108-88-3	1 - 3 Trade Secret *
2,2'-Methylenebis[6-tert-Butyl-p-Cresol]	119-47-1	0.1 - < 1 Trade Secret *
Rosin	8050-09-7	0.1 - 1 Trade Secret *
Potassium Hydroxide	1310-58-3	< 0.5 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures**4.1. Description of first aid measures****Inhalation:**

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

This product contains methanol. If there is a reasonable suspicion of methanol poisoning, intravenous (IV) administration with either fomepizole (preferred) or ethanol (if fomepizole is unavailable) should be considered as part of the medical management.

SECTION 5: Fire-fighting measures**5.1. Suitable extinguishing media**

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products**Substance**

Formaldehyde

Condition

During Combustion

Carbon monoxide
Carbon dioxide

During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with water. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
Toluene	108-88-3	CMRG	STEL:75 ppm	Skin Notation
Toluene	108-88-3	OSHA	TWA:200 ppm;CEIL:300 ppm	
Potassium Hydroxide	1310-58-3	ACGIH	CEIL:2 mg/m3	
Zinc Oxide	1314-13-2	ACGIH	TWA(respirable fraction):2 mg/m3;STEL(respirable	

Zinc Oxide	1314-13-2	OSHA	fraction):10 mg/m3 TWA(as fume):5 mg/m3;TWA(as total dust):15 mg/m3;TWA(respirable fraction):5 mg/m3	
Methyl Alcohol	67-56-1	ACGIH	TWA:200 ppm;STEL:250 ppm	Skin Notation
Methyl Alcohol	67-56-1	OSHA	TWA:260 mg/m3(200 ppm)	
Rosin	8050-09-7	ACGIH	Limit value not established:	Dermal/Respiratory Sensitizer, Cntrl all exposr-low as possib

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended: Polymer laminate

Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

Half facepiece or full facepiece supplied-air respirator

Organic vapor respirators may have short service life.

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form: Liquid

Odor, Color, Grade:	White, slight odor of ammonia.
Odor threshold	No Data Available
pH	10 - 11
Melting point	Not Applicable
Boiling Point	>=64 °C
Flash Point	>=300 °F [Test Method: Pensky-Martens Closed Cup]
Evaporation rate	1 [Ref Std: ETHER=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Vapor Pressure	<=38 mmHg [@ 68 °F]
Vapor Density	1.1 [Ref Std: AIR=1]
Density	1.1 g/ml
Specific Gravity	1.1 [Ref Std: WATER=1]
Solubility in Water	Complete
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	No Data Available
Decomposition temperature	No Data Available
Viscosity	200 - 750 centipoise [@ 73.4 °F]
Hazardous Air Pollutants	<=4.7 % weight [Test Method: Calculated]
Molecular weight	No Data Available
VOC Less H2O & Exempt Solvents	<=80 g/l [Test Method: tested per EPA method 24]
Solids Content	42.7 - 57 %

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Strong acids

Strong oxidizing agents

10.6. Hazardous decomposition products

Substance

None known.

Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be

reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

May be harmful if swallowed.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

May cause blindness.

Prolonged or repeated exposure may cause target organ effects:

Ocular Effects: Signs/symptoms may include blurred or significantly impaired vision.

Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Olfactory Effects: Signs/symptoms may include decreased ability to detect odors and/or complete loss of smell.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE > 50 mg/l

Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
Polychloroprene	Dermal		LD50 estimated to be > 5,000 mg/kg
Polychloroprene	Ingestion	Rat	LD50 > 20,000 mg/kg
Rosin, Polymer with Phenol	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Glycerol Esters of Rosin Acids	Dermal	Rabbit	LD50 > 5,000 mg/kg
Glycerol Esters of Rosin Acids	Ingestion	Rat	LD50 > 2,000 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluène	Inhalation-Vapor (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg
Methyl Alcohol	Dermal		LD50 estimated to be 1,000 - 2,000 mg/kg
Methyl Alcohol	Inhalation-Vapor		LC50 estimated to be 10 - 20 mg/l
Methyl Alcohol	Ingestion		LD50 estimated to be 50 - 300 mg/kg
Zinc Oxide	Dermal		LD50 estimated to be > 5,000 mg/kg
Zinc Oxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.7 mg/l
Zinc Oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Rosin	Dermal	Rabbit	LD50 > 2,500 mg/kg
Rosin	Ingestion	Rat	LD50 7,600 mg/kg
Potassium Hydroxide	Dermal	Rabbit	LD50 > 1,260 mg/kg
Potassium Hydroxide	Ingestion	Rat	LD50 273 mg/kg
2,2'-Methylenebis[6-tert-Butyl-p-Cresol]	Dermal	Rabbit	LD50 > 10,000 mg/kg
2,2'-Methylenebis[6-tert-Butyl-p-Cresol]	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Polychloroprene	Human	No significant irritation
Glycerol Esters of Rosin Acids	Rabbit	Minimal irritation
Toluene	Rabbit	Irritant
Methyl Alcohol	Rabbit	Mild irritant
Zinc Oxide	Human and animal	No significant irritation
Rosin	Rabbit	No significant irritation
Potassium Hydroxide	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Polychloroprene	Professional judgement	No significant irritation
Glycerol Esters of Rosin Acids	Rabbit	Mild irritant
Toluene	Rabbit	Moderate irritant
Methyl Alcohol	Rabbit	Moderate irritant
Zinc Oxide	Rabbit	Mild irritant
Rosin	Rabbit	Mild irritant
Potassium Hydroxide	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Glycerol Esters of Rosin Acids	Guinea pig	Not sensitizing
Toluene	Guinea pig	Not sensitizing
Methyl Alcohol	Guinea	Not sensitizing

Zinc Oxide	pig Guinea pig	Some positive data exist, but the data are not sufficient for classification
Rosin	Guinea pig	Sensitizing

Respiratory Sensitization

Name	Species	Value
Rosin	Human	Some positive data exist, but the data are not sufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Glycerol Esters of Rosin Acids	In Vitro	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
Methyl Alcohol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methyl Alcohol	In vivo	Some positive data exist, but the data are not sufficient for classification
Zinc Oxide	In Vitro	Some positive data exist, but the data are not sufficient for classification
Zinc Oxide	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Methyl Alcohol	Inhalation	Multiple animal species	Not carcinogenic

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Toluene	Inhalation	Some positive female reproductive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse
Methyl Alcohol	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,600 mg/kg/day	21 days
Methyl Alcohol	Ingestion	Toxic to development	Mouse	LOAEL 4,000 mg/kg/day	during organogenesis
Methyl Alcohol	Inhalation	Toxic to development	Mouse	NOAEL 1.3 mg/l	during organogenesis
Zinc Oxide	Ingestion	Some positive	Multiple	NOAEL 125	premating &

		reproductive/developmental data exist, but the data are not sufficient for classification	animal species	mg/kg/day	during gestation
2,2'-Methylenebis[6-tert-Butyl-p-Cresol]	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 50 mg/kg/day	prematuring & during gestation
2,2'-Methylenebis[6-tert-Butyl-p-Cresol]	Ingestion	Toxic to male reproduction	Rat	NOAEL 12.5 mg/kg/day	50 days

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Methyl Alcohol	Inhalation	blindness	Causes damage to organs	Human	NOAEL Not available	occupational exposure
Methyl Alcohol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Methyl Alcohol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 hours
Methyl Alcohol	Ingestion	blindness	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
Methyl Alcohol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Potassium Hydroxide	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Glycerol Esters of Rosin Acids	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 5,000 mg/kg/day	90 days
Glycerol Esters of Rosin Acids	Ingestion	heart skin endocrine system bone, teeth, nails, and/or hair blood bone marrow hematopoietic system immune system muscles nervous system eyes kidney and/or bladder respiratory system	All data are negative	Rat	NOAEL 5,000 mg/kg/day	90 days
Toluene	Inhalation	auditory system nervous system eyes olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Some positive data exist, but the	Rat	NOAEL 1.1	4 weeks

			data are not sufficient for classification		mg/l	
Toluene	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system vascular system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 105 mg/kg/day	4 weeks
Methyl Alcohol	Inhalation	liver	All data are negative	Rat	NOAEL 6.55 mg/l	4 weeks
Methyl Alcohol	Inhalation	respiratory system	All data are negative	Rat	NOAEL 13.1 mg/l	6 weeks
Methyl Alcohol	Ingestion	liver nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	90 days
Zinc Oxide	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	10 days
Zinc Oxide	Ingestion	endocrine system hematopoietic system kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Other	NOAEL 500 mg/kg/day	6 months

Aspiration Hazard

Name	Value
Toluene	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Toluene	108-88-3	Trade Secret 1 - 3
Methyl Alcohol	67-56-1	Trade Secret 1 - 5
Zinc Oxide (ZINC COMPOUNDS)	1314-13-2	1 - 5

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M Fire Barrier 2000+ Premium Silicone Sealant

Product Identification Numbers

98-0400-5299-9, 98-0400-5300-5

1.2. Recommended use and restrictions on use

Recommended use

A FIRE STOPPING SEALANT FOR FIRE RATED WALL AND FLOOR PENETRATION AND JOINTS., FIRE STOP MATERIAL

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

2.2. Label elements

Signal word

Not applicable.

Symbols

Not applicable.

Pictograms

Not applicable.

2.3. Hazards not otherwise classified

None.

60% of the mixture consists of ingredients of unknown acute oral toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Polysiloxane NJTS Reg. No. 04499600-7182	Trade Secret*	30 - 60 Trade Secret *
Calcium Carbonate	471-34-1	30 - 60 Trade Secret *
Dimethyl Siloxane, Dimethylvinylsiloxo-terminated	68083-19-2	5 - 10 Trade Secret *
Methyltrimethoxysilane	1185-55-3	3 - 7 Trade Secret *
Stearic Acid	57-11-4	1 - 5 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide

Carbon dioxide

Condition

During Combustion

During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Keep out of reach of children. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

7.2. Conditions for safe storage including any incompatibilities

Keep container tightly closed.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Methyltrimethoxysilane	1185-55-3	CMRG	TWA: 50 ppm	
Calcium Carbonate	471-34-1	CMRG	TWA: 10 mg/m ³ ; STEL: 20 mg/m ³	
Limestone	471-34-1	OSHA	TWA (as total dust): 15 mg/m ³ ; TWA (respirable fraction): 5 mg/m ³	
STEARATES	57-11-4	ACGIH	TWA: 10 mg/m ³	A4: Not class. as human carcin

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

CMRG: Chemical Manufacturer's Recommended Guidelines

OSHA: United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls**8.2.1. Engineering controls**

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)**Eye/face protection**

None required.

Skin/hand protection

No chemical protective gloves are required.

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

General Physical Form:	Solid
Specific Physical Form:	Paste
Odor, Color, Grade:	Gray silicone sealant paste with alcoholic odor.
Odor threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point	<i>No Data Available</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	No flash point
Evaporation rate	<i>No Data Available</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Specific Gravity	1.34 [Ref Std: WATER=1] [Details: CONDITIONS: @ 25C]
Solubility In Water	<i>No Data Available</i>
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity	<i>No Data Available</i>
VOC Less H2O & Exempt Solvents	31 g/l

SECTION 10: Stability and reactivity**10.1. Reactivity**

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products**Substance****Condition**

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects**Signs and Symptoms of Exposure**

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Contact with the skin during product use is not expected to result in significant irritation.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Calcium Carbonate	Dermal	Rat	LD50 > 2,000 mg/kg
Calcium Carbonate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3.0 mg/l
Calcium Carbonate	Ingestion	Rat	LD50 6,450 mg/kg
Dimethyl Siloxane, Dimethylvinylsiloxy-terminated	Dermal	Rabbit	LD50 > 15,440 mg/kg
Dimethyl Siloxane, Dimethylvinylsiloxy-terminated	Ingestion	Rat	LD50 > 15,440 mg/kg
Stearic Acid	Dermal	Rabbit	LD50 > 2,000 mg/kg

Stearic Acid	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Calcium Carbonate	Rabbit	No significant irritation
Dimethyl Siloxane, Dimethylvinylsiloxo-terminated	Rabbit	No significant irritation
Stearic Acid	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Calcium Carbonate	Rabbit	No significant irritation
Dimethyl Siloxane, Dimethylvinylsiloxo-terminated	Rabbit	Mild irritant
Stearic Acid		Moderate irritant

Skin Sensitization

Name	Species	Value

Respiratory Sensitization

Name	Species	Value

Germ Cell Mutagenicity

Name	Route	Value
Stearic Acid	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Stearic Acid	Ingestion	Rat	Not carcinogenic

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Ingestion	Not toxic to development	Rat	NOAEL 625 mg/kg/day	prematuring & during gestation

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Inhalation	respiratory system	All data are negative	Rat	NOAEL 0.812 mg/l	90 minutes
Stearic Acid	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Stearic Acid	Ingestion	blood	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 weeks

Aspiration Hazard

Name	Value

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Prior to disposal, consult all applicable authorities and regulations to insure proper classification. Dispose of waste product in a permitted industrial waste facility.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

15.2. State Regulations

15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

15.4. International Regulations

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 1 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 1 Flammability: 1 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Material Safety Data Sheet

The Dow Chemical Company

Product Name: GREAT STUFF™ Big Gap Filler Insulating Foam Sealant 12oz HC CAN

Issue Date: 12/10/2012

Print Date: 22 Jan 2013

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

GREAT STUFF™ Big Gap Filler Insulating Foam Sealant 12oz HC CAN

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
United States

Customer Information Number:

800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

989-636-4400

Local Emergency Contact:

989-636-4400

2. Hazards Identification

Emergency Overview

Color: Yellow

Physical State: Foam

Odor: Mild

Hazards of product:

DANGER! Flammable gas - May cause flash fire. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause eye irritation. May cause skin irritation. Vapor reduces oxygen available for breathing. May cause anesthetic effects. May cause respiratory tract irritation. Vapors may travel a long distance; ignition and/or flash back may occur. Evacuate area. Keep upwind of spill. Stay out of low areas. Aerosol cans exposed to fire can rupture becoming flaming projectiles. Elevated temperatures can cause hazardous polymerization. Toxic fumes may be released in fire situations. Contents under pressure. Avoid temperatures above 49°C (120.2°F)

OSHA Hazard Communication Standard

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This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause eye irritation. May cause slight temporary corneal injury.

Skin Contact: Prolonged contact may cause moderate skin irritation with local redness. Material may stick to skin causing irritation upon removal. May stain skin.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Skin Sensitization: Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Inhalation: In confined or poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. May cause central nervous system depression. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Decreased lung function has been associated with overexposure to isocyanates.

Respiratory Sensitization: May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.

Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.

Effects of Repeated Exposure: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Contains component(s) which have been reported to cause effects on the following organs in animals: Kidney. Liver.

Cancer Information: Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Birth Defects/Developmental Effects: In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

3. Composition Information

Component	CAS #	Amount
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha.'-1,2,3-propanetriyltris[.omega.-hydroxypoly	57029-46-6	>= 30.0 - <= 60.0 %
Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer	53862-89-8	>= 10.0 - <= 30.0 %
Tris(1-chloro-2-propyl) phosphate	13674-84-5	>= 5.0 - <= 10.0 %
Paraffin waxes and Hydrocarbon waxes, chlorinated	63449-39-8	>= 5.0 - <= 10.0 %
Isobutane	75-28-5	>= 5.0 - <= 10.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %
4,4'-Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - <= 10.0 %

Note: CAS 101-68-8 is an MDI isomer that is part of CAS 9016-87-9.

4. First-aid measures

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin Contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Although cholinesterase depression has been reported with this material, it is not of benefit in determining exposure and need not be considered in the treatment of persons exposed to the material. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome). Repeated excessive exposure may aggravate preexisting lung disease.

5. Fire Fighting Measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Extinguishing Media to Avoid: Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Isocyanates. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Hydrogen cyanide.

Unusual Fire and Explosion Hazards: Contains flammable propellant. Aerosol cans exposed to fire can rupture and become flaming projectiles. Propellant release may result in a fireball. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Dense smoke is produced when product burns.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Confined space entry procedures must be followed before entering the area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Isolate area until gas has dispersed. Use non-sparking tools in cleanup operations. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Collect in suitable and properly labeled containers. Absorb with materials such as: Clay. Dirt. Milsorb®. Sand. Sawdust. Vermiculite. See Section 10 for more specific information. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. Keep out of reach of children. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Contents under pressure. Do not puncture or incinerate container. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Do not enter confined spaces unless adequately ventilated. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in a dry place. See Section 10 for more specific information.

Shelf life: Use within 12 Months Do not store above: 49 °C

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
4,4'-Methylenediphenyl diisocyanate	ACGIH	TWA	0.005 ppm
	OSHA Table Z-1	Ceiling	0.2 mg/m3 0.02 ppm
Methyl ether	AIHA WEEL	TWA	1,880 mg/m3 1,000 ppm
Isobutane	ACGIH	TWA	1,000 ppm
Propane	OSHA Table Z-1	PEL	1,800 mg/m3 1,000 ppm
	ACGIH	TWA	1,000 ppm

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields).

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber, Chlorinated polyethylene, Polyethylene, Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Neoprene, Nitrile/butadiene rubber ("nitrile" or "NBR"), Viton, Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure. Lethal concentrations may exist in areas with poor ventilation.

9. Physical and Chemical Properties

Appearance	
Physical State	Foam
Color	Yellow
Odor	Mild
Odor Threshold	No test data available
pH	<i>Not applicable</i>
Melting Point	No test data available
Freezing Point	No test data available
Boiling Point (760 mmHg)	Not applicable.
Flash Point - Closed Cup	-104 °C (-155 °F) <i>Estimated.</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Flammable gas.
Flammable Limits in Air	Lower: No test data available Upper: No test data available
Vapor Pressure	1,151 kPa @ 55 °C <i>Calculated</i>
Vapor Density (air = 1)	No test data available
Specific Gravity (H2O = 1)	1.06 <i>Estimated.</i>
Solubility in water (by weight)	Insoluble
Partition coefficient, n-octanol/water (log Pow)	Reacts with water.
Autoignition Temperature	No test data available
Decomposition Temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	No

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Stable under recommended storage conditions. See Storage, Section 7. Unstable at elevated temperatures.

Possibility of hazardous reactions

Can occur. Elevated temperatures can cause hazardous polymerization.

Conditions to Avoid: Avoid temperatures above 116 °C (241 °F). Elevated temperatures can cause container to vent and/or rupture. Exposure to elevated temperatures can cause product to decompose.

Incompatible Materials: Avoid contact with: Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Strong oxidizers. Products based on diisocyanates like TDI and MDI react with many materials to release heat. The reaction rate increases with temperature as well as with increased contact; these reactions can become violent. Contact is increased by stirring or if the other material acts as a solvent. Products based on diisocyanates such as TDI and MDI are not soluble in water and will sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials.
Toxic gases are released during decomposition.

11. Toxicological Information

Acute Toxicity

Ingestion

As product: Single dose oral LD50 has not been determined.

Estimated. LD50, rat > 2,000 mg/kg

Dermal

As product: The dermal LD50 has not been determined.

Estimated. LD50, rabbit > 2,000 mg/kg

Inhalation

As product: The LC50 has not been determined.

Eye damage/eye irritation

May cause eye irritation. May cause slight temporary corneal injury.

Skin corrosion/irritation

Prolonged contact may cause moderate skin irritation with local redness. Material may stick to skin causing irritation upon removal. May stain skin.

Sensitization

Skin

Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Respiratory

May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Repeated Dose Toxicity

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Contains component(s) which have been reported to cause effects on the following organs in animals: Kidney. Liver.

Chronic Toxicity and Carcinogenicity

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Developmental Toxicity

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

Reproductive Toxicity

No relevant data found.

Genetic Toxicology

In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

12. Ecological Information

Toxicity

Data for Component: Diphenylmethane Diisocyanate, isomers and homologues

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 > 100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

|| Based on information for a similar material: LC50, Danio rerio (zebra fish), static test, 96 h: > 1,000 mg/l

Aquatic Invertebrate Acute Toxicity

|| Based on information for a similar material: EC50, Daphnia magna (Water flea), static test, 24 h: > 1,000 mg/l

Aquatic Plant Toxicity

|| Based on information for a similar material: NOEC, Desmodesmus subspicatus (green algae), static test, Growth rate inhibition, 72 h: 1,640 mg/l

Toxicity to Micro-organisms

|| Based on information for a similar material: EC50; activated sludge, static test, 3 h: > 100 mg/l

Toxicity to Soil Dwelling Organisms

|| EC50, Eisenia fetida (earthworms), 14 d: > 1,000 mg/kg

Data for Component: Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.,.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly

|| Not expected to be acutely toxic to aquatic organisms.

Data for Component: Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

|| Not expected to be acutely toxic to aquatic organisms.

Data for Component: Tris(1-chloro-2-propyl) phosphate

|| Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

|| LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 h: 84 mg/l

Aquatic Invertebrate Acute Toxicity

|| EC50, Daphnia magna (Water flea), 48 h, immobilization: 131 mg/l

Aquatic Plant Toxicity

|| ErC50, Pseudokirchneriella subcapitata (green algae), static test, Growth rate inhibition, 96 h: 82 mg/l

Toxicity to Micro-organisms

|| EC50, OECD 209 Test; activated sludge, Respiration inhibition, 3 h: 784 mg/l

Aquatic Invertebrates Chronic Toxicity Value

|| Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, NOEC: 32 mg/l

Data for Component: Paraffin waxes and Hydrocarbon waxes, chlorinated

|| Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

Fish Acute & Prolonged Toxicity

|| LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 h: > 100 mg/l

Aquatic Invertebrate Acute Toxicity

|| EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 0.037 mg/l

Data for Component: Isobutane

|| No relevant data found.

Data for Component: Methyl ether

|| Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

|| LC50, Poecilia reticulata (guppy), semi-static test, 96 h: > 4,000 mg/l

Aquatic Invertebrate Acute Toxicity

|| LC50, Daphnia magna (Water flea), 48 h, immobilization: > 4,000 mg/l

Data for Component: Propane

|| No relevant data found.

Data for Component: 4,4'-Methylenediphenyl diisocyanate

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

Based on information for a similar material: LC50, Danio rerio (zebra fish), static test, 96 h: > 1,000 mg/l

Aquatic Invertebrate Acute Toxicity

Based on information for a similar material: EC50, Daphnia magna (Water flea), static test, 24 h: > 1,000 mg/l

Aquatic Plant Toxicity

Based on information for a similar material: NOEC, Desmodesmus subspicatus (green algae), static test, Growth rate inhibition, 72 h: 1,640 mg/l

Toxicity to Micro-organisms

Based on information for a similar material: EC50; activated sludge, static test, 3 h: > 100 mg/l

Toxicity to Soil Dwelling Organisms

EC50, Eisenia fetida (earthworms), 14 d: > 1,000 mg/kg

Persistence and Degradability

Data for Component: Diphenylmethane Diisocyanate, isomers and homologues

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

OECD Biodegradation Tests: Based on information for a similar material:

Biodegradation	Exposure Time	Method	10 Day Window
0 %	28 d	OECD 302C Test	Not applicable

Data for Component: Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.,.alpha."-1,2,3-propanetriyl[tris].omega.-hydroxypoly

Expected to degrade only slowly in the environment.

Data for Component: Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Expected to degrade only slowly in the environment.

Data for Component: Tris(1-chloro-2-propyl) phosphate

Material is expected to biodegrade only very slowly (in the environment). Falls to pass OECD/EEC tests for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
14 %	28 d	OECD 301E Test	fail
95 %	64 d	OECD 302A Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
4.47E-11 cm ³ /s	0.24 d	Estimated.

Theoretical Oxygen Demand: 1.17 mg/mg

Data for Component: Paraffin waxes and Hydrocarbon waxes, chlorinated

Expected to degrade only slowly in the environment.

Theoretical Oxygen Demand: 2.89 mg/mg

Data for Component: Isobutane

Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.44E-12 cm ³ /s	4.4 d	Estimated.

Theoretical Oxygen Demand: 3.58 mg/mg

Data for Component: **Methyl ether**

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
5 %	28 d	OECD 301A Test	fail

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.66E-12 cm ³ /s	6.4 d	Estimated.

Theoretical Oxygen Demand: 2.08 mg/mg

Data for Component: **Propane**

No relevant data found.

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.27E-12 cm ³ /s	8.4 d	Estimated.

Theoretical Oxygen Demand: 3.64 mg/mg

Data for Component: **4,4'-Methylenediphenyl diisocyanate**

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

OECD Biodegradation Tests: Based on information for a similar material:

Biodegradation	Exposure Time	Method	10 Day Window
0 %	28 d	OECD 302C Test	Not applicable

Bioaccumulative potential

Data for Component: **Diphenylmethane Diisocyanate, isomers and homologues**

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.,.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly**

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Tris(1-chloro-2-propyl) phosphate**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 2.59 Measured

Bioconcentration Factor (BCF): 0.8 - 4.6; Cyprinus carpio (Carp); Measured

Data for Component: **Paraffin waxes and Hydrocarbon waxes, chlorinated**

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).

Partition coefficient, n-octanol/water (log Pow): 7.4 Estimated.

Data for Component: **Isobutane**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 2.76 Measured

Data for Component: **Methyl ether**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 0.10 Measured

Data for Component: **Propane**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 2.36 Measured

Data for Component: **4,4' -Methylenediphenyl diisocyanate**

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Mobility in soil

Data for Component: **Diphenylmethane Diisocyanate, isomers and homologues**

Mobility in soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.,.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly**

Mobility in soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Mobility in soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Tris(1-chloro-2-propyl) phosphate**

Mobility in soil: Potential for mobility in soil is slight (Koc between 2000 and 5000).
Partition coefficient, soil organic carbon/water (Koc): 1,300 Estimated.
Henry's Law Constant (H): < 1.35E-05 atm*m3/mole; 25 °C Estimated.

Data for Component: **Paraffin waxes and Hydrocarbon waxes, chlorinated**

Mobility in soil: Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process., Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient, soil organic carbon/water (Koc): > 5,000 Estimated.
Henry's Law Constant (H): < 1.0E-07 atm*m3/mole; 25 °C Estimated.

Data for Component: **Isobutane**

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 35 Estimated.
Henry's Law Constant (H): 1.19E+00 atm*m3/mole; 25 °C Measured

Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
100 %	0 %	0 %	0 %	0 %

Data for Component: **Methyl ether**

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 1.29 - 14 Estimated.
Henry's Law Constant (H): 9.78E-04 atm*m3/mole; 25 °C Measured

Data for Component: **Propane**

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 24 - 460 Estimated.
Henry's Law Constant (H): 7.07E-01 atm*m3/mole; 25 °C Measured

Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
100 %	0 %	0 %	0 %	0 %

Data for Component: **4,4' -Methylenediphenyl diisocyanate**

Mobility in soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED

PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. Transport Information

DOT Non-Bulk

CONSUMER COMMODITY RECLASSIFIED AS ORM-D MATERIAL

DOT Bulk

NOT AVAILABLE IN BULK CONTAINERS

IMDG

Proper Shipping Name: AEROSOLS

Hazard Class: 2.1 ID Number: UN1950

EMS Number: F-D,S-U

Marine pollutant.: Yes

LIMITED QUANTITY

ICAO/IATA

Proper Shipping Name: AEROSOLS, FLAMMABLE

Hazard Class: 2.1 ID Number: UN1950 Cargo Packing Instruction: 203

Passenger Packing Instruction: 203

LIMITED QUANTITY

Additional Information

MARINE POLLUTANT

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard Yes

Delayed (Chronic) Health Hazard Yes

Fire Hazard Yes

Reactive Hazard No

Sudden Release of Pressure Hazard No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - <= 10.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - <= 10.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %
Isobutane	75-28-5	>= 5.0 - <= 10.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

This product contains the following substances which are subject to CERCLA Section 103 reporting requirements and which are listed in 40 CFR 302.4.

Component	CAS #	Amount
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - <= 10.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %
Isobutane	75-28-5	>= 5.0 - <= 10.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Recommended Uses and Restrictions

Identified uses

Polyurethane foam.

Revision

Identification Number: 63952 / 0000 / Issue Date 12/10/2012 / Version: 3.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

Safety Data Sheet

GREENchoice Smoke & Sound Sealant

Section 1. Identification

GHS product identifier : GREENchoice Smoke & Sound Sealant
Product type : Liquid.
CAS # : mixture
Address : Franklin International
2020 Bruck Street
Columbus OH 43207
Contact person : Franklin Technical Services
Telephone : (800) 877-4583
In case of emergency : Franklin Security
(614) 445-1300
Reference number : 8001
Product code : 2892
Date of revision : 6/5/2015.
Print date : 6/5/2015.
Chemtrec (24 Hour) : (800) 424 - 9300
Chemtrec International : (703) 527 - 3887
Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : ACUTE TOXICITY (inhalation) - Category 4
GHS label elements
Hazard pictograms : 
Signal word : Warning
Hazard statements : Harmful if inhaled.
Precautionary statements
General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Prevention : Use only outdoors or in a well-ventilated area. Avoid breathing vapor.
Response : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Hazardous ingredients

United States

Name	CAS number	%
ethanediol	107-21-1	0.1 - 0.5

Canada

Name	CAS number	%
ethanediol	107-21-1	0.1 - 0.5

Mexico

Name	CAS number	UN number	%	IDLH	Classification			
					H	F	R	Special
No hazardous ingredient								

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Harmful if inhaled.

Section 4. First aid measures

- Skin contact** : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media : None known.
Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products : No specific data.
Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 5 to 38°C (41 to 100.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

United States

Occupational exposure limits

Ingredient name	Exposure limits
ethanediol	OSHA PEL 1989 (United States, 3/1989). CEIL: 50 ppm CEIL: 125 mg/m ³ ACGIH TLV (United States, 4/2014). C: 100 mg/m ³ Form: Aerosol

Canada

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			Notations
Ingredient	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	
ethanediol	US ACGIH 4/2014	-	-	-	-	-	-	-	100	-	[a]
	AB 4/2009	-	-	-	-	-	-	-	100	-	[3] [b]
	BC 4/2014	-	-	-	-	-	-	-	100	-	[a]
		-	10	-	-	20	-	-	-	-	[c]
		-	-	-	-	-	-	50	-	-	[d]
	ON 1/2013	-	-	-	-	-	-	-	100	-	[b]
	QC 1/2014	-	-	-	50	127	-	-	-	-	[e]

Section 8. Exposure controls/personal protection

[3]Skin sensitization

Form: [a]Aerosol [b]aerosol [c]Particulate [d]Vapour [e]vapour and mist

Mexico

Occupational exposure limits

Ingredient	Exposure limits
No exposure limit value known.	

Consult local authorities for acceptable exposure limits.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid. [Paste.]
Color	: White.
Odor	: Characteristic.
Odor threshold	: Not available.
pH	: 7 to 8
Melting point	: Not available.
Boiling point	: 100°C (212°F)
Flash point	: Closed cup: >93.333°C (>200°F) [Setaflash.]
Evaporation rate	: >1 (butyl acetate = 1)
VOC (less water, less exempt solvents)	: 40.82 g/l
Relative density	: 1.52423

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ethanediol	LC50 Inhalation Vapor LD50 Oral	Rat Rat	10.92 mg/l 4700 mg/kg	4 hours -

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
ethanediol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Eyes - Mild irritant	Eyes - Mild irritant	Rabbit	-	1 hours 100 milligrams	-
Eyes - Moderate irritant	Eyes - Moderate irritant	Rabbit	-	6 hours 1440 milligrams	-
Skin - Mild Irritant	Skin - Mild irritant	Rabbit	-	555 milligrams	-

Conclusion/Summary

Skin	: Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Eyes	: This product may irritate eyes upon contact.
Respiratory	: Inhalation of oil mist or vapors at elevated temperatures may cause respiratory irritation.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
ethanediol	Category 2 Category 3	Oral Not applicable.	kidneys Narcotic effects

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Inhalation.
Routes of entry not anticipated: Dermal.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : Harmful if inhaled.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
ethanediol	Acute EC50 10940 mg/l	Algae - Selenastrum capricornutum	96 hours
	Acute LC50 13140000 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 41000000 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 8050000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 10000 mg/l	Algae - Selenastrum capricornutum	96 hours

Conclusion/Summary : Not available.

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
ethanediol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
ethanediol	-1.36	10	low

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR:** Nonylphenol, branched, ethoxylated; Poly(oxy-1,2-ethanediyl), α-[(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Section 15. Regulatory information

Clean Air Act Section 602 : Not listed
 Class II Substances

SARA 302/304**Composition/information on ingredients**

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
ethanediol	0.1 - 0.5	No.	No.	No.	Yes.	Yes.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

Not available.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Not applicable.				

Canada**Canadian lists**

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

Canada inventory : Not determined.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Mexico

Classification :

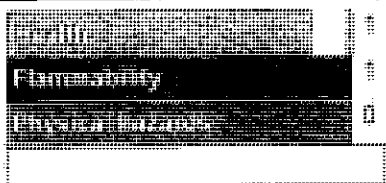
**International regulations**

Section 15. Regulatory information

International lists	: Australia inventory (AICS): At least one component is not listed. China inventory (IECSC): Not determined. Japan inventory: Not determined. Korea inventory: Not determined. Malaysia Inventory (EHS Register): Not determined. New Zealand Inventory of Chemicals (NZIoC): Not determined. Philippines inventory (PICCS): Not determined. Taiwan inventory (CSNN): Not determined.
Europe	: Not determined.
Chemical Weapons Convention List Schedule I Chemicals	: Not listed
Chemical Weapons Convention List Schedule II Chemicals	: Not listed
Chemical Weapons Convention List Schedule III Chemicals	: Not listed

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing	: 6/5/2015.
Date of issue/Date of revision	: 6/5/2015.

Section 16. Other information**Date of previous issue** : 5/26/2015.**Version** : 4.1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.☒ Indicates information that has changed from previously issued version.**Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

High Temperature Adhesive

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- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Methods and materials for containment and cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
- Conditions for safe storage : Store at room temperature.
- Materials to avoid : No materials to be especially mentioned.
- Packaging material : Unsuitable material: Aluminium

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
limestone (Natural)	1317-65-3	TWA (Respirable)	5 mg/m ³	NIOSH REL
		TWA (total)	10 mg/m ³	NIOSH REL
		TWA (Respirable)	5 mg/m ³	NIOSH REL
		TWA (total)	10 mg/m ³	NIOSH REL
		TWA (total dust)	15 mg/m ³	OSHA
		TWA (respirable fraction)	5 mg/m ³	OSHA
		TWA (Total dust)	15 mg/m ³	OSHA
		TWA (respirable dust fraction)	5 mg/m ³	OSHA
		TWA	5 mg/m ³	NIOSH REL

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		(Respirable)		
		TWA (total)	10 mg/m3	NIOSH REL

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Hand protection
Remarks : For prolonged or repeated contact use protective gloves.
- Eye protection : Safety glasses
- Skin and body protection : If used and stored as directed, no special protective equipment is necessary.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Written instructions for handling must be available at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : light yellow
- Odour : slight
- Odour Threshold : No data available
- pH : 10.7
: Not applicable
- Boiling point/boiling range : 212 °F
- Flash point : No data available
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Upper explosion limit : No data available
- Lower explosion limit : No data available
- Vapour pressure : No data available
- Relative vapour density : No data available
- Relative density : 1.3
- Solubility(ies)
Water solubility : completely miscible

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Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: 7.2 Pas
Viscosity, kinematic	: 7,200 mm ² /s

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: Stable under recommended storage conditions. No hazards to be specially mentioned.
Conditions to avoid	: No data available

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity****Components:****limestone (Natural):**

Acute oral toxicity : LD50 (Rat): > 6,450 mg/kg

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Further information**Product:**

Remarks: No data available

High Temperature Adhesive

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation

40 CFR Protection of Environment; Part 82 Protection of
Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured with a
Class I or Class II ODS as defined by the U.S. Clean Air Act
Section 602 (40 CFR 82, Subpl. A, App.A + B).Additional ecological
information

: No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Contaminated packaging

: Empty containers should be taken to an approved waste
handling site for recycling or disposal.
Packaging that can not be reused after cleaning must be
disposed or recycled in accordance with all federal, national
and local regulations.

SECTION 14. TRANSPORT INFORMATION**International transport regulations**

These products are not classified as dangerous goods according to international transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA list

: Not relevant

Not relevant

High Temperature Adhesive

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Print Date 07/30/2015

EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.**Clean Air Act**

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:**TSCA** : On TSCA Inventory**DSL** : This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.

: limestone (Natural)

SECTION 16. OTHER INFORMATION**Further information**

Revision Date : 01/15/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



SAFETY DATA SHEET

Identification

Product identifier HYDROCAL® White Gypsum Cement

Other means of identification

SDS number 52000000092

Synonyms Gypsum Cement

Recommended use Base.

Recommended restrictions Use in accordance with manufacturer's recommendations.

Manufacturer/Importer/Supplier/Distributor information

Company name United States Gypsum Company

Address 550 West Adams Street
Chicago, Illinois 60661-3637

Telephone 1-800-874-4968

Website www.usg.com

Emergency phone number 1-800-507-8899

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement None.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Get medical attention/advice if you feel unwell.

Storage Store as indicated in Section 7.

Disposal Dispose of in accordance with local, state, and federal regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1)	26499-65-0	> 95

Composition comments All concentrations are in percent by weight unless ingredient is a gas.

4. First-aid measures

Inhalation Dust irritates the respiratory system, and may cause coughing and difficulties in breathing. Move injured person into fresh air and keep person calm under observation. Get medical attention if symptoms persist.

Skin contact Contact with dust: Rinse area with plenty of water. Get medical attention if irritation develops or persists.

Eye contact Dust in the eyes: Do not rub eyes. Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion Plaster of Paris hardens and if ingested may result in stomach and intestinal blockage. Drinking gelatin solutions or large volumes of water may delay setting.

Most important symptoms/effects, acute and delayed

Under normal conditions of intended use, this product is not expected to be a health risk. Dust may irritate throat and respiratory system and cause coughing.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

Ensure that medical personnel are aware of the material(s) involved.

5. Fire-fighting measures

Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media

Not applicable.

Specific hazards arising from the chemical

Not a fire hazard.

Special protective equipment and precautions for firefighters

Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions

Use standard firefighting procedures and consider the hazards of other involved materials.

Specific methods

Cool material exposed to heat with water spray and remove it if no risk is involved.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

See Section 8 of the SDS for Personal Protective Equipment.

Methods and materials for containment and cleaning up

Vacuum up the spilled material. Vacuums used for this purpose should be equipped with HEPA filters. Containers must be labeled. Collect in approved containers and seal securely. For waste disposal, see Section 13 of the SDS.

Environmental precautions

Avoid discharge to drains, sewers, and other water systems.

7. Handling and storage

Precautions for safe handling

Minimize dust production when mixing, or opening and closing bags. Avoid inhalation of dust. Wear appropriate personal protective equipment. Wash hands after handling. Observe good industrial hygiene practices and use appropriate lifting techniques.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated place. Store away from incompatible materials. Avoid contact with acids, water, and moisture.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)	TWA	10 mg/m3	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)	TWA	5 mg/m3	Respirable.

Components	Type	Value	Form
		10 mg/m ³	Total
Biological limit values	No biological exposure limits noted for the ingredient(s).		
Appropriate engineering controls	Provide sufficient ventilation for operations causing dust formation. Observe occupational exposure limits and minimize the risk of exposure.		
Individual protection measures, such as personal protective equipment			
Eye/face protection	Wear approved safety goggles.		
Skin protection			
Hand protection	It is a good industrial hygiene practice to minimize skin contact. For prolonged or repeated skin contact use suitable protective gloves.		
Other	Normal work clothing (long sleeved shirts and long pants) is recommended.		
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.		
Thermal hazards	None.		
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment separately from regular wash. Observe any medical surveillance requirements.		

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Powder.
Color	White to off-white.
Odor	Low to no odor.
Odor threshold	Not applicable.
pH	6 - 8
Melting point/freezing point	Not applicable. Not applicable.
Initial boiling point and boiling range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit - upper (%)	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	2.96 (H ₂ O=1)
Solubility(ies)	
Solubility (water)	0.15 - 0.4 g/100 g (H ₂ O)
Partition coefficient (octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.

Decomposition temperature	2642 °F (1450 °C)
Viscosity	Not applicable.
Other information	
Bulk density	55 - 70 lb/ft³
Particle size	Varies.
VOC (Weight %)	0 %

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	When mixed with water this product can become very hot. Encasing or making moulds of any body part can cause serious burns that may require surgical removal of affected tissue and even amputation of encased body part.
Incompatible materials	Acids. Exposure to water and acids must be supervised because the reactions are vigorous and produce large amounts of heat.
Hazardous decomposition products	Calcium oxides. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion may cause irritation and stomach discomfort.
Inhalation	Airborne dust may irritate throat and upper respiratory system causing coughing.
Skin contact	Under normal conditions of intended use, this product does not pose a skin hazard.
Eye contact	Direct contact with airborne particulates may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Dust may irritate eyes and mucous membranes of the nose, throat and upper respiratory system causing sneezing and/or coughing.

Information on toxicological effects

Acute toxicity	Not expected to be a hazard under normal conditions of intended use.
Skin corrosion/irritation	Not a skin irritant.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not expected to cause respiratory sensitization based on non-skin sensitization history.
Skin sensitization	Not a skin sensitizer. Plaster of Paris has displayed little sensitization potential.
Germ cell mutagenicity	No evidence of mutagenicity found in Ames bacterial tests.
Carcinogenicity	This material is not classified as a carcinogen by IARC, ACGIH, NTP or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	Not expected to be a reproductive hazard.
Specific target organ toxicity - single exposure	No data available, but none expected.
Specific target organ toxicity - repeated exposure	No data available, but none expected.
Aspiration hazard	Due to the physical form of the product it is not an aspiration hazard.
Chronic effects	No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) > 1970 mg/l, 96 hours
Persistence and degradability	Calcium sulfate dissolves in water forming calcium and sulfate ions.	
Bioaccumulative potential	Bioaccumulation is not expected.	
Mobility in soil	No data available.	
Other adverse effects	None expected.	

13. Disposal considerations

Disposal instructions	Dispose in accordance with applicable federal, state, and local regulations. Recycle responsibly.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in accordance with local regulations.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable. This product is a solid. Therefore, bulk transport is governed by IMSBC code.

15. Regulatory information

Federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200 (OSHA) and 8 CCR § 5194 (Cal/OSHA).

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

- Immediate Hazard - No
- Delayed Hazard - No
- Fire Hazard - No
- Pressure Hazard - No
- Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)

US. New Jersey Worker and Community Right-to-Know Act

Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)

US. Pennsylvania Worker and Community Right-to-Know Law

Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 06-August-2014

Revision date -

Version # 01

Further information Plaster of Paris: Is classified as a hazardous substance but is generally considered a safe material for routine use. When plaster of Paris is used responsibly it is not considered as a dangerous material. However, when mixed with water this product can become very hot. DO NOT attempt to make a cast enclosing any part of the body. Encasing any body part can cause serious burns and even amputation of the encased body part.

NFPA Ratings:

Health: 1

Flammability: 0

Physical hazard: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

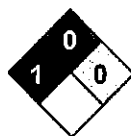
HMIS® ratings

Health: 0

Flammability: 0

Physical hazard: 0

NFPA ratings



Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



Industrial Insulation Group

A Celisite/Johns Manville Joint Venture

Date: 9/5/2008
MSDS ID: 20508
Rev: 1.0.3
Replaces: 10/27/2005

Material Safety Data Sheet

Material Name: Insulation Coating

Section 1— Chemical Product and Company Identification

Product Name: Insulkote® ET
CAS# Mixture/None Assigned
Generic Name: Weather Coating
Formula: Mixture
Chemical Name: Mixture

Manufacturer Information

Industrial Insulation Group
2100 Line Street
Brunswick, GA 31520

Phone number for Health and Safety Information: 970.858.6211 (M-F, 7:00a.m. to 4:00p.m., Mountain Time)

Trade Name: Insulkote ET

Section 2 — Composition and Information on Ingredients

CAS #	Component	Percent	OSHA	ACGIH	NIOSH	UNITS
			PEL	TLV	REL	
7732-18-5	Water	<55	NE	NE	NE	
8052-42-4	Asphalt	<50	NE	0.5	NE	mg/M ³
1302-78-9	Aluminum Silicate	<10	NE	NE	NE	mg/M ³

NE = Not Established

ACGIH TLVs are 2006 values. OSHA PELs are those in effect on the date of preparation of this MSDS. The listed PELs, TVLs and RELs are time weighted average exposure limits.

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following:
Nuisance particulates not otherwise regulated.

Section 3 — Hazards Identification

Emergency Overview

APPEARANCE AND ODOR: Brown paste with slight hydrocarbon odor.

Under normal conditions of use, this product is not expected to create any unusual emergency hazards.

Skin irritation may be treated by gently washing affected area with soap and warm water.

Eye irritation may be treated by flushing eyes with large amounts of water. If irritation persists, contact a physician.

In the event of fire, use normal fire fighting procedures to prevent inhalation of smoke and gases

HMIS Rating: Health: 1, Fire: 0, Reactivity 0, Other: 0

WHMIS Class: Insulkote ET is not a WHMIS controlled product

Potential Health Effects

Summary

Inhalation of dust from this product is not likely to occur due to intended use and the product form.

Excessive skin and eye contact may cause irritation, and dryness.

Studies of workers exposed to asphalt fume have been classified as providing inadequate evidence of carcinogenicity.

Asphalt fume condensate skin painting studies on animals have shown tumor development.

Inhalation

Irritation of the upper respiratory tract (scratchy throat), coughing, and congestion may occur in extreme exposures.

Skin

Temporary irritation (itching) or redness may occur.

Absorption

Not applicable

Ingestion

This product is not intended to be ingested or eaten under normal conditions of use. If ingested, it may cause temporary irritation to the gastrointestinal (GI) tract, especially the stomach.

Eyes

Temporary irritation (itching) or redness may occur.

Target Organs

Upper respiratory passages, skin, and eyes.

Primary Routes of Entry (Exposure)

Inhalation, skin, and eye contact.

Medical Conditions Aggravated by Exposure

Pre-existing chronic respiratory, skin, or eye diseases or conditions.

Section 4 — First Aid Measures**First Aid: Inhalation**

Remove to fresh air. Drink water to clear throat. Blow nose to clear nasal passages. Administer artificial respiration or oxygen as necessary.

First Aid: Skin

Wash gently with soap and warm water to remove dust. Wash hands before eating or using the restroom.

First Aid: Ingestion

Product is not intended to be ingested or eaten. If this product is ingested, irritation of the gastrointestinal (GI) tract may occur, and should be treated symptomatically. Rinse mouth with water to remove fibers, and drink plenty of water to help reduce the irritation. No chronic effects are expected following ingestion.

First Aid: Eyes

Do not rub or scratch your eyes. Chemicals contained in this product are severe irritants. Flush eyes with large amounts of water for 5-15 minutes. If irritation persists, contact a medical professional.

First Aid: Notes to Physician

This product is a water based emulsion and is not expected to produce any chronic health effects from acute exposures. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.

Section 5 — Fire Fighting Measures

Flash Point: Not applicable
Upper Flammable Limit (UFL): Not applicable
Auto Ignition: Not determined
Rate of Burning: Not applicable

Method Used: Not applicable
Lower Flammable Limit (LFL): Not applicable
Flammability Classification: Non combustible

General Fire Hazards

Petroleum based compounds can float on water. Do not enter any enclosed or confined fire space without proper protective equipment, including self contained breathing apparatus.

Hazardous Combustion Products

Irritating and toxic gases or fumes may be released during a fire.

Extinguishing Media

DO NOT USE WATER. Carbon dioxide (CO₂), foam, water fog, dry chemical. Water should be used only to cool other materials that are in or near the fire.

Fire Fighting Equipment/Instructions

Firefighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.

Section 6 — Accidental Release Measures**Containment Procedures**

Take up with sand or other non-combustible, absorbent material. Clean spills in a well-ventilated area and shovel absorbed material into containers. Prevent spilled material from entering sewers or water sources.

exposures.

Clean-Up Procedures

Wastes are not hazardous as defined by the RCRA (40 CFR 261). Comply with state and local regulations for disposal of these products. If you are unsure of the regulations, contact your local Public Health Department, or the local office of the EPA.

Section 7 — Handling and Storage

Handling Procedures

Use protective equipment as described in Section 2 of this material safety data sheet when handling uncontained material. Good housekeeping practices should be used to prevent generation and accumulation of dusts. After handling product, wash face and hands before eating, drinking, or smoking.

Storage Procedures

Warehouse storage should be in accordance with package directions, if any. Material should be kept dry, and protected from the elements.

Section 8 — Exposure Control and Personal Protection

Personal Protective Equipment

Protective equipment should be used as necessary to prevent irritation of the throat, eyes, and skin, and to keep exposures below the applicable exposure limits identified in Section 2

Personal Protective Equipment: Eyes/Face

Safety glasses with side shields are recommended to keep dust out of the eyes.

Personal Protective Equipment: Skin

Leather or cotton gloves should be worn to prevent skin contact and irritation. Barrier creams may also be used to reduce skin contact and irritation.

Personal Protective Equipment: Respiratory

A respirator should be used if ventilation is unavailable, or is inadequate for keeping dust and fiber levels below the applicable exposure limits. In those cases, use a NIOSH-certified disposable or reusable particulate respirator with an efficiency rating of N95 or higher (under 42 CFR 84) when working with this product. For exposures up to five times the established exposure limits use a quarter-mask respirator, rated N95 or higher; and for exposures up to ten times the established exposure limits use a half-mask respirator (e.g., MSA's DM-11, Racal's Delta N95, 3M's 8210), rated N95 or higher.

Operations such as sawing, blowing, tear out, and spraying may generate airborne fiber concentrations requiring a higher level of respiratory protection. For exposures up to 50 times the established exposure limits use a full-face respirator, rated N99 or higher.

Ventilation

In fixed manufacturing settings, local exhaust ventilation should be provided at areas of cutting to remove airborne dust and fibers. General dilution ventilation should be provided as necessary to keep airborne dust and fibers below the applicable exposure limits and guidelines. The need for ventilation systems should be evaluated by a professional industrial hygienist, while the design of specific ventilation systems should be conducted by a professional engineer.

Personal Protective Equipment: General

Loose-fitting, long-sleeved clothing should be worn to protect the skin from irritation. Exposed skin areas should be washed with soap and warm water after handling.

Section 9 — Physical & Chemical Properties

Appearance:	Brown paste	pH:	7-10
Odor:	Hydrocarbon	Vapor Density:	Not applicable
Physical State:	Solid	Melting Point:	Not applicable
Vapor Pressure:	60mm Hg at 100°F	Specific Gravity:	>1
Boiling Point:	212°F	Freezing Point:	Not applicable
Solubility (H2O):	Miscible	Evaporation Rate:	Not applicable
Viscosity:	Not determined	Percent Volatile:	<55% (H ₂ O)
VOC:	<55%		

Section 10 — Chemical Stability & Reactivity Information

Chemical Stability

This is a stable material. This product is not reactive.

Incompatibility

Material is incompatible with strong oxidizers.

Hazardous Decomposition

Carbon monoxide, carbon dioxide, oxides of sulfur, water vapor, and miscellaneous hydrocarbons may be released under fire conditions.

Hazardous Polymerization

Will not occur.

Section 11 — Toxicological Information

Acute Toxicity

A: General Product Information

The primary acute health effects of this product include mechanical irritation of the skin and eyes and skin dryness as a result of contact with fumes and dust.

B: Component Analysis - LD50/LC50

No LD50/LC50's are available for this product or its components.

Carcinogenicity

A: General Product Information

OSHA, NTP, IARC, and ACGIH have not classified this product in its entirety as a carcinogen.

B: Component Carcinogenicity

Asphalt (8052-42-4)

ACGIH: A4 - Not Classifiable as a Human Carcinogen (Benzene-soluble aerosol)

IARC: Supplement 7, 1987; Monograph 35, 1985; (extracts of steam and air refined bitumens) (Group 2B (possibly carcinogenic to humans))

Chronic Toxicity

Asphalt: In 1994, IARC reconfirmed its earlier assessment that studies of workers exposed to asphalt provide inadequate evidence of carcinogenicity. IARC had previously classified asphalt as a Group 3 substance. Animal studies in which high concentrations of asphalt fumes were breathed for extended periods of time did not indicate any cancer effects. Bronchitis and pneumonitis were observed. Two studies where condensed fractions of certain asphalt fume condensates were repeatedly applied to the skin of laboratory animals reported the induction of skin cancers. The asphalt fume condensates collected for these studies were subjected to extremely high temperatures (316°C/601°F) and were heated for seven to ten hours while being continually stirred. This is not typical of any asphalt application. Trace amounts of polynuclear aromatic hydrocarbons (PAHs) may be present in some asphalts and can be generated upon excessive heating, which results in thermal cracking of the asphalt compounds. Some of these PAHs have been identified as having potential carcinogenic and reproductive health effects.

Section 12 — Ecological Information

Ecotoxicity

A: General Product Information

No data available for this product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Section 13 — Disposal Considerations

US EPA Waste Number & Descriptions

A: General Product Information

This product, as supplied, is not regulated as a hazardous waste by the EPA under RCRA regulations. Comply with state and local regulations for disposal. If you are unsure of the regulations, contact your local Public Health Department, or the local office of the EPA.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Section 14 — Transport Information

US DOT Information

Shipping Name: This product is not classified a hazardous material for transport.

Section 15 — Regulatory Information

US Federal Regulations

A: General Product Information

No information on this product as a whole.

B: Component Analysis

This material contains one chemical required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4); Potassium Dichromate (7778-50-9), CERCLA; Final RQ=10 pounds (4.54 kg)

State Regulations

A: General Product Information

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): WARNING! This product contains a chemical known to the state of California to cause cancer.

Other Regulatory Information

A: General Product Information

No information available for the product.

B: TSCA Status

This product and its components are listed on the TSCA 8(b) inventory.

International Regulations

Canada Workplace Hazardous Materials Information System (WHMIS)

WHMIS Classification: D2B— Irritant

Component Analysis - WHMIS IDL

This product and its components are not listed in the WHMIS IDL

Section 16 — Other Information

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Key/Legend:

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; NFPA = National Fire Protection Association; HMIS = Hazardous Material Identification System; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act; DSL = Canadian Domestic Substance List; EINECS = European Inventory of New and Existing Chemical Substances; WHMIS = Workplace Hazardous Materials Information System; CAA = Clean Air Act; CHPA = Canadian Hazardous Product Act; IDL = Canadian Hazardous Disclosure List

Revision Summary:

This is a revised MSDS which replaces version 1.0.2 with a new date. Get this and other MSDS forms electronically via Internet: <http://www.iig-llc.com> or by calling 800-866-3234.

As of the date of preparation of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state law(s). However, no warranty or representation with respect to such information is intended or given.

Prepared by IIG Technical Services

IMPORTANT SAFETY NOTICE: The information in this MSDS relates only to the specific material described herein and does not relate to use in combination with any other material or substance or in any process. Because of the use of this information and the conditions of use of this product are not within the control of Industrial Insulation Group, it is the users obligation to determine the conditions of safe use of this product. Users of this product should study this MSDS and become aware of the product hazards and safety information before using this product. Users should also notify their employees, agents, and contractors regarding information contained in this MSDS and any product hazards and safety information in order to provide for safe use of this product.

SAFETY DATA SHEET

SECTION 1 — IDENTIFICATION

Manufacturer's name and address:



K-FLEX USA

K-FLEX USA
100 Nomaco Drive
Youngsville, NC 27596
USA

Supplier's name and address:

Refer to Manufacturer

Information Telephone No.	:	(800) 765-6475	
Website Address	:	http://www.kflexusa.com	
24 Hr Emergency Telephone #	:	CHEM-TREC: 1-800-424-9300	
Product Identifier	:	KFLEX® 373 Adhesive	
Chemical Name	:	N/Ap	Chemical Family : Mixture
Chemical Formula	:	N/Ap	Trade Name/Synonyms : K-FLEX 373
Molecular Weight	:	N/Ap	Material Use : Neoprene contact adhesive.

SECTION 2 — HAZARDS IDENTIFICATION

GHS Classification per 29CFR 1910 (OSHA Hazard Communication Standard)

Flammable liquids; Category 2
Aspiration hazard; Category 1
Skin corrosion/irritation; Category 2
Serious eye damage/eye irritation; Category 2A
Sensitization, Skin; Category 1
Specific target organ toxicity, single exposure; Narcotic effects; Category 3
Reproductive toxicity; Category 2
Specific target organ toxicity, repeated exposure; Category 2
Hazardous to the aquatic environment, long-term hazard, Category 2

WHMIS Classification

Class B2 — Flammable Liquid;
Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material);
Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

GHS Pictograms



Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
May be fatal if swallowed and enters airways.
Causes skin and serious eye irritation.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.
Suspected of damaging fertility or the unborn child.
May cause damage to organs <Central nervous system, kidneys, liver>
through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects.

Precautionary Statements

Obtain special instructions before use. (See Section 7.) Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/.../equipment. Use only non-sparking tools. Take precautionary measures against static discharge. In case of fire: Use fire extinguishers suitable for Classes B, C, or E for extinction. Do not breathe vapors. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection. Wash hands and exposed skin thoroughly after handling. Wash contaminated clothing before reuse. Avoid release to the environment. Collect spillage. Hazardous to the aquatic environment. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents / container in accordance with federal, state, and local laws. Do not allow product to enter drains.

Hazards Not Otherwise Classified

Vapor may cause flash fire! May be an aspiration hazard.

% With Unknown Acute Toxicity : 6% by weight of this product is comprised of ingredients with unknown acute toxicity.

HMIS Rating

: * - Chronic Hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
Health: *2 Flammability 3 Reactivity 0

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (by weight)
Acetone	67-64-1	30.00 – 60.00
Hexanes	110-54-3	10.00 – 30.00
Toluene	108-88-3	10.00 – 30.00
Phenolic resin	25085-50-1	5.00 – 10.00

The exact percentages of the ingredients have been withheld by the manufacturer as trade secrets.

SECTION 4 – FIRST AID MEASURES

General

: IF exposed or concerned: Get medical advice/attention.

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: call a doctor/physician.

Skin contact

: Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice.

Eye contact

: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

Ingestion

: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

Notes for Physician

: Treat symptomatically.

Signs and symptoms of short-term (acute) exposure

Inhalation

: May cause irritation to the nose, throat, and respiratory tract. Inhalation of high concentrations may cause CNS effects such as nausea, headache, dizziness, fatigue, unconsciousness, and coma. May cause motor incoordination and speech abnormalities. Breathing high concentrations of this material, for example in an enclosed space or by intentional abuse, can cause irregular heartbeats which can cause death.

- Skin** : May cause moderate skin irritation. Product may be absorbed through the skin, producing effects similar to inhalation or ingestion. Allergic skin reaction: Symptoms may include redness, swelling, blistering, and itching.
- Eyes** : Direct contact will cause moderate to severe irritation to the eyes. Symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Ingestion** : May cause irritation to the mouth, throat, and stomach. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea. This material can get into the lungs (aspiration) during swallowing or vomiting. Small amounts in the lungs can cause chemical pneumonitis, possibly leading to chronic lung dysfunction or death.

Effects of long-term (chronic) exposure

- : Chronic exposure may cause drying, cracking, and defatting of the skin. Chronic effects of ingestion and subsequent aspiration into the lungs may cause pneumatocele (lung cavity) formation and chronic lung dysfunction. Prolonged occupational overexposure to solvents may cause irreversible brain and nervous system damage (sometimes referred to as "Solvent or Painter's Syndrome"). Intentional misuse by intentionally concentrating and inhaling the vapors from this product may be harmful or fatal. Toluene, a component of this product, may cause harm to the human fetus, based on tests with laboratory animals. Long term overexposure to Toluene has been associated with peripheral neuropathy (damage to the nerves of the hands and feet), liver effects, kidney effects, impaired color vision and hearing damage.

Indication of need for immediate medical attention or special treatment

- : Difficulty breathing persists after removing the person to fresh air.
Any exposure to the eye which causes irritation.
Ingestion.

SECTION 5 – FIRE FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide, dry chemical powder, appropriate foam or water fog.

Unsuitable extinguishing media : water jet

Hazardous combustion products : Carbon oxides; Hydrocarbons; Aldehydes; Hydrogen chloride gas; other unidentified organic compounds.

Special fire-fighting procedures/equipment

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. After fires have been extinguished, carefully clean all equipment and surfaces exposed to fumes.

Environmental precautions : Avoid release to the environment. Collect spillage. Hazardous to the aquatic environment. Do not allow material to enter drains or contaminate ground water system.

Fire hazards/conditions of flammability

- : Highly flammable liquid. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapors may be heavier than air and may collect in confined and low-lying areas. Vapor can travel considerable distance and flashback to a source of ignition. Material will float on water and can be re-ignited at the water's surface. Static discharge may ignite this product's vapors.

Flammability classification (OSHA 29 CFR 1910.1200)

- : Flammable Liquid, Category 2.

Flammability classification (WHMIS)

- : Flammable Liquid Class B2.

Flammability classification (NFPA)

- : Flammable Liquid Class 1B.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Restrict access to area until completion of clean-up. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to Section 8 on this Safety Data Sheet, EXPOSURE CONTROLS / PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.
- Environmental precautions** : Avoid release to the environment. Collect spillage. Hazardous to the aquatic environment. Do not allow product to enter waterways. Do not allow material to contaminate ground water system.
- Spill response / clean-up** : Ventilate area of release. Eliminate all ignition sources. Stop spill or leak at source if safely possible. Use non-sparking tools to contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g., sand), then place absorbent material into a container for later disposal (see Section 13). Do not flush into surface water or sanitary sewer system. Notify the appropriate authorities as required.
- Incompatible materials** : See Section 10.
- Special spill response procedures** : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).
US CERCLA Reportable quantity (RQ): Hexane (5000 lbs / 2270 kg); Acetone (5000 lbs / 2270 kg); Toluene (1000 lbs / 454 kg).

SECTION 7 – HANDLING AND STORAGE

- Special Instructions** : HIGHLY FLAMMABLE LIQUID AND VAPOR. May cause flash fire. Keep away from fire, sources of heat, or sources of electrical discharges. Aspiration Hazard – may enter lungs and cause damage. If ingested, do not induce vomiting. Inhaling fumes may cause dizziness, drowsiness, nausea, headaches, and/or other Central Nervous System (CNS) symptoms. Contains a material that may cause peripheral nervous system damage. Breathing high concentrations can cause irregular heartbeats which may be fatal. Developmental hazard - Contains Toluene, which may cause birth defects or other reproductive harm. Avoid breathing vapors.
- Safe handling procedures** : Wear chemically resistant protective equipment during handling. Use in a well-ventilated area. Training the workers on the potential health hazards associated with product vapor is important. Do not breathe vapors. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Keep away from oxidizing materials. Keep containers tightly closed when not in use. Wash hands and exposed skin thoroughly after handling. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid).
- Storage requirements** : Store in a cool, dry, well-ventilated area. No smoking in the area. Do not store near any incompatible materials (see Section 10). Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Protect against physical damage.
- Incompatible materials** : See Section 10.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Permissible exposure levels** : No exposure limits have been established for the product itself. Below are exposure limits for the components in the product.

Ingredients	CAS #	ACGIH TLV		OSHA PEL	
		TWA	STEL	PEL	STEL
Acetone	67-64-1	500 ppm	750 ppm	1000 ppm TWA 2400 mg/m ³ TWA	N/Av
Hexanes	110-54-3	50 ppm	N/Av	500 ppm 1800 mg/m ³	N/Av
Toluene	108-88-3	20 ppm	N/Av	200 ppm	300 ppm (10 min)
p-tert-Butylphenol formaldehyde resin	25085-50-1	N/Av	N/Av	N/Av	N/Av

Ventilation and engineering measures

: Use with adequate ventilation. Provide adequate cross air circulation. Use explosion-proof general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. If the TLV is exceeded, wear a NIOSH/MSHA-approved respirator with organic vapor cartridges.

Skin protection

: Impervious gloves must be worn when using this product. Glove materials such as nitrile rubber or Viton (fluorocarbon rubber) are recommended. Advice should be sought from glove suppliers regarding the glove's breakthrough time for the ingredients listed in Section 3.

Eye / face protection

: Chemical goggles are recommended. A full face shield may also be necessary.

Other protective equipment

: Full chemical-resistant protective clothing should be used whenever splashing is anticipated. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

: Avoid contact with eyes, skin and clothing. Do not breathe vapors. Do not eat, drink or smoke when using this product. Clean all equipment and clothing, and shower with mild soap and water at end of each work shift.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid	Appearance	: blue liquid.
Odor	: Characteristic solvent odor		
Odor threshold	: N/Av	pH	: N/Av
Specific gravity	: 0.83	Boiling point	: > 133°F (>56.5°C)
Coefficient of water/oil distribution	: N/Av	Melting/Freezing point	: N/Av
Solubility in water	: negligible	Vapor pressure (mm Hg @ 20°C / 68°F)	: 180
Evaporation rate (n-Butyl acetate = 1)	: N/Av	Vapor density (Air = 1)	: N/Av
Volatiles (% by weight)	: 80 – 82	General information	: N/Av
Volatile organic compounds (VOCs)	: 615 g/L (Calculated, SCAQMD Rule 1168)		
Particle size	: N/Av	Flammability classification (GHS)	: Flammable Liquid Cat. 2
Flash point	: -15°F (-26°C)	Lower flammable limit (% by vol)	: Not available
Flash point method	: Setflash closed	Upper flammable limit (% by vol)	: Not available
Auto-ignition temperature	: N/Av	Decomposition temperature	: Not available
Viscosity	: Not available	Oxidizing properties	: Not available
Explosion data: Sensitivity to mechanical impact / static discharge			
	: Static discharge could ignite the vapors of this product. Not expected to be sensitive to mechanical impact.		

SECTION 10 – REACTIVITY AND STABILITY INFORMATION

Stability and reactivity	: Stable under the recommended storage and handling conditions prescribed.
Hazardous polymerization	: Hazardous polymerization does not occur.

- Conditions to avoid** : Keep this product away from heat, sparks, flame, and other sources of ignition (e.g., pilot lights, electric motors, static electricity).
- Materials to avoid and incompatibility** : Strong oxidizing agents; Reducing agents; Acids, Bases.
- Hazardous decomposition products** : None known, refer to hazardous combustion products in Section 5.

SECTION 11 – TOXICOLOGICAL INFORMATION

- Target organs** : Central Nervous System (CNS); Eyes; Skin; Kidneys; Lungs; Liver; Heart.
- Routes of Exposure** : *Inhalation*: YES *Skin Absorption*: YES *Skin and Eyes*: YES *Ingestion*: YES
- Toxicological data** : See below for individual ingredient acute toxicity data.

Ingredients		LC50 (4 hr)	LD50	
		Inhalation, rat, mg/L	Oral, rat, mg/kg	Dermal, rabbit, mg/kg
Acetone	67-64-1	50.1	5800	20000
Hexane	110-54-3	31.86	16000	> 2000
Toluene	108-88-3	28.1	5580	> 5000
p-tert-Butylphenol formaldehyde resin	25085-50-1	N/Av	N/Av	N/Av

Calculated Acute Toxicity Estimates for the Product

- Inhalation* : > 35 mg/L
- Oral* : > 8000 mg/kg
- Dermal* : > 5000 mg/kg

- Carcinogenic status** : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
- Reproductive effects** : Contains Toluene. Toluene may cause fetotoxic effects at doses which are not maternally toxic, based on animal data.

Germ Cell Mutagenicity

Mutagenicity Test	Acetone	Hexane	Toluene
Ames Test	N/Av	Negative	N/Av
Dominant Lethal Assay, mouse, male Exposure: Inhalation 6h/d, 5 d/wk for 8 wks	N/Av	Negative	Negative
Mammalian cell gene mutation assay, mouse lymphoma cells	N/Av	N/Av	Negative
Chromosome aberration assay in vivo, rat bone marrow, Intraperitoneal	N/Av	N/Av	Negative
Germ Cell Mutagenicity Assessment	N/Av	Not Mutagenic	Not Mutagenic

- Epidemiology** : Not available.
- Sensitization to material** : This product contains a component known to cause allergic skin sensitization reactions.
- Synergistic materials** : N/Av
- Irritancy** : Severe eye irritant. Moderate irritant for respiratory system and skin.
- Other important hazards** : See Section 2 for additional information.

SECTION 12 – ECOLOGICAL INFORMATION

- Environmental effects** : The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.
- Important environmental characteristics**

Ecotoxicological	: No data is available on the product itself.
Ecotoxicity	: No data is available on the product itself. : Both Toluene and Hexane have been assessed to be toxic to aquatic life. Hexane has been assessed to be toxic to aquatic life with long lasting effects. Acetone is not expected to be toxic to aquatic life. Acetone's LC50/96-hour test results are > 100 mg/L.
Component	: Toluene
Toxicity to fish	: 96 h LC50 (Oncorhynchus kisutch (coho salmon)): 5.5 mg/L
Toxicity to invertebrates	: 48 h EC50 (Ceriodaphnia dubia): 3.78 mg/L
Toxicity to algae	: 3 h EC50 (Chlorella vulgaris (Fresh water algae)): 134 mg/L
Toxicity to bacteria	: 24 h IC50 (Bacteria): 84 mg/L
Component	: Hexane
Toxicity to fish	: 96 h LC50 (Pimephales promelas (fathead minnow)): 2.5 mg/L
Toxicity to invertebrates	: 48 h EC50 (Daphnia magna (water flea)): 2.1 mg/L
Toxicity to algae	: 72 h EbL50 (Pseudokirchneriella subcapitata (green algae)): 26 mg/L
Biodegradability	: Acetone : N/Av Readily biodegradable Hexane : 83 % Readily biodegradable Toluene : 100% Readily biodegradable
Bioaccumulative potential	: Acetone : Not expected to bioaccumulate. Hexane : log Pow: 3.90 – 4.11 Toluene : log Pow: 2.73
Mobility in soil	: No data available.
PBT and vPvB assessment	: No data available.
Other adverse effects	: No data available.

SECTION 13 – DISPOSAL CONSIDERATION

Handling for disposal	: Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapor) and can be dangerous. Do not cut, weld, drill or grind on or near this container.
Methods of disposal	: Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
RCRA	: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 – TRANSPORTATION INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
TDG Additional Information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to TDG Part 1: 1.11, 1.17, 1.33; and Schedule 1.				
49 CFR/DOT	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
49 CFR/DOT Additional Information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to 49 CFR 173.150(b) and Special Provision 149.				

SECTION 15 – REGULATORY INFORMATION

Canadian Information:

Canadian WHMIS Classification: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Controlled Products Regulations (CPR). Refer to Section 2 for a WHMIS Classification for this product.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Canadian Environmental Protection Act (CEPA) Information: All ingredients listed appear on the Domestic Substances List (DSL). The following components are listed on the Canadian Ingredient Disclosure List (IDL): Acetone, Hexane, Toluene.

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): Hexane (5000 lbs / 2270 kg); Acetone (5000 lbs / 2270 kg); Toluene (1000 lbs / 454 kg).

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes:

Acute hazard

Chronic hazard.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above de minimus concentrations. This product contains: Hexane; Toluene.

U.S. State Right To Know Laws

California Proposition 65: Warning! This product contains a chemical known to the State of California to cause developmental harm. This product contains: Toluene.

Other State Right to Know Laws:

On State RTK List?	CAS No.	CA	MA	MN	NJ	NY	PA	RI
Acetone	67-64-1	YES	YES	YES	YES	YES	YES	YES
Hexane	110-54-3	YES	YES	YES	YES	YES	YES	YES
Toluene	108-88-3	YES	YES	YES	YES	YES	YES	YES

SECTION 16 - OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CNS: Central Nervous System
DOT: Department of Transportation
DSL: Domestic Substances List
EPA: Environmental Protection Agency
GHS: Globally Harmonized System
IARC: International Agency for Research on Cancer
IDL: Ingredient Disclosure List
Inh: Inhalation
N/Av: Not Available
N/Ap: Not Applicable
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
SARA: Superfund Amendments and Reauthorization Act

STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Disclaimer of Liability

The Information presented herein is supplied as a guide to those who handle or use this product and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive. The manner and conditions of use and handling may involve other and additional considerations. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.

No warranty of any kind is given or implied. K-FLEX USA will not be liable for any damages, losses, injuries or consequential damages which may result from the use or reliance on any information contained herein. This Safety Data Sheet is valid for three (3) years.

Prepared By:

K-FLEX USA
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Youngsville, NC 27596
USA

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Visit our Website at

: <http://www.kflexusa.com>

Revision date:

: 19-Nov-2014

End of Document



SECTION 1 – IDENTIFICATION

Product Name: PITTCOTE® 404 COATING

Manufacturer/Supplier:

Pittsburgh Coming Corporation

800 Presque Isle Drive

Pittsburgh, PA 15239

Information Number: 724-327-6100

CHEMTREC: 800/424-9300

Generic Name: Acrylic latex mastic

Use: PITTCOTE® 404 coating is a highly flexible, acrylic latex coating used with FOAMGLAS® insulation where a superior weather barrier coating is required.

Chemical Family: Mixture

General Comments: General information and emergency information available 8:00 AM – 5:00 PM Monday through Friday.

CHEMTREC telephone number is to be used only in the event of chemical transportation emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to technical service.

SECTION 2 – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION: Potential Irritant

SIGNAL WORD: **WARNING**

HAZARD STATEMENT: May cause mild skin irritation
Can cause mild eye irritation
Wear eye protection, protective clothing, and protective gloves.
Avoid breathing sprayed material mists! Use an approved dust or particulate air filter when in close proximity of spraying of coating!



HAZARDOUS POLYMERIZATION: Will Not Occur

ROUTES OF EXPOSURE: Inhalation, Skin, Eyes, and Ingestion.

IMMEDIATE EFFECTS:

INHALATION: May cause mild irritation to mucus membranes and respiratory tract in poorly ventilated areas.

SKIN CONTACT: Repeated or prolonged contact with emulsion may cause mild skin irritation.

EYE CONTACT: Direct contact with eyes may cause mild irritation

INGESTION: Due to nature of product ingestion is not likely. If ingested, see physician

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

ACUTE: Inhalation – may cause respiratory, eye, or nose irritation tract in poorly ventilated areas.

CHRONIC: Inhalation – May cause mild irritation to mucus membranes and respiratory tract in poorly ventilated areas.

CARCINOGENICITY: There are no components in this product that are listed as a carcinogen by NTP, IARC, ACGIH or OSHA.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	App. % by Wt.	CAS #
Acrylic polymer emulsion	38 - 41	Proprietary
Alumina trihydrate	31 - 33	21645-51-2
Water	12-14	7732-18-5
Calcium Carbonate	3 - 8	1317-65-3

SECTION 4 – FIRST AID MEASURES

GENERAL ADVICE: Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. If PITTCOTE® 404 coating comes into contact with skin or hair, wash coating from area immediately. If skin irritation occurs, apply non-irritating skin cream and see physician if irritation continues for more than 2 days.

INHALATION: Remove victim to fresh air. If irritation develops, get medical attention.

SKIN CONTACT: Wash skin with soap and water. If irritation develops, get medical attention

EYE CONTACT: Remove contact lenses. Flush eyes with large amounts of water, preferably lukewarm water, for at least 15 minutes. Avoid rubbing eyes. Get medical attention.

INGESTION: Due to nature of product ingestion is not likely. If oral contact occurs, do not swallow. If swallowed, see physician immediately. Rinse mouth until free of contaminating material. Drink water 16 oz. of water to dilute swallowed material.

SECTION 5 – FIRE FIGHTING MEASURES

This material is 40% water and is not likely to cause or contribute to a fire while wet. When dry, PITTCOTE® 404 coating is fire retardant and is not likely to greatly contribute to a fire. If the material does burn, use normal fire-fighting methods, water and carbon dioxide to control fire.

SUITABLE EXTINGUISHING MEDIA: Water, Foam, Carbon Dioxide, or dry chemical.

EXPLOSION DATA:

SENSITIVITY TO MECHANICAL IMPACT: NA
SENSITIVITY TO STATIC DISCHARGE: NA

**UNUSUAL FIRE AND EXPLOSION
HAZARDS:**

None

**HAZARDOUS COMBUSTION
PRODUCTS:**

Combustion may produce carbon monoxide, carbon dioxide and small amounts of hydrogen chloride.

SPECIAL FIRE FIGHTING MEASURES:

Wear self-contained breathing apparatus and protective clothing.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

**PRECAUTIONS FOR
PERSONNEL:**

Ventilate area if necessary. Wear proper protective clothing including gloves. Wear personal protective equipment. Refer to recommendations in section 8. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling and before eating or drinking.

**ENVIRONMENTAL
PRECAUTIONS:**

Prevent material from entering sewers or waterways. Dike and cover spill with sand, earth, vermiculite or other non-combustible absorbent. Place material in water-resistant container.

**PROCESS FOR
CLEANING:**

Clean up residual material before it dries with soap and water.

**WASTE DISPOSAL
METHOD:**

Dispose of in accordance with local, state and federal regulations.

**REGULATORY
REQUIREMENTS:**

Follow applicable OSHA regulations (29 CFR 1910.120).

SECTION 7 – HANDLING AND STORAGE

HANDLING: Use rubber gloves and protective glasses to protect against prolonged skin exposure and splashing into eyes. Wear particulate matter mask when spraying or when in close proximity to spray area.

STORAGE: Store above 32°F (0°C). Do not allow this material to freeze while in a liquid state. Freezing will damage the polymer emulsion and may make it unusable for its intended purpose. This material will begin to freeze at 31°F (-5.6°C). Do not store in steel drums for more than 3 years without examining the container for corrosion. Corrosion may cause a weakness in the steel container or a leak of the material through the container. If a leak is found, stop leak and transfer to a new container.

KEEP AWAY FROM CHILDREN

SECTION 8 – EXPOSURE RESTRICTIONS AND PERSONAL PROTECTION
EXPOSURE LIMITS

Ingredient	App. % by Vol.	TLV	NIOSH REL TWA	PEL	CAS #
Acrylic polymer emulsion	38 - 41	NE	NE	NE	Proprietary
Alumina trihydrate	31 - 33	2 mg(Al)/m ³	NE	10 mg/m ³ (TD)	21645-51-2
Water	12-14	NE	NE	NE	7732-18-5
Calcium Carbonate	3 - 8	10 mg/m ³ (ND)	UN	15 mg/m ³ (TD) 5 mg/m ³ (RF)	1317-65-3

EXPOSURE GUIDELINES: Toxicity is of this material low, although there are no tests determining or quantifying the level of toxicity of this material. The conclusion of low toxicity is determined by studying the ingredients, their toxicity and amount used in this formula.

ENGINEERING CONTROLS: Local exhaust if needed.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Wear protective Chemical goggles or safety glasses

SKIN PROTECTION: Wear proper protective clothing and equipment including gloves.

**RESPIRATORY
PROTECTION:** a particulate matter mask when spraying or when in close proximity to spray area.

**ENVIRONMENTAL EXPOSURE
CONTROL:**

Provide exhaust ventilation or other engineering controls while spraying, to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits indicated.

WORK/HYGIENIC PRACTICES: Avoid contact with eyes and skin. Wash thoroughly after handling and before eating or drinking.

SPECIAL PRECAUTIONS: Follow protective controls listed in the Exposure Guidelines above when handling these products.

SECTION 9 – PHYSICAL PROPERTIES

Appearance:	Thick white liquid	Flash Point : °C (°F) TCC	NA
Odor:	Mild ammonia odor with mild sweet odors.	Ignition Temperature: °C (°F)	NE
Odor Threshold:	UN	Evaporation Rate (BuAC=1)	2.4
pH	7.5 - 8.5	Flammability:	Non-Flammable
Melting Point/Freezing Point: °C (°F)	-5.6° (31) liquid	Flammable Limits: LEL	NE
		UEL	NE
Boiling Point: °C (°F)	100 (212)	Vapor Pressure: (mm Hg @ 20°C, 68°F)	UN
Solubility in Water:	Dispersible	Vapor Density: (Air = 1)	Lighter than Air
Partition Coefficient: n-octanol/water:	UN	Specific Gravity: (H ₂ O = 1):	1.35 – 1.38 @ 25°C (77°F)
Viscosity	UN	Density: lbs./gal	11.2 – 11.4
VOC: g/l (lbs./gal)	≤ 5 (≤0.04)	Evaporation Rate: (BuAC=1)	Same as Water
		Percent Volatile By Volume: (%)	45

SECTION 10 – STABILITY AND REACTIVITY

REACTIVITY:	Stable
STABILITY:	Stable at standard temperature and pressure.
POSSIBILITY OF HAZARDOUS REACTIONS:	Hazardous polymerization will not occur.
CONDITIONS TO AVOID:	Temperatures below 0°C (32°F) or above 100°C (212°F)
MATERIALS TO AVOID:	None known
DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide and hydrochloric acid may be released or formed as this product burns and decomposes.

SECTION 11 – TOXICOLOGICAL INFORMATION

CAS #	INGREDIENT	DERMAL LD50		INHALATION LD50	ORAL LD50
Proprietary	Acrylic polymer emulsion	UN		UN	UN
21645-51-2	Alumina trihydrate	UN		UN	UN
7732-18-5	Water	UN		UN	UN
1317-65-3	Calcium Carbonate	UN		UN	UN

CAS #	INGREDIENT	CARCINOGENICITY ACGIH IARC		TERATOGENICITY	MUTAGENICITY
Proprietary	Acrylic polymer emulsion	NE	NE	NE	NE
21645-51-2	Alumina trihydrate	UN	UN	UN	UN
7732-18-5	Water	No	No	No	No
1317-65-3	Calcium Carbonate	UN	UN	UN	UN

This product contains no material in sufficient quantity to qualify as a health hazard or toxicological hazard.

SECTION 12 – ECOLOGICAL INFORMATION

BIODEGRADATION: NA.
BIOACCUMULATION: NA
AQUATIC TOXICITY: NA

OTHER INFORMATION: This material does not constitute a negative ecological or environmental problem as a dry product. As a liquid, this material is a low toxicity contaminant to bodies of water with which it has contact. Allow empty containers to dry.

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Liquid material may be mixed with absorbent medium such as cat litter or calcium carbonate or saw dust to congeal and dry emulsion before disposal. Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations. EPA Hazardous Waste Number: D001 (Ignitability).

SECTION 14 – TRANSPORT INFORMATION

SPECIAL SHIPPING INFORMATION: Latex paints are not considered a hazardous material and are not subject to a hazard classification for shipping or transportation.

DOT SHIPPING CLASS: Not Regulated
TDG Not Regulated
IATA Not Regulated

SECTION 15 – REGULATORY INFORMATION

US Regulatory Information

OSHA 29 CFR 1910-1200 None
TSCA All components of this product are listed on TSCA Inventory

SARA Title III:

 SARA SECTION 302: None
 SARA SECTION 304: NA
 SARA (311,312) HAZARD CLASS: Non-Hazardous
 SARA (313) CHEMICALS: None

CERCLA: None
RCRA: Refer to section 13
CPSC CLASSIFICATION: NA

HMIS: FLAMMABILITY: 0 REACTIVITY: 0 HEALTH: 1

NFPA: FLAMMABILITY: 0 REACTIVITY: 0 HEALTH: 1

WHMIS CLASSIFICATION: Non-Hazardous

CALIFORNIA PROPOSITION 65:

- ☐ A. This product contains a chemical known to the State of CA to cause birth defects or other reproductive harm.
- ☐ B. This product contains a chemical known to the State of CA to cause cancer.
- ☐ C. This product contains a chemical known to the State of CA to cause cancer and birth defects or other reproductive harm.

SECTION 16 – OTHER INFORMATION

Prepared in accordance with 29 CFR 1910.1200

This Product has been classified in accordance with the hazard criteria of the Controlled Products

NA = not applicable

NE = not established

UN = unavailable

CL = Ceiling Limit

NEGL = Negligible

PROP. = Proprietary

"THE DATA INCLUDED HEREIN ARE PRESENTED IN ACCORDANCE WITH THE VARIOUS ENVIRONMENT, HEALTH AND SAFETY REGULATIONS. IT IS THE RESPONSIBILITY OF A RECIPIENT OF THIS DATA TO REMAIN CURRENTLY INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS OWN PROGRAM AND TO COMPLY WITH ALL NATIONAL, FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS APPLICABLE TO SAFETY, OCCUPATIONAL HEALTH, RIGHT-TO-KNOW AND ENVIRONMENTAL PROTECTION."

WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE, PITTSBURGH CORNING MAKES NO WARRANTY WITH RESPECT THERETO, AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

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SAFETY DATA SHEET, revised Dec 1, 2014

A-300CL PVC Adhesive Clear**1. PRODUCT AND COMPANY INFORMATION**

Trade name PVC Adhesive Clear
Product codes ZGA-300CL, A300CL
Chemical family Resin solution
Intended use Adhesive for welding of PVC
Company Colorado Paint (a Swarco Company)
4747 Holly Street
Denver, CO 80216; U. S. A.
Telephone +1 303-388-9265
Web site www.swarco.com/americas
Emergency (Chemtrec; 24 h) 1-800-424-9300 (U. S. A. and Canada)

2. HAZARD IDENTIFICATION**Emergency Overview****OSHA Hazards**

Flammable Liquid, Target Organ Effect, Irritant

Target Organs

Central nervous system, Liver, Kidney.

GHS Classification

Flammable liquids (Category 2)

Acute toxicity, Oral (Category 4)

Acute toxicity, Inhalation (Category 5)

Skin irritation (Category 2)

Eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictograms:

Signal word: Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H302 + H333 Harmful if swallowed or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 + H336 May cause respiratory irritation, dizziness, and drowsiness.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

A-300CL PVC Adhesive Clear**HMIS and NFPA Classification:**

	HMIS	NFPA Hazard
Health	2	2
Chronic health hazard	*	--
Flammability	3	3
Reactivity / Physical hazard	--	0
Physical hazard	3	--

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

3. COMPOSITION

Name	Synonym	CAS	EINECS	Index	Concentration
Tetrahydrofuran	THF, Oxolane	109-99-9	203-726-8	603-025-00-0	40-55%
Poly(vinyl chloride) resin	Modified PVC polymer	Proprietary mixture	n/a	n/a	20-35%
Methyl Ethyl Ketone	Butanone-2	78-93-3	201-159-0	606-021-00-7	1-5%

4. FIRST AID MEASURES**General advice**

Consult a physician. Show this Material Safety Data Sheet to the attending doctor.

If inhaled

Move person to fresh air. If not breathing, give artificial respiration. Obtain proper medical attention.

If on skin

Wash off with soap and water. Consult a physician if needed.

In case of an eye contact

Rinse thoroughly with plenty of water for at least 15 minutes. Seek medical attention.

If swallowed

Do not induce vomiting. Rinse mouth with water. Seek immediate medical attention.

Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

5. FIRE FIGHTING MEASURES**Suitable extinguishing media**

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide.

For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire fighters

Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NO_x), chlorinated compounds.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate unnecessary personnel to safe areas. Beware of vapors accumulating to form explosive concentrations.

SAFETY DATA SHEET, revised Dec 1, 2014

A-300CL PVC Adhesive Clear**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with electrically protected equipment and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition – NO SMOKING. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature is 10-25 °C.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**Occupational exposure limits**

Name	CAS	OSHA TLV ⁽¹⁾	ACGIH TLV ⁽²⁾	NIOSH PEL ⁽³⁾	OSHA STEL ⁽⁴⁾	EU ⁽⁵⁾
Methyl ethyl ketone	78-93-3	590	590	590	885	600
Upper Respiratory Tract irritation. Central Nervous System and Peripheral Nervous System impairment. Substance for which there is a Biological Exposure Index.						
Poly(Vinyl chloride) resin	Proprietary mixture	n/a	n/a	n/a	n/a	n/a
No occupational exposure limits have been established. Per manufacturer, the resin is 'not hazardous and toxic chemical'.						
Tetrahydrofuran	109-99-9	590	147	735	735	150
Can be absorbed through skin. There are concerns that dermal absorption will lead to systemic toxicity. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhoea. Central Nervous System impairment. Upper Respiratory Tract irritation. Kidney damage. Confirmed animal carcinogen with unknown relevance to humans. The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histological type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.						

(1) Occupational Safety and Health Administration (OSHA); Threshold Limit Value (8-hour time-weighted average) pursuant to (a) for general industry: 29 CFR 1910.1000 Table Z-1, (b) for construction industry: 29 CFR 1926.55 Appendix A, and (c) for maritime industry: 29 CFR 1915.1000 Table Z. (2) American Conference of Governmental Industrial Hygienists; Threshold Limit Value. (3) National Institute for Occupational Safety and Health; Recommended Exposure Limit. (4) OSHA Short Term Exposure Limit (STEL). (5) European Union exposure limit per Directive 98/24/EC, as amended or UK EH40 Occupational Exposure Limit.

Ventilation

Use only where adequate ventilation can be maintained. Use explosion-proof exhaust fans when the product is used in enclosed areas.

Personal protective equipment**Respiratory protection**

A full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges are recommended as a backup to engineering controls.

Hand protection

Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good work hygiene practices. The selected protective gloves have to satisfy the specifications of the standard EN 374.

A-300CL PVC Adhesive Clear**Eye protection**

Safety glasses with side shields are required. Face shield are recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Wear impervious, flame retardant antistatic protective clothing.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash your hands thoroughly. Never intentionally inhale the contents. Use only for the intended purpose.

9. PHYSICAL PROPERTIES**Appearance**

Physical state Liquid
Color Clear, hazy
Odor Strong, irritating, characteristic of tetrahydrofuran

Safety data

Boiling point >60 °C (solvent data)
Freezing point Not available
Flash point >-17 °C (solvent data)
Upper explosion limit 1.8 vol% (solvent data)
Lower explosion limit 11.8 vol% (solvent data)
Solubility in water Solvent are soluble
Vapor pressure 213.3 hPa at 25 °C (solvent data)
Density 0.8-1.1 g·cm⁻³ at 25 °C
Viscosity 70-95 KU (Stormer, at 25 °C)
pH Not applicable

10. STABILITY AND REACTIVITY DATA**Chemical stability**

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, and sparks. Extremes of temperature and direct sunlight.

Materials to avoid

Bases, strong acids, oxidizing agents, reducing agents, phosphorous oxychloride.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NO_x).

11. TOXICOLOGICAL DATA**Acute toxicity**

Name	NIOSH IDLH (mg/m ³)	Oral LD ₅₀ (mg/kg) rat	Inhalation LC ₅₀ (rat)	Dermal LD ₅₀ (mg/kg) rabbit
Methyl ethyl ketone	5900	2737	32000 (mouse) 38000 (mammal)	6480 (rabbit)
Poly(vinyl chloride) resin	n/a	n/a	n/a	n/a
Tetrahydrofuran	5877	1650 (rat) 2300 (guinea pig)	61000 (3h) Drowsiness. Lungs Thorax or Respiration	>2000 (rat)

Prolonged Exposure

Name	Skin corrosion / irritation	Serious eye damage / irritation	Respiratory or skin sensitization
Methyl ethyl ketone	Rabbit – skin irritation (24h)	No data available	No data available
Poly(vinyl chloride) resin	No data available	No data available	No data available

A-300CL PVC Adhesive Clear

Tetrahydrofuran	Rabbit – mild skin irritation (Draize test)	Rabbit – risk of serious damage to eyes (Draize test)	Mouse – did not cause sensitization on laboratory animals

Germ cell mutagenicity

Tetrahydrofuran	In vivo tests did not show mutagenic effects
All other ingredients	No data available

Carcinogenicity

Methyl ethyl ketone	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Poly(vinyl chloride) resin	Mouse – Implant: Tumorigenic. Equivocal tumorigenic agent by RTECS criteria. Tumors at site or application. This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.
Tetrahydrofuran	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC

Reproductive toxicity

Tetrahydrofuran	No toxicity to reproduction.
All other ingredients	No data available.

Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

Methyl ethyl ketone	May cause drowsiness or dizziness.
Tetrahydrofuran	Inhalation - May cause respiratory irritation. May cause drowsiness or dizziness. Nervous system
All other ingredients	No data available.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No data available.

Aspiration hazard

No data available

Potential health effects**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.**Ingestion:** May be harmful if swallowed.**Skin:** May be harmful if absorbed through skin. Causes skin irritation.**Eyes:** Causes eye irritation.**Signs and Symptoms of Exposure**To the best of our knowledge, the chemical, physical, and toxicological properties of this product (a mixture) have not been thoroughly investigated.

The following symptoms have been reported for overexposure to the ingredients: Central Nervous System depression, Cough, chest pain, difficulty in breathing, Gastrointestinal disturbance, narcosis.

Synergistic effects

No data available.

12. ECOLOGICAL DATA**Toxicity**

Name	Fish LC ₅₀ (mg/dm ³ /96 h)	Daphnia and other marine invertebrates EC ₅₀ (mg/dm ³ /48 h)	Bacteria LC ₅₀ (mg/dm ³)
Methyl ethyl ketone	Mortality NOEC: 400 Cyprinodon variegatus (sheepshead minnow) 3,130 Pimephales promelas	LC ₅₀ >520 (mg/dm ³ /48 h) EC ₅₀ 7,060 (mg/dm ³ /24 h)	n/a
Poly(vinyl chloride) resin	No data available	No data available	No data available

A-300CL PVC Adhesive Clear

Tetrahydrofuran	2,160 Pimephales promelas (fathead minnow) n/a	Growth inhibition NOEC: 3,700 mg/dm ³ (Algae)

Persistence and degradability

Tetrahydrofuran	Expected to be biodegradable
All other ingredients	No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

PBT and vPyB assessment

No data available.

Other adverse effects

Data for the entire preparation (a mixture) is not available.

13. DISPOSAL CONSIDERATIONS**Unused or spoiled product**

The user must determine if it meets applicable definitions of a hazardous waste per 40 CFR 261 and other regulations. Dispose according to the environmental laws. Contact a licensed professional waste disposal service to arrange for appropriate removal. Burn the material in a chemical incinerator equipped with an afterburner and scrubber.

Container

Empty packaging may contain product residue and should not be reused. Dispose as of unused product.

14. TRANSPORTATION INFORMATION

Information provided for guidance purpose only and not meant to be inclusive. Packaging suitability and compliance with regulations must be reviewed prior to shipment.

Quantities smaller than 2.0 litres may be shipped as CONSUMER COMMODITY (per 49 CFR 171.8). Bulk quantities are regulated as follows:

DOT (U. S. A.); IMDG; IATA

UN1133; Class 2; Packing Group II

Proper shipping name

Adhesive, containing a flammable liquid.

Other information

Not considered marine pollutant or poison inhalation hazard.

DOT reportable ingredients:

Proper Shipping Name	Amount	Reportable quantity
Methyl ethyl ketone	10-20%	2,267 kg (5,000 lb)
Tetrahydrofuran	40-55%	454 kg (1,000lb)

15. REGULATORY INFORMATION**OSHA Hazards**

Flammable Liquid, Target Organ Effect, Harmful by ingestion, Irritant, Carcinogen.

TSCA and DSL

Listed or exempt

SARA 302

To the best of our knowledge, no chemicals in this product are subject to the reporting requirements of SARA Title III, Section 302 (40 CFR 355.30)

A-300CL PVC Adhesive Clear

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard.

SARA 313

To the best of our knowledge, no chemicals in this product are subject to the reporting requirements of SARA Title III, Section 313

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Volatile Organic Compounds

Below 700 g/l

16. ADDITIONAL INFORMATION

This safety data sheet complies with 29 CFR 1910.1200 and with EC 1907/2006, as amended. Paper copies of this publication may be made by the users for internal purposes only.

Last modified: Dec 1, 2014.

Disclaimer

All information and data appearing on this Material Safety Data Sheet are provided in good faith and are believed to be reliable and accurate to the best of our knowledge at the date of publication. Although certain hazards are listed herein, there is no guarantee that these are only risks. None of the provided information is to be considered a warranty or quality specification or all-inclusive and is given only as guidance. It is the user's responsibility to determine the safety of use, handling, storage, transportation, disposal, and suitability for the intended utilisation of the product. Unless otherwise specified, the data provided herein is valid only for the described material and may be not applicable for the product used in combination with any other materials or processes. Colorado Paint Company / Swarco shall not be liable for any damage resulting from handling, contact, use, or inability to use of this product. No guarantee, expressed or implied, is made by Colorado Paint Company / Swarco and the user assumes all risk and responsibility.

SAFETY DATA SHEET, revised Dec 1, 2014

A-300WH PVC Adhesive White**1. PRODUCT AND COMPANY INFORMATION**

Trade name	PVC Adhesive White
Product codes	ZGA-300WH, A300WH
Chemical family	Pigmented resin solution
Intended use	Adhesive for welding of PVC
Company	Colorado Paint (a Swarco Company) 4747 Holly Street Denver, CO 80216; U. S. A.
Telephone	+1 303-388-9265
Web site	www.swarco.com/americas
Emergency (Chemtrec; 24 h)	1-800-424-9300 (U. S. A. and Canada)

2. HAZARD IDENTIFICATION**Emergency Overview****OSHA Hazards**

Flammable Liquid, Target Organ Effect, Irritant.

Target Organs

Central nervous system, Liver, Kidney.

GHS Classification

Flammable liquids (Category 2)

Acute toxicity, Oral (Category 4)

Acute toxicity, Inhalation (Category 5)

Skin irritation (Category 2)

Eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictograms:

Signal word: Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H302 + H333 Harmful if swallowed or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 + H336 May cause respiratory irritation, dizziness, and drowsiness.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

A-300WH PVC Adhesive White**HMIS and NFPA Classification:**

	HMIS	NFPA Hazard
Health	2	2
Chronic health hazard	*	--
Flammability	3	3
Reactivity / Physical hazard	--	0
Physical hazard	3	--

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

3. COMPOSITION

Name	Synonym	CAS	EINECS	Index	Concentration
Tetrahydrofuran	THF, Oxolane	109-99-9	203-726-8	603-025-00-0	50-70%
Poly(vinyl chloride) resin	Modified PVC polymer	Proprietary mixture	n/a	n/a	20-35%
Methyl Ethyl Ketone	Butanone-2	78-93-3	201-159-0	606-021-00-7	10-20%
Titanium Dioxide	Titanium (IV) oxide	13466-67-7	236-675-5	n/a	2-3%

4. FIRST AID MEASURES**General advice**

Consult a physician. Show this Material Safety Data Sheet to the attending doctor.

If inhaled

Move person to fresh air. If not breathing, give artificial respiration. Obtain proper medical attention.

If on skin

Wash off with soap and water. Consult a physician if needed.

In case of an eye contact

Rinse thoroughly with plenty of water for at least 15 minutes. Seek medical attention.

If swallowed

Do not induce vomiting. Rinse mouth with water. Seek immediate medical attention.

Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

5. FIRE FIGHTING MEASURES**Suitable extinguishing media**

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide.

For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire fighters

Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NO_x), chlorinated compounds.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate unnecessary personnel to safe areas. Beware of vapors accumulating to form explosive concentrations.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with electrically protected equipment and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition – NO SMOKING. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature is 10-25 °C.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**Occupational exposure limits**

Name	CAS	OSHA TLV ⁽¹⁾	ACGIH TLV ⁽²⁾	NIOSH PEL ⁽³⁾	OSHA STEL ⁽⁴⁾	EU ⁽⁵⁾
Methyl ethyl ketone	78-93-3	590	590	590	885	600
Upper Respiratory Tract irritation. Central Nervous System and Peripheral Nervous System impairment. Substance for which there is a Biological Exposure Index.						
Poly(Vinyl chloride) resin	Proprietary mixture	n/a	n/a	n/a	n/a	n/a
No occupational exposure limits have been established. Per manufacturer, the resin is 'not hazardous and toxic chemical'.						
Tetrahydrofuran	109-99-9	590	147	735	735	150
Can be absorbed through skin. There are concerns that dermal absorption will lead to systemic toxicity. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhoea. Central Nervous System impairment. Upper Respiratory Tract irritation. Kidney damage. Confirmed animal carcinogen with unknown relevance to humans. The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histological type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.						
Titanium dioxide	13463-67-7	15	10	Fine particles: 2.4 Ultrafine particles: 0.3	n/a	4
The established limits are for respirable dust (total dust maximum is 15 mg/m ³) only and are meaningless for the paint product as delivered, but apply while sanding or abrading of dried coating. Lower Respiratory Tract irritation. Slight lung fibrosis (carcinogenic in rats). Health Effect: Nuisance particulate, accumulation in lungs. Not classifiable as a human carcinogen. No increase in risk for lung cancer (or any other specific cause of death) among titanium dioxide manufacturing workers.						

(1) Occupational Safety and Health Administration (OSHA); Threshold Limit Value (8-hour time-weighted average) pursuant to (a) for general industry: 29 CFR 1910.1000 Table Z-1, (b) for construction industry: 29 CFR 1926.55 Appendix A, and (c) for maritime industry: 29 CFR 1915.1000 Table Z. (2) American Conference of Governmental Industrial Hygienists; Threshold Limit Value. (3) National Institute for Occupational Safety and Health; Recommended Exposure Limit. (4) OSHA Short Term Exposure Limit (STEL). (5) European Union exposure limit per Directive 98/24/EC, as amended or UK EH40 Occupational Exposure Limit.

Ventilation

Use only where adequate ventilation can be maintained. Use explosion-proof exhaust fans when the product is used in enclosed areas.

Personal protective equipment**Respiratory protection**

A full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges are recommended as a backup to engineering controls.

Hand protection

Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good work hygiene practices. The selected protective gloves have to satisfy the specifications of the standard EN 374.

Eye protection

Safety glasses with side shields are required. Face shield are recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Wear impervious, flame retardant antistatic protective clothing.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash your hands thoroughly. Never intentionally inhale the contents. Use only for the intended purpose.

9. PHYSICAL PROPERTIES**Appearance**

Physical state Liquid
Color White
Odor Strong, irritating, characteristic of tetrahydrofuran

Safety data

Boiling point >60 °C (solvent data)
Freezing point Not available
Flash point >-13 °C (solvent data)
Upper explosion limit 3 vol% (solvent data)
Lower explosion limit 16 vol% (solvent data)
Solubility in water Solvents are soluble
Vapor pressure 213.3 hPa at 25 °C (solvent data)
Density 0.8-1.1 g·cm⁻³ at 25 °C
Viscosity 70-95 KU (Stormer, at 25 °C)
pH Not applicable

10. STABILITY AND REACTIVITY DATA**Chemical stability**

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, and sparks. Extremes of temperature and direct sunlight.

Materials to avoid

Bases, strong acids, oxidizing agents, reducing agents, phosphorous oxychloride.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NO_x).

11. TOXICOLOGICAL DATA**Acute toxicity**

Name	NIOSH IDLH (mg/m ³)	Oral LD ₅₀ (mg/kg) rat	Inhalation LC ₅₀ (rat)	Dermal LD ₅₀ (mg/kg) rabbit
Methyl ethyl ketone	5900	2737	32000 (mouse) 38000 (mammal)	6480 (rabbit)
Poly(vinyl chloride) resin	n/a	n/a	n/a	n/a
Tetrahydrofuran	5877	1650 (rat) 2300 (guinea pig)	61000 (3h) Drowsiness. Lungs Thorax or Respiration	>2000 (rat)
Titanium dioxide	5,000	>10,000	n/a	>10,000

Prolonged Exposure

Name	Skin corrosion / irritation	Serious eye damage / irritation	Respiratory or skin sensitization
Methyl ethyl ketone	Rabbit – skin irritation (24h)	No data available	No data available
Poly(vinyl chloride) resin	No data available	No data available	No data available
Tetrahydrofuran	Rabbit – mild skin irritation (Draize test)	Rabbit – risk of serious damage to eyes (Draize test)	Mouse – did not cause sensitization on laboratory animals
Titanium dioxide	Human: Mild skin irritation (3h)	Rabbit: No eye irritation	Will not occur

Germ cell mutagenicity

Tetrahydrofuran	In vivo tests did not show mutagenic effects
Titanium dioxide	Genotoxicity in vitro – hamster – ovary: Micronucleus test. Genotoxicity in vitro – hamster – lungs: DNA inhibition. Genotoxicity in vitro – hamster – ovary: Sister Chromatoid exchange. Genotoxicity in vivo – mouse – intraperitoneal: Micronucleus test.
All other ingredients	No data available

Carcinogenicity

Methyl ethyl ketone	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Poly(vinyl chloride) resin	Mouse – Implant: Tumorigenic. Equivocal tumorigenic agent by RTECS criteria. Tumors at site or application. This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.
Tetrahydrofuran	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC
Titanium dioxide	Rat – inhalation: Tumorigenic: Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration: Tumors. Rat – intramuscular: Tumorigenic: Neoplastic by RTECS criteria. Blood; Lymphomas including Hodgkin's disease. Tumors at site or application. IARC: 2B - Group 2B: Possibly carcinogenic to humans (Titanium dioxide).

Reproductive toxicity

Tetrahydrofuran	No toxicity to reproduction.
All other ingredients	No data available.

Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

Methyl ethyl ketone	May cause drowsiness or dizziness.
Tetrahydrofuran	Inhalation - May cause respiratory irritation. May cause drowsiness or dizziness. Nervous system
All other ingredients	No data available.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No data available.

A-300WH PVC Adhesive White**Aspiration hazard**

No data available

Potential health effects**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.**Ingestion:** May be harmful if swallowed.**Skin:** May be harmful if absorbed through skin. Causes skin irritation.**Eyes:** Causes eye irritation.**Signs and Symptoms of Exposure**To the best of our knowledge, the chemical, physical, and toxicological properties of this product (a mixture) have not been thoroughly investigated.

The following symptoms have been reported for overexposure to the ingredients: Central Nervous System depression, Cough, chest pain, difficulty in breathing, Gastrointestinal disturbance, narcosis.

Synergistic effects

No data available.

12. ECOLOGICAL DATA**Toxicity**

Name	Fish LC ₅₀ (mg/dm ³ /96 h)	Daphnia and other marine invertebrates EC ₅₀ (mg/dm ³ /48 h)	Bacteria LC ₅₀ (mg/dm ³)
Methyl ethyl ketone	Mortality NOEC: 400 Cyprinodon variegatus (sheepshead minnow) 3,130 Pimephales promelas	LC ₅₀ >520 (mg/dm ³ /48 h) EC ₅₀ 7,060 (mg/dm ³ /24 h)	n/a
Poly(vinyl chloride) resin	No data available	No data available	No data available
Tetrahydrofuran	2,160 Pimephales promelas (fathead minnow)	n/a	Growth inhibition NOEC: 3,700 mg/dm ³ (Algae)
Titanium dioxide	>1,000 (other fish)	1,000	No data available.

Persistence and degradability

Tetrahydrofuran Expected to be biodegradable

All other ingredients No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

PBT and vPvB assessment

No data available.

Other adverse effects

Data for the entire preparation (a mixture) is not available.

13. DISPOSAL CONSIDERATIONS**Unused or spoiled product**

The user must determine if it meets applicable definitions of a hazardous waste per 40 CFR 261 and other regulations. Dispose according to the environmental laws. Contact a licensed professional waste disposal service to arrange for appropriate removal. Burn the material in a chemical incinerator equipped with an afterburner and scrubber.

Container

Empty packaging may contain product residue and should not be reused. Dispose as of unused product.

A-300WH PVC Adhesive White**14. TRANSPORTATION INFORMATION**

Information provided for guidance purpose only and not meant to be inclusive. Packaging suitability and compliance with regulations must be reviewed prior to shipment.

Quantities smaller than 2.0 litres may be shipped as CONSUMER COMMODITY (per 49 CFR 171.8). Bulk quantities are regulated as follows:

DOT (U. S. A.); IMDG; IATA

UN1133; Class 2; Packing Group II

Proper shipping name

Adhesive, containing a flammable liquid.

Other information

Not considered marine pollutant or poison inhalation hazard.

DOT reportable ingredients:

Proper Shipping Name	Amount	Reportable quantity
Methyl ethyl ketone	10-20%	2,267 kg (5,000 lb)
Tetrahydrofuran	40-55%	454 kg (1,000lb)

15. REGULATORY INFORMATION**OSHA Hazards**

Flammable Liquid, Target Organ Effect, Harmful by ingestion, Irritant, Carcinogen.

TSCA and DSL

Listed or exempt

SARA 302

To the best of our knowledge, no chemicals in this product are subject to the reporting requirements of SARA Title III, Section 302 (40 CFR 355.30)

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard.

SARA 313

To the best of our knowledge, no chemicals in this product are subject to the reporting requirements of SARA Title III, Section 313

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Volatile Organic Compounds

Below 700 g/l

16. ADDITIONAL INFORMATION

This safety data sheet complies with 29 CFR 1910.1200 and with EC 1907/2006, as amended. Paper copies of this publication may be made by the users for internal purposes only.

Last modified: Dec 1, 2014.

Disclaimer

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SAFETY DATA SHEET

RG-2400 LT®

Section 1. Identification

GHS product identifier : RG-2400 LT®
Other means of identification : Not available.
Product type : Creamy gel like.

Identified uses

Coating for the prevention of corrosion.

Supplier's details : Polyguard Products Inc.
3801 South Interstate 45
Ennis, TX 75119
Tel: (800)541-4994

Emergency telephone number (with hours of operation) : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887
(24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN SENSITIZATION - Category 1

Titanium oxide is not in its respirable form and is a constituent of the mixture.

GHS label elements

Hazard pictograms :



Signal word : Warning
Hazard statements : May cause an allergic skin reaction.

Precautionary statements

Prevention : Wear protective gloves. Avoid breathing vapor. Contaminated work clothing should not be allowed out of the workplace.
Response : IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.
Storage : Not applicable.
Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified : None known.



Section 3. Composition/information on ingredients

Substance/mixture : Mixture
 Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.
 Product code : Not available.

Ingredient name	%	CAS number
D-Limonene	0.1 - 1	5989-27-5
2,6-di-tert-Butyl-p-cresol	0.1 - 1	128-37-0
Titanium dioxide	0.1 - 1	13463-67-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Maintain an open airway. Get medical attention if symptoms occur.
- Skin contact** : Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
 irritation
 redness
- Ingestion** : No known significant effects or critical hazards.



Section 4. First aid measures

Location of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : No specific fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
metal oxide/oxides

- Special protective actions for fire-fighters** : No special measures are required.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.



Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
2,6-di-tert-Butyl-p-cresol	OSHA PEL 1989 (United States, 3/1989). TWA: 10 mg/m ³ 8 hours. NIOSH REL (United States, 10/2013). TWA: 10 mg/m ³ 10 hours. ACGIH TLV (United States, 4/2014). TWA: 2 mg/m ³ 8 hours. Form: Inhalable fraction and vapor
Titanium dioxide	OSHA PEL (United States, 2/2013). TWA: 15 mg/m ³ 8 hours. Form: Total dust ACGIH TLV (United States, 4/2014). TWA: 10 mg/m ³ 8 hours.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.



Section 8. Exposure controls/personal protection

Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Under normal use a respirator is not required.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid. [Creamy gel.]
- Color** : Bluish.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Open cup: 179.44°C (355°F) [Cleveland.]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 0.95 to 1.15
- Solubility** : Insoluble in water.
- VOC = Volatile Organic Compound** : 0 g/L
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : 434 to 437°C (813.2 to 818.6°F)
- Decomposition temperature** : Not available.
- Viscosity** : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.



Section 10. Stability and reactivity

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
D-Limonene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	4400 mg/kg	-
2,6-di-tert-Butyl-p-cresol	LD50 Oral	Rat	890 mg/kg	-

Irritation/Corrosion

Product/Ingredient name	Result	Species	Score	Exposure	Observation
D-Limonene	Skin - Mild irritant	Rabbit	-	24 hours 10%	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
2,6-di-tert-Butyl-p-cresol	Skin - Mild irritant	Human	-	48 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	48 hours 500 mg	-
Titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 µg Intermittent	-

Sensitization

There is no data available.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH	EPA	NIOSH
Silicic acid, calcium salt	-	-	-	A4	-	None.
Titanium dioxide	-	2B	-	A4	-	+

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Ingestion.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
 Inhalation : No known significant effects or critical hazards.
 Skin contact : May cause an allergic skin reaction.
 Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.



Section 11. Toxicological information

Inhalation	: No known significant effects or critical hazards.
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	: No known significant effects or critical hazards.
Potential delayed effects	: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects	: No known significant effects or critical hazards.
Potential delayed effects	: No known significant effects or critical hazards.

Potential chronic health effects

General	: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
D-Limonene	Acute EC50 421 µg/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute EC50 688 µg/L Fresh water	Fish - Pimephales promelas	96 hours
2,6-di-tert-Butyl-p-cresol	Acute EC50 1440 µg/L Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
Titanium dioxide	Acute EC50 5.83 mg/L Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute LC50 3 mg/L Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 5.5 ppm Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 1000 mg/L Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 0.984 mg/L Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential



Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
D-Limonene	4.38	1022	high
2,6-di-tert-Butyl-p-cresol	5.1	330 to 1800	high
Titanium dioxide	-	352	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

AERG : Not applicable

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.



Section 14. Transport information

Transport in bulk according : Not available.

Annex II of MARPOL
78 and the IBC Code

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Air Act Section 112 : Not listed

(b) Hazardous Air
Pollutants (HAPs)

Clean Air Act Section 602 : Not listed

Class I Substances

Clean Air Act Section 602 : Not listed

Class II Substances

DEA List I Chemicals : Not listed

(Precursor Chemicals)

DEA List II Chemicals : Not listed

(Essential Chemicals)

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
D-Limonene	0.1 - 1	Yes.	No.	No.	Yes.	No.
Titanium dioxide	0.1 - 1	No.	No.	No.	No.	Yes.

State regulations

Massachusetts

: The following components are listed: Distillates (petroleum), hydrotreated light paraffinic; Distillates (petroleum), solvent-dewaxed light paraffinic; Silicic acid, calcium salt

New York

: None of the components are listed.

New Jersey

: The following components are listed: Distillates (petroleum), hydrotreated heavy paraffinic; Distillates (petroleum), solvent-dewaxed heavy paraffinic; Distillates (petroleum), hydrotreated light paraffinic; Distillates (petroleum), solvent-dewaxed light paraffinic; Silicic acid, calcium salt; Titanium dioxide

Pennsylvania

: The following components are listed: Silicic acid, calcium salt; Titanium dioxide

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Titanium dioxide	Yes.	No.	No.	No.



Section 16. Other information

Health : 1 Flammability : 0 Physical hazards : 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 1 Flammability : 0 Instability : 0

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue mm/dd/yyyy : 11/15/2014
 Date of previous issue : 01/15/2012
 Version : 5
 Revised Section(s) : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
 Prepared by : KMK Regulatory Services Inc.
 Key to abbreviations : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



BOSS 380 Professional Grade Contractor's Silicone Sealant

Safety Data Sheet



BOSS 380 Professional Grade Contractor's Silicone Sealant

Safety Data Sheet

Issue date: 08/06/2020 Revision date: 12/8/2022 Version: 2.0

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Trade name : BOSS 380 Professional Grade Contractor's Silicone
Reference number Sealant : 142260, 142261, 142262, 142263, 142264, 142265

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Consumer use/Professional use
Use of the substance/mixture : Sealant

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Soudal
350 Ring Road
Elizabethtown, KY 42701
(270) 769-3385

technical@soudalaccumetric.com
www.SoudalUSA.com

1.4. Emergency telephone number

Emergency number : (800) 424-9300 CHEMTREC
24h/24h

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.2. Label elements

GHS classification in accordance with the OSHA Hazard communication Standard (29 CFR 1910.1200)

Hazard pictograms (CLP):

Signal word (CLP) : None needed
Contains :
Hazard Statements : Not a hazardous substance or mixture.
Precautionary Statements : Use only outdoors or in a well-ventilated area.

2.3. Other hazards

No data available.

SECTION 3: Ingredients

3.1. Substances

Not applicable

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3.2. Mixtures

Chemical nature: Silicone Elastomer

This product is a mixture.

Contains no hazardous ingredients according to GHS.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: First responders should pay attention to self-protection and used recommended clothing (chemical resistant gloves and splash protection). If potential for exposure exists, refer to section 8 for specific PPE.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell. Do not induce vomiting unless directed to do so by medical personnel.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact	: Skin contact may aggravate existing dermatitis. Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin.
Symptoms/effects after eye contact	: May cause slight eye irritation. May cause mild discomfort.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Alcohol-resistant Foam. Carbon dioxide.
Unsuitable extinguishing media	: None known.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire: Carbon oxides. Silicon oxides

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health.

5.3. Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers. Evacuate area. Collect contaminated fire extinguishing water separately. Do not discharge into drains. Fire residues and contaminated fire extinguisher water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures: Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

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6.1.2. For emergency responders

Protective equipment

Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

6.2. Environmental precautions

Discharge into environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and material for containment and cleaning up

Wipe up or scrape up and contain for salvage or disposal. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You need to determine which regulations are applicable. For large spills, provide diking and other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.

6.4. Reference to other sections

For further information refer to section 7, 8, 11, 12, and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with eyes. Do not swallow. Avoid prolonged or repeated contact with skin. Take care to prevent spills, waste, and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep in properly labelled containers. Store in accordance with local, regional, and national regulations.

Incompatible products : Strong oxidizing agents

Unsuitable materials for containers : None known

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

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8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses (w/ side shields)

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Use gloves chemically resistant to this material. Chlorinated polyethylene, neoprene, nitrile/butadiene rubber, polyethylene, ethyl vinyl alcohol laminate, polyvinyl chloride, Viton, polyvinyl alcohol, and butyl rubber. NOTICE: The selection of proper gloves for a particular application and duration of use in workplace should also take into account all relevant workplace factors such as, but no limited to: other chemicals which may be handled, physical requirements (cut/puncture resistant, dexterity thermal protection), potential body reactions to glove materials, as well as instructions/specifications provided by the glove supplier.

8.2.2.3. Respiratory protection

Respiratory protection:

Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or were indicated by your risk assessment process. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

The following types of air-purifying respirators should be effective: Organic vapor cartridge.

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Paste
Color	: Various
Appearance	: Smooth Homogenous Paste
Odor	: Acetic Acid.
Odor threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Not classified as a flammability hazard
Explosive properties	: Not available
Explosive limits	: Not available

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Lower explosive limit (LEL)	: Not available
Upper explosive limit (UEL)	: Not available
Flash point	: Closed cup >100°C (212°F)
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not applicable
Viscosity, kinematic	: Not available
Solubility	: Insoluble.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapor pressure	: Not applicable
Vapor pressure at 50 °C	: Not available
Density	: 1,007 kg/m³ (20°C)
Relative density	: 1.007 (20°C)
Relative vapor density at 20 °C	: Not available
Particle size	: Not applicable
Particle size distribution	: Not applicable
Particle shape	: Not applicable
Particle aspect ratio	: Not applicable
Particle aggregation state	: Not applicable
Particle agglomeration state	: Not applicable
Particle specific surface area	: Not applicable
Particle dustiness	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

% of flammable ingredients :

9.2.2. Other safety characteristics

VOC content : 23 g/L (< 3% by volume)

SECTION 10: Stability and reactivity

10.1. Reactivity

Not classified as a reactivity hazard

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Can react with strong oxidizing agents. When heated to temperatures above 150°C

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Avoid contact with oxidizing materials.

10.6. Hazardous decomposition products

Decomposition products can include and are not limited to: Formaldehyde.

SECTION 11: Toxicological information

11.1. Information on hazard classes

Acute toxicity (oral) : Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. As product single does LD50 has not been determined.
Based on information from component(s):
: LD50 >5,000 mg/kg Estimated

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Acute toxicity (dermal)	: Prolonged skin contact is unlikely to result in absorption of harmful amounts. As a product the dermal LD50 has not been determined. Based on information for the component(s): LD50 > 2,000 mg/kg Estimated
Acute toxicity (inhalation)	: Brief exposure (minutes) is not likely to cause adverse effects. Vapor from heated material may cause respiratory irritation. As product: The LC 50 has not been determined.

Skin Corrosion/Irritation

Based on information for the component(s):
Prolonged exposure not likely to cause significant skin irritation.
May cause drying and flaking of the skin.

Serious eye damage/eye irritation

Based on information for the component(s):
May cause slight temporary eye irritation.
May cause mild eye discomfort.

Sensitization

For skin sensitization:
Contains component(s) which did not cause allergic skin sensitization in guinea pigs.

For respiratory sensitization:
No relevant information found.

Specific Target Organ Systemic Toxicity – Single Exposure

Evaluation of the available data suggests that this material is not a STOT-SE toxicant.

Specific Target Organ systemic Toxicity – Repeated Exposure

Based on available data for the component(s), repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenic

No relevant data found

Teratogenicity

Contains component(s) which did not cause birth defects or any other fetal effects in lab animals.

Reproductive Toxicity

Contains component(s) which did not interfere with reproduction in animal studies.

Mutagenicity

In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity studies in animals were negative for component(s) tested.

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological Information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulation Potential

No data available

12.4 Mobility in Soil

No data available

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SECTION 13: Disposal

13.1. Waste treatment methods

We make no guarantee or warranty of any kind that the use of disposal of this product complies with all local, state, or federal laws. It is also the obligation of each user of the product mentioned herein to determine and comply with requirements and applicable statutes.

This product is not known to be regulated under RCRA regulations. Disposal of unused portions of this product and process waste containing product should be done only after a careful evaluation and in compliance with all federal, local and state laws.

SECTION 14: Transport Information

UN Number:	N/A
UN Proper Shipping Name:	Not regulated as a dangerous good
DOT Classification:	Not regulated as a dangerous good
Packing Group:	Not regulated as a dangerous good
International Regulations:	UNRTDG Not regulated as a dangerous good
	IATA-DGR Not regulated as a dangerous good
	IMDG-Code Not regulated as a dangerous good

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. US Federal Regulations

TSCA

All components of this product follow the inventory listing requirements of the US Toxic Substances and Control Act (TSCA) Chemical Substances Inventory.

SARA 311 and 312: No SARA hazards.

SARA 313: This material does not contain any chemicals with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

15.1.2. US State Regulations

Pennsylvania Right to Know

The following chemicals are listed because of the additional requirements for Pennsylvania law:

Components	CAS Number
Polydimethylsiloxane hydroxy terminated	70131-67-8
Silicon dioxide	7631-86-9
Amorphous fumed silica	112945-52-5

California Prop 65 Clear:

This product contains a chemical that is at or below the California Proposition 65's "safe harbor level" as determined via a risk assessment. Therefore, the chemical is not required to be listed as a Prop 65 chemical on the SDS or label.

California Prop 65 Black:

WARNING: This product can expose you to chemicals including Carbon Black, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov

California Prop 65 Other Colors:

WARNING: This product can expose you to chemicals including Titanium Dioxide, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Hazard Rating System

NFPA

Health	Flammability	Instability
0	1	0

HMIS

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Health	Flammability	Instability
0	1	0

Disclaimer: The data contained herein is based upon information that Soudal believes to be reliable. Users of this product have the responsibility to determine the suitability of use and to adopt all necessary precautions to ensure the safety and protection of property and persons involved in said use. All statements or suggestions are made without warranty, expressed or implied, regarding the accuracy of the information, the hazards connected with the use of the material of the results to be obtained from the use thereof.



SAFETY DATA SHEET

Print Date: 5/31/2015

PRODUCT NAME: SIL-BOND RTV 4500
COLOR: ALUMINUM

REVISION DATE: May 31st 2015

1. PRODUCT AND COMPANY IDENTIFICATION

Commercial Product Name: SIL-BOND RTV 4500

Product Classification: Silicone Sealant

Manufacturer:

Silco Inc.

7635 St. Clair Avenue

Mentor, OH 44060

PHONE: 440-975-8886 FAX: 440-975-8887

General Description: Silicone elastomer

Physical Form: Paste

Color: Aluminum

Odor: Acetic acid odor

NFPA PROFILE: Health - 1 Flammability - 1 Instability/Reactivity - 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION

Physical Hazards: Not classified

Health Hazards: Reproductive toxicity (fertility) Category 2

Environmental Hazards: Not classified

OSHA Defined Hazards: Not classified

- Hazards not stated here are "Not Classified", "Not Applicable" or "Classification not possible".

GHS Label Elements

Signal Word:

Warning



Hazard Statement:

Precautionary

Statement:

Prevention:

Suspected of damaging fertility. May cause eye/lung/skin irritation. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves / protective clothing / eye protection / face protection. Wash well after handling. Contaminated work clothing should not be allowed out of work place.

Response:	SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention / advice. Get medical attention / advice if you feel unwell. EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritant persists get medical attention / advice. If exposed or concerned: get medical attention or advice. Take off contaminated clothing and wash it before reuse.
Storage:	Store locked up.
Disposal:	Disposal of contents / container in accordance with local / regional / state / federal and international regulations.
Hazard(S) not Otherwise classified (HNOC):	None known.
Supplemental Information:	None known.
Substance(s) formed under the conditions of use:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide.
HMIS (Ratings):	Health: 1 Flammability: 1 Physical hazard: 0

3. COMPOSITION/ INGREDIENTS

Mixtures

Hazardous Ingredients

Chemical Name	CAS Number	%
Ethyltriacetoxysilane	17689-77-9	1 – 5
Methylacetoxysilane	4253-34-3	1 – 5
Titanium oxide	13463-67-7	< 1
Distillates (petroleum), hydrotreated middle	64742-46-7	1 – 7
Octamethylcyclotetrasiloxane (impurity)	556-67-2	< 1

4. FIRST AID MEASURES

Inhalation:	Remove to fresh air. Call a physician if symptoms develop or persist.
Skin Contact:	Wash off with soap and plenty of water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation or rash occurs: get medical attention / advice. Take off contaminated clothing and wash before use.
Eyes Contact:	Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation developed or persists.
Ingestion:	Wash out mouth. Get medical attention immediately.
Most Important symptoms / effects, acute and delayed:	Direct contact with eyes may cause temporary irritation.
Indication of immediate Medical attention and Special treatment Needed:	Treat Symptomatically.
General Information:	If exposed or concerned: Get medical advice / attention. Ensure that medical personnel are aware materials involved and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂)
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	By heating and fire, harmful vapors / gases may be formed.
Specific protective equipment and precautions for firefighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots and self-contained breathing apparatus.
Fire Fighting equipment / Instructions:	Move containers from fire area if you can do so without risk.
General fire hazards:	No unusual fire or explosion hazards noted.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch or walk through spilled material. Ensure adequate ventilation. Wear appropriate personal protective equipment.

Methods and materials for containment and cleaning up:

Eliminate sources of ignition.

Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for reuse.

Environmental precautions:

Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precaution for safe handling:

Provide adequate ventilation. Use care in handling/storage. Obtain special instructions before use. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Pregnant and breastfeeding women must not handle this product. Do not breathe mist or vapor. Avoid contact with eyes. Avoid contact with skin. Avoid long term exposure.

Conditions for safe storage, including any incompatibilities

Stored locked up. Keep container tightly closed. Keep out of reach of children. Store in a cool dry place out of direct sunlight. Keep in original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	CAS #	Type	Value
Titanium oxide	13463-67-7	PEL	15 mg/m ³
Decomposition			
Distillates (petroleum) hydrotreated middle	64742-46-7	TWA (Mist)	5 mg/m ³
Acetic acid	64-19-7	PEL	25 mg/m ³ 10 ppm

US. ACGIH Threshold Limit Values			
Components			
Titanium dioxide	13463-67-7	TWA	10 mg/m3
Decomposition			
Acetic acid	64-19-7	STEL	15 ppm
		TWA	10 ppm
US. NIOSH: Pocket Guide to Chemical Hazards			
Decomposition			
Acetic acid	64-19-7	STEL	37 mg/m3
			15 ppm
		TWA	25 mg/m3
			10 ppm
Distillates (petroleum)	64742-46-7	TWA (Mist)	5mg/m3
hydrotreated middle		ST (Mist)	10mg/m3
Biological limit values:	No biological exposure limits for the ingredient(s).		
Appropriate engineering controls:	Provide adequate general and local exhaust. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and or / door open for at least 24 hours after applications.		
Individual protection measures such as personal protective equipment.			
Eye / Face protection:	Tightly sealed safety glasses according to EN 166.		
Skin / Hand protection:	Wear protective gloves.		
Other:	Wear suitable protective clothing.		
Respiratory protection:	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.		
Thermal hazards:	Wear appropriate thermal protective clothing, when necessary.		
General Hygiene Considerations:	Avoid contact with eyes. Avoid contact with skin. When using, do not eat, drink or smoke. Keep away from food or drink. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the work place. Handle in accordance with good industrial hygiene and safety practice.		

9. PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance

Form:

Paste

Color:

Aluminum

Odor:

Acetic acid odor

Odor Threshold:	Not available
pH:	Not available
Melting point / freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash Point:	141.8 °F (> 96 °C) Closed cup
Evaporative rate:	< 1 (Butyl Acetate = 1)
Flammability (solid, gas):	Not applicable
Upper / Lower flammability or explosive limits:	
Flammability limit – lower (%):	No data
Flammability limit – upper (%):	No data
Explosive limit – Lower (%):	Not available
Explosive limit – Upper (%):	Not available
Vapor pressure:	Negligible (25 °C)
Vapor density:	> 1 (air=1)
Relative density:	1.04 (25 °C)
Solubility (water):	Not soluble
VOC Content:	30 grams per liter
Partition coefficient: (n-octanol / water)	Not applicable
Auto-ignition temperature:	No data
Decomposition temperature:	Not available
Viscosity:	Not applicable
Molecular weight:	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	No hazardous reaction known under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous Reactions	Hazardous polymerization does not occur.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Water and moisture.
Hazardous decomposition products:	This product reacts with water, moisture, or humid air to evolve following compounds. Acetic acid. Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon dioxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion: Expected to be a low ingestion hazard.
Inhalation: Prolonged inhalation may be harmful.
Skin contact: No adverse effects due to skin contact are expected.
Eye contact: Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical, and toxicological characteristics: Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Toxicological data

Decomposition

	CAS #	Species	Test Results
Acetic acid	64-19-7		
Acute			
Dermal			
LD50		Rabbit	1060 mg/kg
Inhalation			
LC 50		Guinea	5000 ppm, 1 hours
		Pig	
		Mouse	5620 ppm, 1 hours
		Rat	11.4 mg/l, 4hours
Oral			
LD50		Mouse	4960 mg/kg
		Rabbit	1200 mg/kg
		Rat	3.31 g/kg
Distillates (petroleum)			
hydrotreated middle			
Oral		Rat	> 5,000 mg/kg
Inhalation			
LC 50		Rat	1.78 mg/l, 4 hours
Dermal			
		Rat	> 2,000 mg/kg

Skin corrosion / irritation: Causes severe skin burns and eye damage. (Acetic acid)
 Skin-Rabbit: 500 mg/24hr.MILD (Octamethylcyclotetrasiloxane)

Serious eye damage/eye irritation: Causes serious eye damage. (Acetic acid)
 Eye – Rabbit: MILD (Octamethylcyclotetrasiloxane)

Respiratory Sensitization: Not available.



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Skin Sensitization:	No evidence of sensitization (Octamethylcyclotetrasiloxane)
Germ Cell Mutagenicity:	Negative (Bacteria) (Octamethylcyclotetrasiloxane)
Carcinogenicity:	The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide. Titanium oxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans. Not listed
IARC Monographs, Overall Evaluation of Carcinogenicity. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):	
Reproductive Toxicity:	Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation and lactation resulted in decreases in live litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 and 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter size. The significance of these findings to humans is not known. (Octamethylcyclotetrasiloxane)
Specific target organ toxicity – single exposure:	Not available
Specific target organ toxicity – repeated exposure:	Repeated inhalation or oral exposure of mice and rats to Octamethylcyclotetrasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. A two year combined chronic and carcinogenicity assay was conducted on Octamethylcyclotetrasiloxane. Rats were exposed by whole-body vapor inhalation 6hrs /day, 5 days a week for up to 104 weeks to 0, 10, 30, 150 or 700 ppm of Octamethylcyclotetrasiloxane. The increase in incidence of (uterine) endometrial cell hyperplasia and uterine adenomas

Aspiration hazard:	(benign tumors) were observed in female rats at 700 ppm. Since these effects only occurred at 700 ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing Octamethylcyclotetrasiloxane would result in a significant risk to humans. (Octamethylcyclotetrasiloxane) The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard. Distillates (petroleum), hydrotreated middle
Chronic effects:	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further Information:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid.

12. ECOLOGICAL CONSIDERATIONS

Ecotoxicity

- Octamethylcyclotetrasiloxane: May cause long lasting harmful effects to aquatic life.

Components		Species	Test Results
Titanium oxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water Flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus Heteroclitus)	> 1000 mg/l, 96 hours
Decomposition			
Acetic acid (CAS 64-19-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia Magna)	65 mg/l, 48 hours
Fish	LC50	Bluegill (Leponis Macrochirus)	75mg/l, 96 hours

Persistence and degradability: Not available.

Bioaccumulative potential: Bio concentration Factor (BCF) / (Flathead minnow): 12400

Octamethylcyclotetrasiloxane.

Mobility in Soil: Not available.

Other adverse effects: Not available

13. DISPOSAL CONSIDERATIONS

Can be land-filled for cured product or burned in a chemical incinerator equipped with an afterburner and scrubber. Do not dispose the emptied container unlawfully. Observe all federal, state & local laws.

14. TRANSPORT INFORMATION

DOT: Not regulated as dangerous good.

IATA: Not regulated as dangerous good.

IMDG: Not regulated as dangerous good.

Transport in bulk according to This product is not intended to be transported in bulk.

Annex II of MARPDL 73/78 and

The IBC Code:

15. REGULATORY INFORMATION

US federal regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not listed

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA)

SARA 313 (TRI reporting)

US State Regulations

- **Massachusetts: Substance List:**
Titanium oxide (CAS 13463-67-7)
- **New Jersey Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Pennsylvania Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Rhode Island RTK:** Not regulated.
- **California Proposition 65:** The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards.
- **US California Proposition 65 – CRT: Listed date / Carcinogenic substance**
Titanium oxide (CAS 13463-67-7) Listed: September 2, 2011

International Inventories

Country(s) or region	Inventory Name	On Inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non Domestic Substances (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemicals	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances	Yes
Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
United States	Toxic Substances Control Act (TSCA) Inventory	Yes

16. OTHER INFORMATION

Prepared by: Silco Inc.

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

www.silco-inc.com



SAFETY DATA SHEET

Print Date: 5/31/2015

PRODUCT NAME: SIL-BOND RTV 4500

COLOR: CLEAR

REVISION DATE: May 31st 2015

1. PRODUCT AND COMPANY IDENTIFICATION

Commercial Product Name: SIL-BOND RTV 4500

Product Classification: Silicone Sealant

Manufacturer:

Silco Inc.

7635 St. Clair Avenue

Mentor, OH 44060

PHONE: 440-975-8886 FAX: 440-975-8887

General Description: Silicone elastomer

Physical Form: Paste

Color: Clear

Odor: Acetic acid odor

NFPA PROFILE: Health - 1 Flammability - 1 Instability/Reactivity - 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION

Physical Hazards: Not classified

Health Hazards: Reproductive toxicity (fertility) Category 2

Environmental Hazards: Not classified

OSHA Defined Hazards: Not classified

- Hazards not stated here are "Not Classified", "Not Applicable" or "Classification not possible".

GHS Label Elements

Signal Word:

Warning



Hazard Statement:

Precautionary

Statement:

Prevention:

Suspected of damaging fertility. May cause eye/lung/skin irritation. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves / protective clothing / eye protection / face protection. Wash well after handling. Contaminated work clothing should not be allowed out of work place.

Response:	SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention / advice. Get medical attention / advice if you feel unwell. EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritant persists get medical attention / advice. If exposed or concerned: get medical attention or advice. Take off contaminated clothing and wash it before reuse.
Storage:	Store locked up.
Disposal:	Disposal of contents / container in accordance with local / regional / state / federal and international regulations.
Hazard(S) not Otherwise classified (HNOC):	None known.
Supplemental Information:	None known.
Substance(s) formed under the conditions of use:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide.
HMIS (Ratings):	Health: 1 Flammability: 1 Physical hazard: 0

3. COMPOSITION/ INGREDIENTS

Mixtures

Hazardous Ingredients

Chemical Name	CAS Number	%
Ethyltriacetoxysilane	17689-77-9	1-5
Methylacetoxysilane	4253-34-3	1-5
Titanium oxide	13463-67-7	< 1
Distillates (petroleum), hydrotreated middle	64742-46-7	1-7
Octamethylcyclotetrasiloxane (impurity)	556-67-2	< 1

4. FIRST AID MEASURES

Inhalation:	Remove to fresh air. Call a physician if symptoms develop or persist.
Skin Contact:	Wash off with soap and plenty of water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation or rash occurs: get medical attention / advice. Take off contaminated clothing and wash before use.
Eyes Contact:	Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation developed or persists.
Ingestion:	Wash out mouth. Get medical attention immediately.
Most Important symptoms / effects, acute and delayed:	Direct contact with eyes may cause temporary irritation.
Indication of immediate Medical attention and Special treatment Needed:	Treat Symptomatically.
General Information:	If exposed or concerned: Get medical advice / attention. Ensure that medical personnel are aware materials involved and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂)
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	By heating and fire, harmful vapors / gases may be formed.
Specific protective equipment and precautions for firefighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots and self-contained breathing apparatus.
Fire Fighting equipment / Instructions:	Move containers from fire area if you can do so without risk.
General fire hazards:	No unusual fire or explosion hazards noted.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch or walk through spilled material. Ensure adequate ventilation. Wear appropriate personal protective equipment.
Methods and materials for containment and cleaning up:	Eliminate sources of ignition. Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for reuse.
Environmental precautions:	Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precaution for safe handling:	Provide adequate ventilation. Use care in handling/storage. Obtain special instructions before use. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Pregnant and breastfeeding women must not handle this product. Do not breathe mist or vapor. Avoid contact with eyes. Avoid contact with skin. Avoid long term exposure.
Conditions for safe storage, including any incompatibilities	Stored locked up. Keep container tightly closed. Keep out of reach of children. Store in a cool dry place out of direct sunlight. Keep in original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	CAS #	Type	Value
Titanium oxide	13463-67-7	PEL	15 mg/m ³
Decomposition			
Distillates (petroleum) hydrotreated middle	64742-46-7	TWA (Mist)	5 mg/m ³
Acetic acid	64-19-7	PEL	25 mg/m ³ 10 ppm

US. ACGIH Threshold Limit Values			
Components			
Titanium dioxide	13463-67-7	TWA	10 mg/m3
Decomposition			
Acetic acid	64-19-7	STEL	15 ppm
		TWA	10 ppm
US. NIOSH: Pocket Guide to Chemical Hazards			
Decomposition			
Acetic acid	64-19-7	STEL	37 mg/m3
			15 ppm
		TWA	25 mg/m3
			10 ppm
Distillates (petroleum)	64742-46-7	TWA (Mist)	5mg/m3
hydrotreated middle		ST (Mist)	10mg/m3
Biological limit values:	No biological exposure limits for the ingredient(s).		
Appropriate engineering controls:	Provide adequate general and local exhaust. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and or / door open for at least 24 hours after applications.		
Individual protection measures such as personal protective equipment.			
Eye / Face protection:	Tightly sealed safety glasses according to EN 166.		
Skin / Hand protection:	Wear protective gloves.		
Other:	Wear suitable protective clothing.		
Respiratory protection:	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.		
Thermal hazards:	Wear appropriate thermal protective clothing, when necessary.		
General Hygiene Considerations:	Avoid contact with eyes. Avoid contact with skin. When using, do not eat, drink or smoke. Keep away from food or drink. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the work place. Handle in accordance with good industrial hygiene and safety practice.		

9. PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance	
Form:	Paste
Color:	Clear
Odor:	Acetic acid odor

Odor Threshold:	Not available
pH:	Not available
Melting point / freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash Point:	141.8 °F (> 96 °C) Closed cup
Evaporative rate:	< 1 (Butyl Acetate = 1)
Flammability (solid, gas):	Not applicable
Upper / Lower flammability or explosive limits:	
Flammability limit – lower (%):	No data
Flammability limit – upper (%):	No data
Explosive limit – Lower (%):	Not available
Explosive limit – Upper (%):	Not available
Vapor pressure:	Negligible (25 °C)
Vapor density:	> 1 (air=1)
Relative density:	1.04 (25 °C)
Solubility (water):	Not soluble
VOC Content:	30 grams per liter
Partition coefficient: (n-octanol / water)	Not applicable
Auto-ignition temperature:	No data
Decomposition temperature:	Not available
Viscosity:	Not applicable
Molecular weight:	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	No hazardous reaction known under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous Reactions	Hazardous polymerization does not occur.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Water and moisture.
Hazardous decomposition products:	This product reacts with water, moisture, or humid air to evolve following compounds. Acetic acid. Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon dioxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion:	Expected to be a low ingestion hazard.
Inhalation:	Prolonged inhalation may be harmful.
Skin contact:	No adverse effects due to skin contact are expected.
Eye contact:	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical, and toxicological characteristics: Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Toxicological data

Decomposition

	CAS #	Species	Test Results
Acetic acid	64-19-7		
Acute			
Dermal			
LD50		Rabbit	1060 mg/kg
Inhalation			
LC 50		Guinea	5000 ppm, 1 hours
		Pig	
		Mouse	5620 ppm, 1 hours
		Rat	11.4 mg/l, 4hours
Oral			
LD50		Mouse	4960 mg/kg
		Rabbit	1200 mg/kg
		Rat	3.31 g/kg
Distillates (petroleum)			
hydrotreated middle			
Oral		Rat	> 5,000 mg/kg
Inhalation			
LC 50		Rat	1.78 mg/l, 4 hours
Dermal			
		Rat	> 2,000 mg/kg
Skin corrosion / irritation:	Causes severe skin burns and eye damage. (Acetic acid)		
	Skin-Rabbit: 500 mg/24hr.MILD (Octamethylcyclotetrasiloxane)		
Serious eye damage/eye irritation:	Causes serious eye damage. (Acetic acid)		
	Eye – Rabbit: MILD (Octamethylcyclotetrasiloxane)		
Respiratory Sensitization:	Not available.		



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Skin Sensitization:	No evidence of sensitization (Octamethylcyclotetrasiloxane)
Germ Cell Mutagenicity:	Negative (Bacteria) (Octamethylcyclotetrasiloxane)
Carcinogenicity:	The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide. Titanium oxide (CAS 13463-67-7)
IARC Monographs, Overall Evaluation of Carcinogenicity.	2B Possibly carcinogenic to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):	Not listed
Reproductive Toxicity:	Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation and lactation resulted in decreases in live litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 and 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter size. The significance of these findings to humans is not known. (Octamethylcyclotetrasiloxane)
Specific target organ toxicity – single exposure:	Not available
Specific target organ toxicity – repeated exposure:	Repeated inhalation or oral exposure of mice and rats to Octamethylcyclotetrasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. A two year combined chronic and carcinogenicity assay was conducted on Octamethylcyclotetrasiloxane. Rats were exposed by whole-body vapor inhalation 6hrs /day, 5 days a week for up to 104 weeks to 0, 10, 30, 150 or 700 ppm of Octamethylcyclotetrasiloxane. The increase in incidence of (uterine) endometrial cell hyperplasia and uterine adenomas

Aspiration hazard:	(benign tumors) were observed in female rats at 700 ppm. Since these effects only occurred at 700 ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing Octamethylcyclotetrasiloxane would result in a significant risk to humans. (Octamethylcyclotetrasiloxane) The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard. Distillates (petroleum), hydrotreated middle
Chronic effects:	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further Information:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid.

12. ECOLOGICAL CONSIDERATIONS

Ecotoxicity

- Octamethylcyclotetrasiloxane: May cause long lasting harmful effects to aquatic life.

Components		Species	Test Results
Titanium oxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water Flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus Heteroclitus)	> 1000 mg/l, 96 hours
Decomposition			
Acetic acid (CAS 64-19-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia Magna)	65 mg/l, 48 hours
Fish	LC50	Bluegill (Leponis Macrochirus)	75mg/l, 96 hours

Persistence and degradability: Not available.

Bioaccumulative potential: Bio concentration Factor (BCF) / (Flathead minnow): 12400
Octamethylcyclotetrasiloxane.

Mobility in Soil: Not available.

Other adverse effects: Not available

13. DISPOSAL CONSIDERATIONS

Can be land-filled for cured product or burned in a chemical incinerator equipped with an afterburner and scrubber. Do not dispose the emptied container unlawfully. Observe all federal, state & local laws.

14. TRANSPORT INFORMATION

DOT: Not regulated as dangerous good.

IATA: Not regulated as dangerous good.

IMDG: Not regulated as dangerous good.

Transport in bulk according to This product is not intended to be transported in bulk.

Annex II of MARPDL 73/78 and

The IBC Code:

15. REGULATORY INFORMATION

US federal regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not listed

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA)

SARA 313 (TRI reporting)

US State Regulations

- **Massachusetts: Substance List:**
Titanium oxide (CAS 13463-67-7)
- **New Jersey Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Pennsylvania Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Rhode Island RTK:** Not regulated.
- **California Proposition 65:** The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards.
- **US California Proposition 65 – CRT: Listed date / Carcinogenic substance**
Titanium oxide (CAS 13463-67-7) Listed: September 2, 2011

International Inventories

Country(s) or region	Inventory Name	On Inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non Domestic Substances (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemicals	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances	Yes
Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
United States	Toxic Substances Control Act (TSCA) Inventory	Yes

16. OTHER INFORMATION

Prepared by: Silco Inc.

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

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SAFETY DATA SHEET

Print Date: 5/31/2015

PRODUCT NAME: SIL-BOND RTV 4500

COLOR: WHITE

REVISION DATE: May 31st 2015

1. PRODUCT AND COMPANY IDENTIFICATION

Commercial Product Name: SIL-BOND RTV 4500

Product Classification: Silicone Sealant

Manufacturer:

Silco Inc.

7635 St. Clair Avenue

Mentor, OH 44060

PHONE: 440-975-8886 FAX: 440-975-8887

General Description: Silicone elastomer

Physical Form: Paste

Color: White

Odor: Acetic acid odor

NFPA PROFILE: Health – 1 Flammability – 1 Instability/Reactivity - 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION

Physical Hazards: Not classified

Health Hazards: Reproductive toxicity (fertility) Category 2

Environmental Hazards: Not classified

OSHA Defined Hazards: Not classified

- Hazards not stated here are "Not Classified", "Not Applicable" or "Classification not possible".

GHS Label Elements

Signal Word:

Warning



Hazard Statement:

Precautionary

Statement:

Prevention:

Suspected of damaging fertility. May cause eye/lung/skin irritation. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves / protective clothing / eye protection / face protection. Wash well after handling. Contaminated work clothing should not be allowed out of work place.

Response:	SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention / advice. Get medical attention / advice if you feel unwell. EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritant persists get medical attention / advice. If exposed or concerned: get medical attention or advice. Take off contaminated clothing and wash it before reuse.
Storage:	Store locked up.
Disposal:	Disposal of contents / container in accordance with local / regional / state / federal and international regulations.
Hazard(S) not Otherwise classified (HNOC):	None known.
Supplemental Information:	None known.
Substance(s) formed under the conditions of use:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide.
HMIS (Ratings):	Health: 1 Flammability: 1 Physical hazard: 0

3. COMPOSITION/ INGREDIENTS

Mixtures

Hazardous Ingredients

Chemical Name	CAS Number	%
Ethyltriacetoxysilane	17689-77-9	1 – 5
Methylacetoxysilane	4253-34-3	1 – 5
Titanium oxide	13463-67-7	< 1
Distillates (petroleum), hydrotreated middle	64742-46-7	1 – 7
Octamethylcyclotetrasiloxane (impurity)	556-67-2	< 1



SAFETY DATA SHEET

4. FIRST AID MEASURES

Inhalation:	Remove to fresh air. Call a physician if symptoms develop or persist.
Skin Contact:	Wash off with soap and plenty of water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation or rash occurs: get medical attention / advice. Take off contaminated clothing and wash before use.
Eyes Contact:	Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation developed or persists.
Ingestion:	Wash out mouth. Get medical attention immediately.
Most Important symptoms / effects, acute and delayed:	Direct contact with eyes may cause temporary irritation.
Indication of immediate Medical attention and Special treatment Needed:	Treat Symptomatically.
General Information:	If exposed or concerned: Get medical advice / attention. Ensure that medical personnel are aware materials involved and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂)
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	By heating and fire, harmful vapors / gases may be formed.
Specific protective equipment and precautions for firefighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots and self-contained breathing apparatus.
Fire Fighting equipment / Instructions:	Move containers from fire area if you can do so without risk.
General fire hazards:	No unusual fire or explosion hazards noted.



SAFETY DATA SHEET

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch or walk through spilled material. Ensure adequate ventilation. Wear appropriate personal protective equipment.

Methods and materials for containment and cleaning up:

Eliminate sources of ignition.

Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for reuse.

Environmental precautions:

Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precaution for safe handling:

Provide adequate ventilation. Use care in handling/storage. Obtain special instructions before use. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Pregnant and breastfeeding women must not handle this product. Do not breathe mist or vapor. Avoid contact with eyes. Avoid contact with skin. Avoid long term exposure.

Conditions for safe storage, including any incompatibilities

Stored locked up. Keep container tightly closed. Keep out of reach of children. Store in a cool dry place out of direct sunlight. Keep in original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	CAS #	Type	Value
Titanium oxide	13463-67-7	PEL	15 mg/m ³
Decomposition			
Distillates (petroleum) hydrotreated middle	64742-46-7	TWA (Mist)	5 mg/m ³
Acetic acid	64-19-7	PEL	25 mg/m ³ 10 ppm

US. ACGIH Threshold Limit Values			
Components			
Titanium dioxide	13463-67-7	TWA	10 mg/m3
Decomposition			
Acetic acid	64-19-7	STEL	15 ppm
		TWA	10 ppm
US. NIOSH: Pocket Guide to Chemical Hazards			
Decomposition			
Acetic acid	64-19-7	STEL	37 mg/m3
			15 ppm
		TWA	25 mg/m3
			10 ppm
Distillates (petroleum)	64742-46-7	TWA (Mist)	5mg/m3
hydrotreated middle		ST (Mist)	10mg/m3
Biological limit values:	No biological exposure limits for the ingredient(s).		
Appropriate engineering controls:	Provide adequate general and local exhaust. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and or / door open for at least 24 hours after applications.		
Individual protection measures such as personal protective equipment.			
Eye / Face protection:	Tightly sealed safety glasses according to EN 166.		
Skin / Hand protection:	Wear protective gloves.		
Other:	Wear suitable protective clothing.		
Respiratory protection:	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.		
Thermal hazards:	Wear appropriate thermal protective clothing, when necessary.		
General Hygiene Considerations:	Avoid contact with eyes. Avoid contact with skin. When using, do not eat, drink or smoke. Keep away from food or drink. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the work place. Handle in accordance with good industrial hygiene and safety practice.		

9. PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance

Form:	Paste
Color:	White
Odor:	Acetic acid odor

Odor Threshold:	Not available
pH:	Not available
Melting point / freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash Point:	141.8 °F (> 96 °C) Closed cup
Evaporative rate:	< 1 (Butyl Acetate = 1)
Flammability (solid, gas):	Not applicable
Upper / Lower flammability or explosive limits:	
Flammability limit – lower (%):	No data
Flammability limit – upper (%):	No data
Explosive limit – Lower (%):	Not available
Explosive limit – Upper (%):	Not available
Vapor pressure:	Negligible (25 °C)
Vapor density:	> 1 (air=1)
Relative density:	1.04 (25 °C)
Solubility (water):	Not soluble
VOC Content:	30 grams per liter
Partition coefficient: (n-octanol / water)	Not applicable
Auto-ignition temperature:	No data
Decomposition temperature:	Not available
Viscosity:	Not applicable
Molecular weight:	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	No hazardous reaction known under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous Reactions	Hazardous polymerization does not occur.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Water and moisture.
Hazardous decomposition products:	This product reacts with water, moisture, or humid air to evolve following compounds. Acetic acid. Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon dioxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion: Expected to be a low ingestion hazard.
Inhalation: Prolonged inhalation may be harmful.
Skin contact: No adverse effects due to skin contact are expected.
Eye contact: Direct contact with eyes may cause temporary irritation.

Symptoms related to the

physical, chemical, and
toxicological characteristics:

Information on toxicological effects

Acute toxicity

Toxicological data

Decomposition

	CAS #	Species	Test Results
Acetic acid	64-19-7		
Acute			
Dermal			
LD50		Rabbit	1060 mg/kg
Inhalation			
LC 50		Guinea	5000 ppm, 1 hours
		Pig	
		Mouse	5620 ppm, 1 hours
		Rat	11.4 mg/l, 4hours
Oral			
LD50		Mouse	4960 mg/kg
		Rabbit	1200 mg/kg
		Rat	3.31 g/kg
Distillates (petroleum)			
hydrotreated middle			
Oral		Rat	> 5,000 mg/kg
Inhalation			
LC 50		Rat	1.78 mg/l, 4 hours
Dermal			
		Rat	> 2,000 mg/kg

Skin corrosion / irritation: Causes severe skin burns and eye damage. (Acetic acid)
 Skin-Rabbit: 500 mg/24hr.MILD (Octamethylcyclotetrasiloxane)

Serious eye damage/eye irritation: Causes serious eye damage. (Acetic acid)
 Eye – Rabbit: MILD (Octamethylcyclotetrasiloxane)

Respiratory Sensitization: Not available.



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Skin Sensitization:	No evidence of sensitization (Octamethylcyclotetrasiloxane)
Germ Cell Mutagenicity:	Negative (Bacteria) (Octamethylcyclotetrasiloxane)
Carcinogenicity:	The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide. Titanium oxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans. Not listed
IARC Monographs, Overall Evaluation of Carcinogenicity.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):	
Reproductive Toxicity:	Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation and lactation resulted in decreases in live litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 and 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter size. The significance of these findings to humans is not known. (Octamethylcyclotetrasiloxane)
Specific target organ toxicity – single exposure:	Not available
Specific target organ toxicity – repeated exposure:	Repeated inhalation or oral exposure of mice and rats to Octamethylcyclotetrasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. A two year combined chronic and carcinogenicity assay was conducted on Octamethylcyclotetrasiloxane. Rats were exposed by whole-body vapor inhalation 6hrs /day, 5 days a week for up to 104 weeks to 0, 10, 30, 150 or 700 ppm of Octamethylcyclotetrasiloxane. The increase in incidence of (uterine) endometrial cell hyperplasia and uterine adenomas

	(benign tumors) were observed in female rats at 700 ppm. Since these effects only occurred at 700 ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing Octamethylcyclotetrasiloxane would result in a significant risk to humans. (Octamethylcyclotetrasiloxane)
Aspiration hazard:	The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard. Distillates (petroleum), hydrotreated middle
Chronic effects:	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further Information:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid.

12. ECOLOGICAL CONSIDERATIONS

Ecotoxicity

- Octamethylcyclotetrasiloxane: May cause long lasting harmful effects to aquatic life.

Components		Species	Test Results
Titanium oxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water Flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus Heteroclitus)	> 1000 mg/l, 96 hours

Decomposition

Acetic acid

(CAS 64-19-7)

Aquatic

Crustacea	EC50	Water flea (Daphnia Magna)	65 mg/l, 48 hours
Fish	LC50	Bluegill (Leponis Macrochirus)	75mg/l, 96 hours

Persistence and degradability: Not available.

Bioaccumulative potential: Bio concentration Factor (BCF) / (Flathead minnow): 12400

Octamethylcyclotetrasiloxane.

Mobility in Soil: Not available.

Other adverse effects: Not available

13. DISPOSAL CONSIDERATIONS

Can be land-filled for cured product or burned in a chemical incinerator equipped with an afterburner and scrubber. Do not dispose the emptied container unlawfully. Observe all federal, state & local laws.

14. TRANSPORT INFORMATION

DOT: Not regulated as dangerous good.

IATA: Not regulated as dangerous good.

IMDG: Not regulated as dangerous good.

Transport in bulk according to This product is not intended to be transported in bulk.

Annex II of MARPDL 73/78 and

The IBC Code:

15. REGULATORY INFORMATION

US federal regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not listed

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA)

SARA 313 (TRI reporting)

US State Regulations

- **Massachusetts: Substance List:**
Titanium oxide (CAS 13463-67-7)
- **New Jersey Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Pennsylvania Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Rhode Island RTK:** Not regulated.
- **California Proposition 65:** The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards.
- **US California Proposition 65 – CRT: Listed date / Carcinogenic substance**
Titanium oxide (CAS 13463-67-7) Listed: September 2, 2011

International Inventories

Country(s) or region	Inventory Name	On Inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non Domestic Substances (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemicals	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances	Yes
Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
United States	Toxic Substances Control Act (TSCA) Inventory	Yes

16. OTHER INFORMATION

Prepared by: Silco Inc.

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

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Safety Data Sheet

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Document Group: 11-4257-9
Issue Date: 04/24/15

Version Number: 62.00
Supersedes Date: 04/17/15

SECTION 1: Identification

1.1. Product identifier

3M™ Super 77 Classic Spray Adhesive

Product Identification Numbers

62-4437-4920-5, 62-4437-4921-3, 62-4437-4930-4, 62-4437-4935-3, 62-4437-4950-2, 62-4437-4955-1

1.2. Recommended use and restrictions on use

Recommended use

Aerosol Adhesive, Industrial use

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Flammable Aerosol: Category 2.

Reproductive Toxicity: Category 2.

Simple Asphyxiant.

Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (central nervous system): Category 3.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

Flammable aerosol.

May cause drowsiness or dizziness.

Suspected of damaging fertility or the unborn child.

May displace oxygen and cause rapid suffocation.

Causes damage to organs:
cardiovascular system |

Precautionary Statements

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Do not spray on an open flame or other ignition source.

Pressurized container: Do not pierce or burn, even after use.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see Notes to Physician on this label).

Storage:

Protect from sunlight. Do not expose to temperatures exceeding 50C/122F.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

2.3. Hazards not otherwise classified

Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal.

18% of the mixture consists of ingredients of unknown acute dermal toxicity.

18% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt

Non-Hazardous Components	Trade Secret*	15 - 40 Trade Secret *
Hydrotreated light naphtha (petroleum)	64742-49-0	10 - 30 Trade Secret *
Cyclohexane	110-82-7	10 - 30 Trade Secret *
Propane	74-98-6	7 - 13 Trade Secret *
Isobutane	75-28-5	7 - 13 Trade Secret *
Dimethyl ether	115-10-6	7 - 13 Trade Secret *
Hexane	110-54-3	< 1 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. Get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Aldehydes

Carbon monoxide

Carbon dioxide

Toxic Vapor, Gas, Particulate

Condition

During Combustion

During Combustion

During Combustion

During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Cover spill area with a fire-extinguishing foam. An appropriate aqueous film forming foam (AFFF) is recommended. Collect as much of the spilled material as possible using non-sparking tools. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Hexane	110-54-3	ACGIH	TWA:50 ppm	Skin Notation
Hexane	110-54-3	OSHA	TWA:1800 mg/m3(500 ppm)	
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Cyclohexane	110-82-7	OSHA	TWA:1050 mg/m3(300 ppm)	
Dimethyl ether	115-10-6	AIHA	TWA:1880 mg/m3(1000 ppm)	
Dimethyl ether	115-10-6	CMRG	TWA:1000 ppm	
Hydrotreated light naptha (petroleum)	64742-49-0	CMRG	TWA:50 ppm	
Propane	74-98-6	ACGIH	Limit value not established.	
Propane	74-98-6	OSHA	TWA:1800 mg/m3(1000 ppm)	
Isobutane	75-28-5	ACGIH	STEL:1000 ppm	
Natural gas	75-28-5	ACGIH	Limit value not established.	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety Glasses with side shields

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Gas
Odor, Color, Grade:	light cream colored, sweet/fruity odor.
Odor threshold	No Data Available
pH	Not Applicable
Melting point	No Data Available
Flash Point	-42.00 °F [Test Method: Tagliabue Closed Cup]
Evaporation rate	1.90 [Ref Std: ETHER=1]
Flammability (solid, gas)	Flammable Aerosol: Category 2.
Flammable Limits(LEL)	Approximately 1.5 % volume
Flammable Limits(UEL)	Approximately 8.6 % volume
Vapor Density	2.97 [Ref Std: AIR=1]
Density	0.697 g/ml
Specific Gravity	0.697 [Ref Std: WATER=1]
Solubility in Water	Nil
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available

Autoignition temperature	No Data Available
Decomposition temperature	Not Applicable
Viscosity	Not Applicable
Hazardous Air Pollutants	<=1 % weight [Test Method: Calculated]
Volatile Organic Compounds	75 % [Test Method: calculated per CARB title 2]
Heat of Combustion	<=43.5 kJ/g
Solids Content	15 - 40 %

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Intentional concentration and inhalation may be harmful or fatal.

Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose

and throat pain.

May cause additional health effects (see below).

Skin Contact:

Prolonged or repeated exposure may cause:

Dermal Defatting: Signs/symptoms may include localized redness, itching, drying and cracking of skin.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Single exposure, above recommended guidelines, may cause:

Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor (4 hr)		No data available; calculated ATE > 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Hydrotreated light naptha (petroleum)	Dermal	Rabbit	LD50 > 3,160 mg/kg
Hydrotreated light naptha (petroleum)	Inhalation-Vapor (4 hours)	Rat	LC50 > 14.7 mg/l
Hydrotreated light naptha (petroleum)	Ingestion	Rat	LD50 > 5,800 mg/kg
Isobutane	Inhalation-Gas (4 hours)	Rat	LC50 276,000 ppm
Propane	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm
Cyclohexane	Dermal	Rat	LD50 > 2,000 mg/kg
Cyclohexane	Inhalation-Vapor (4 hours)	Rat	LC50 > 32.9 mg/l
Cyclohexane	Ingestion	Rat	LD50 6,200 mg/kg
Non-Hazardous Components	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Dimethyl ether	Inhalation-Gas (4 hours)	Rat	LC50 164,000 ppm

Hexane	Dermal	Rabbit	LD50 > 2,000 mg/kg
Hexane	Inhalation-Vapor (4 hours)	Rat	LC50 170 mg/l
Hexane	Ingestion	Rat	LD50 > 28,700 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Overall product		Minimal irritation
Hydrotreated light naptha (petroleum)	Rabbit	Irritant
Isobutane	Professional judgement	No significant irritation
Propane	Rabbit	Minimal irritation
Cyclohexane	Rabbit	Mild irritant
Non-Hazardous Components	Professional judgement	Minimal irritation
Hexane	Human and animal	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Hydrotreated light naptha (petroleum)	Rabbit	Mild irritant
Isobutane	Professional judgement	No significant irritation
Propane	Rabbit	Mild irritant
Cyclohexane	Rabbit	Mild irritant
Hexane	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Hydrotreated light naptha (petroleum)	Guinea pig	Not sensitizing
Hexane	Human	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Hydrotreated light naptha (petroleum)	In Vitro	Not mutagenic
Isobutane	In Vitro	Not mutagenic
Propane	In Vitro	Not mutagenic
Cyclohexane	In Vitro	Not mutagenic
Cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification
Dimethyl ether	In Vitro	Not mutagenic
Dimethyl ether	In vivo	Not mutagenic
Hexane	In Vitro	Not mutagenic
Hexane	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Hydrotreated light naptha (petroleum)	Inhalation	Mouse	Some positive data exist, but the data are not

Dimethyl ether	Inhalation	Rat	sufficient for classification
Hexane	Dermal	Mouse	Not carcinogenic
Hexane	Inhalation	Mouse	Not carcinogenic
			Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Cyclohexane	Inhalation	Not toxic to female reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not toxic to male reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 6.9 mg/l	2 generation
Dimethyl ether	Inhalation	Not toxic to female reproduction	Rat	NOAEL 25,000 ppm	2 years
Dimethyl ether	Inhalation	Not toxic to male reproduction	Rat	NOAEL 25,000 ppm	2 years
Dimethyl ether	Inhalation	Not toxic to development	Rat	NOAEL 40,000 ppm	during organogenesis
Hexane	Ingestion	Not toxic to development	Mouse	NOAEL 2,200 mg/kg/day	during organogenesis
Hexane	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 0.7 mg/l	during gestation
Hexane	Ingestion	Toxic to male reproduction	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Inhalation	Toxic to male reproduction	Rat	LOAEL 3.52 mg/l	28 days

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Hydrotreated light naphtha (petroleum)	Inhalation	central nervous system depression	May cause drowsiness or dizziness		NOAEL Not available	
Hydrotreated light naphtha (petroleum)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Isobutane	Inhalation	cardiac sensitization	Causes damage to organs	Multiple animal species	NOAEL Not available	
Isobutane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Isobutane	Inhalation	respiratory irritation	All data are negative	Mouse	NOAEL Not available	
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Propane	Inhalation	respiratory irritation	All data are negative	Human	NOAEL Not available	
Cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for	Human and	NOAEL Not available	

			classification	animal		
Dimethyl ether	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Rat	LOAEL 10,000 ppm	30 minutes
Dimethyl ether	Inhalation	cardiac sensitization	Some positive data exist, but the data are not sufficient for classification	Dog	NOAEL 100,000 ppm	5 minutes
Hexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Hexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL Not available	8 hours
Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 24.6 mg/l	8 hours

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Isobutane	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 4,500 ppm	13 weeks
Cyclohexane	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 24 mg/l	90 days
Cyclohexane	Inhalation	auditory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.7 mg/l	90 days
Cyclohexane	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL 2.7 mg/l	10 weeks
Cyclohexane	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 24 mg/l	14 weeks
Cyclohexane	Inhalation	peripheral nervous system	All data are negative	Rat	NOAEL 8.6 mg/l	30 weeks
Dimethyl ether	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 25,000 ppm	2 years
Dimethyl ether	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 20,000 ppm	30 weeks
Hexane	Inhalation	peripheral nervous system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 1.76 mg/l	13 weeks
Hexane	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 months
Hexane	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 1.76 mg/l	6 months
Hexane	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 35.2 mg/l	13 weeks
Hexane	Inhalation	auditory system immune system eyes	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	heart skin endocrine system	All data are negative	Rat	NOAEL 1.76 mg/l	6 months
Hexane	Ingestion	peripheral nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Ingestion	endocrine system hematopoietic system liver immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	13 weeks

		kidney and/or bladder				

Aspiration Hazard

Name	Value
Hydrotreated light naptha (petroleum)	Aspiration hazard
Cyclohexane	Aspiration hazard
Hexane	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. The facility should be equipped to handle gaseous waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information**15.1. US Federal Regulations**

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Cyclohexane	110-82-7	10 - 30

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 4 Instability: 0 Special Hazards: None

Aerosol Storage Code: 3

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 2 Flammability: 4 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: April 23, 2019

1 Identification

- **Product identifier**
- **Trade name:** HA19-Z
- **Other means of identification:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Adhesive.
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
Mon-Eco Industries, Inc.
5 Joanna Ct.
East Brunswick, NJ 08816
Phone: 732-257-7942
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)



MON-ECO INDUSTRIES, INCORPORATED

2 Hazard(s) identification

- **Classification of the substance or mixture**
Flam. Liq. 2 H225 Highly flammable liquid and vapor.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.
- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**


GHS02 GHS07
- **Signal word:** Danger
- **Hazard statements:**
H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
- **Precautionary statements:**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist, vapors, or spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.

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- P280 Wear protective gloves and eye protection.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P312 Call a poison center/doctor if you feel unwell.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P370+P378 In case of fire: Use foam, powder, or carbon dioxide for extinction.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

• Chemical characterization: Mixtures

• Components:

79-20-9	Methyl acetate	 Flam. Liq. 2, H225  Eye Irrit. 2A, H319; STOT SE 3, H336	40-60%
1332-58-7	Kaolin		10-20%
1317-65-3	Limestone		5-10%

• Additional information:

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.
For the wording of the listed Hazard Statements, refer to section 16.

4 First aid measures

• Description of first aid measures

• After inhalation:

Supply fresh air; consult doctor in case of complaints.
Provide oxygen treatment if affected person has difficulty breathing.

• After skin contact:

Immediately remove any clothing soiled by the product.
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.

• After eye contact:

Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

• After swallowing:

Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.

• Most important symptoms and effects, both acute and delayed:

Headache
Cramp
Dizziness

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- Coughing
- Breathing difficulty
- Causes eye irritation.
- Slight irritant effect on skin and mucous membranes.
- Gastric or intestinal disorders when ingested.
- Nausea in case of ingestion.
- **Danger:** Vapors may cause drowsiness and dizziness.
- **Indication of any immediate medical attention and special treatment needed:** Treat symptomatically.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
 - Foam
 - Fire-extinguishing powder
 - Gaseous extinguishing agents
 - Carbon dioxide
 - Water fog / haze
- **For safety reasons unsuitable extinguishing agents:** Water spray
- **Special hazards arising from the substance or mixture**
 - Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**
 - Wear self-contained respiratory protective device.
 - Wear fully protective suit.
- **Additional information:**
 - Eliminate all ignition sources if safe to do so.
 - Cool endangered containers with water fog.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 - Use respiratory protective device against the effects of fumes/dust/aerosol.
 - Wear protective equipment. Keep unprotected persons away.
 - Ensure adequate ventilation.
 - Keep away from ignition sources.
 - Protect from heat.
- **Environmental precautions** Avoid release to the environment.
- **Methods and material for containment and cleaning up**
 - Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).
 - Send for recovery or disposal in suitable receptacles.
 - Used rags or other cleaning materials should be soaked with water and placed in a sealed container.
- **Reference to other sections**
 - See Section 7 for information on safe handling.
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.

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7 Handling and storage

• Handling

• Precautions for safe handling:

- Handle with care.
- Keep out of reach of children.
- Avoid breathing mist, vapors, or spray.
- Avoid contact with the eyes and skin.
- Avoid splashes or spray in enclosed areas.
- Use only in well ventilated areas.
- Rags, metal wools / cuttings / shavings and waste papers soaked with product must be placed in a sealed metal container rated for flammable waste.

• Information about protection against explosions and fires:

- Keep ignition sources away - Do not smoke.
- Protect against electrostatic charges.
- Fumes can combine with air to form an explosive mixture.
- Flammable gas-air mixtures may be formed in empty containers/receptacles.

• Conditions for safe storage, including any incompatibilities

• Requirements to be met by storerooms and receptacles:

- Avoid storage near extreme heat, ignition sources or open flame.
- Store in cool, dry conditions in well sealed receptacles.

• Information about storage in one common storage facility:

- Store away from foodstuffs.
- Store away from oxidizing agents.

• Specific end use(s) No relevant information available.

8 Exposure controls/personal protection

• Control parameters

• Components with limit values that require monitoring at the workplace:

79-20-9 Methyl acetate

PEL (USA)	Long-term value: 610 mg/m ³ , 200 ppm
REL (USA)	Short-term value: 760 mg/m ³ , 250 ppm Long-term value: 610 mg/m ³ , 200 ppm
TLV (USA)	Short-term value: 757 mg/m ³ , 250 ppm Long-term value: 606 mg/m ³ , 200 ppm
EL (Canada)	Short-term value: 250 ppm Long-term value: 200 ppm
EV (Canada)	Short-term value: 755 mg/m ³ , 250 ppm Long-term value: 605 mg/m ³ , 200 ppm
LMPE (Mexico)	Short-term value: 250 ppm Long-term value: 200 ppm

1332-58-7 Kaolin

PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³

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TLV (USA)	*total dust **respirable fraction Long-term value: 2* mg/m ³ E; as respirable fraction
EL (Canada)	Long-term value: 2 mg/m ³
EV (Canada)	Long-term value: 2(D) mg/m ³ respirable
LMPE (Mexico)	Long-term value: 2* mg/m ³ A4, *fracción respirable
1317-65-3 Limestone	
PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV (USA)	TLV withdrawn

Exposure controls

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes.

Avoid close or long term contact with the skin.

Engineering controls: No relevant information available.

Breathing equipment:

Wear appropriate NIOSH respirator when ventilation is inadequate and occupational exposure limits are exceeded.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Eye protection:



Safety glasses

Body protection: Protective work clothing

Limitation and supervision of exposure into the environment

No relevant information available.

Risk management measures No relevant information available.

9 Physical and chemical properties

Information on basic physical and chemical properties

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· Appearance:	
Form:	Paste
Color:	Tan.
· Odor:	Mild
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Melting point/Melting range:	Not determined.
· Boiling point/Boiling range:	>35 °C (>95 °F)
· Flash point:	<-13 °C (<8.6 °F)
· Flammability (solid, gaseous):	Not applicable.
· Auto-ignition temperature:	Not determined.
· Decomposition temperature:	Not determined.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits	
Lower:	Not determined.
Upper:	Not determined.
· Oxidizing properties:	Non-oxidizing.
· Vapor pressure:	Not determined.
· Density:	
Relative density:	1.12
Vapor density:	Not determined.
Evaporation rate:	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Other information	No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** Keep away from heat and direct sunlight.
- **Possibility of hazardous reactions**
 - Highly flammable liquid and vapor.
 - Reacts with strong alkali.
 - Reacts with strong acids and oxidizing agents.
 - Used empty containers may contain product gases which form explosive mixtures with air.
 - Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomized.

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Toxic fumes may be released if heated above the decomposition point.

- **Conditions to avoid** Excessive heat.
- **Incompatible materials** Oxidizers, strong bases, strong acids
- **Hazardous decomposition products**
Carbon monoxide and carbon dioxide
Hydrocarbons

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** Slight irritant effect on skin and mucous membranes.
- **On the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

• IARC (International Agency for Research on Cancer):

None of the ingredients are listed.

• NTP (National Toxicology Program):

None of the ingredients are listed.

• OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients are listed.

• Probable route(s) of exposure:

Ingestion.
Inhalation.
Eye contact.
Skin contact.

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** May cause drowsiness or dizziness.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:** Avoid release to the environment.
- **Other adverse effects** No relevant information available.

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13 Disposal considerations

· Waste treatment methods

· Recommendation:

Can be disposed of with household garbage after solidification following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

· Uncleaned packagings

· Recommendation: Disposal must be made according to official regulations.

14 Transport information

· UN-Number

· DOT, ADR/RID/ADN, IMDG, IATA UN1133

· UN proper shipping name

· DOT, IATA Adhesives
· ADR/RID/ADN, IMDG ADHESIVES

· Transport hazard class(es)

· DOT



· Class 3
· Label 3

· ADR/RID/ADN



· Class 3 (F1)
· Label 3

· IMDG, IATA



· Class 3
· Label 3

· Packing group

· DOT, ADR/RID/ADN, IMDG, IATA II

· Environmental hazards

(Cont'd. on page 9)

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• Marine pollutant: No

• Special precautions for user Warning: Flammable liquids

• Danger code (Kemler): 33

• EMS Number: F-E,S-D

• Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

• Transport/Additional information:

• DOT



Limited Quantity for packages less than 30 kg gross and inner packagings less than 5 L each.

• ADR/RID/ADN



Limited Quantity for packages less than 30 kg gross and inner packagings less than 5 L each.

• IMDG



Limited Quantity for packages less than 30 kg gross and inner packagings less than 5 L each.

• IATA



Limited Quantity for packages less than 30 kg gross and inner packagings less than 0.5 L each / 1 L net.

15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture

• United States (USA)

• SARA

• Section 302 (extremely hazardous substances):

None of the ingredients are listed.

• Section 355 (extremely hazardous substances):

None of the ingredients are listed.

• Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

• TSCA (Toxic Substances Control Act)

All ingredients are listed or exempt.

(Cont'd. on page 10)

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• **Proposition 65 (California)**

• **Chemicals known to cause cancer:**

None of the ingredients are listed.

• **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

• **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

• **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

• **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

• **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

• **Canadian Domestic Substances List (DSL): (Substances not listed.)**

All ingredients are listed or exempt.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

OSHA: Occupational Safety & Health Administration

Flam. Liq. 2: Flammable liquids – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• **Sources**

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

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Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: www.chemtelinc.com

SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Manufacturer's name and address:

Supplier's name and address:



Refer to Manufacturer

Armacell LLC
P.O. Box 839
7600 Oakwood Street Extension
Mebane, NC 27302
USA

Information Telephone No. : (919) 304-3846
Website Address : <http://www.armacell.us>
24 Hr Emergency Telephone # : CHEM-TEL: 1-800-255-3924 OR 1-813-248-0585 (call collect)
Product Identifier : **Armaflex® 520 Adhesive**
Chemical Name : N/Ap Chemical Family : Mixture
Chemical Formula : N/Ap Trade Name/Synonyms : Armaflex 520
Molecular Weight : N/Ap Material Use : Solvent dispersed synthetic rubber and resin adhesive.
Uses Advised Against : No information available.
HMIS Rating : * - Chronic Hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
Health: 2 Flammability: 3 Reactivity: 0

SECTION 2 - HAZARD IDENTIFICATION

GHS Classification per 29 CFR 1910.1200 (OSHA HCS 2012) and HPR (WHMIS 2015)

Flammable liquids; Category 2
Skin corrosion/irritation; Category 2
Serious eye damage/eye irritation; Category 2A
Reproductive toxicity; Category 2
Specific target organ toxicity, single exposure; Narcotic effects; Category 3
Sensitization, Skin; Category 1
Specific target organ toxicity, repeated exposure; Category 2
Aspiration hazard; Category 1

GHS Pictograms



Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
Causes skin irritation.
Causes serious eye irritation.
Suspected of damaging fertility or the unborn child via inhalation.
May cause drowsiness or dizziness.
May cause an allergic skin reaction.
May be fatal if swallowed and enters airways.
May cause damage to organs <Central Nervous System, Peripheral Nervous System, Auditory System, and Eyes> through prolonged or repeated exposure.

Precautionary Statements

Obtain special instructions before use. (See Section 7.) Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/.../equipment. Use only non-sparking tools. Take precautionary measures against static discharge. In case of fire: Use fire extinguishers suitable for Classes B, C, or E for extinction. Do not breathe vapors. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection. Wash hands and exposed skin thoroughly after handling. Wash contaminated clothing before reuse. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents / container in accordance with federal, state, and local laws. Do not allow product to enter drains.

Hazards Not Otherwise Classified

Vapor may cause flash fire! May be an aspiration hazard. Aspiration may occur during swallowing or vomiting, resulting in lung injury. In case of ingestion, do not induce vomiting.

% With Unknown Acute Toxicity : 5% by weight of this product is comprised of ingredients with unknown acute toxicity.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (by weight)
Acetone	67-64-1	30.00 – 60.00
Hexanes	110-54-3	10.00 – 30.00
Toluene	108-88-3	10.00 – 30.00
p-tert-Butylphenol formaldehyde resin	25085-50-1	5.00 – 10.00

The exact percentages of the ingredients have been withheld by the manufacturer as trade secrets.

SECTION 4 – FIRST AID MEASURES

- General** : IF exposed or concerned: Get medical advice/attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: call a doctor/physician.
- Skin contact** : Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice.
- Eye contact** : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
- Ingestion** : Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.
- Notes for Physician** : Treat symptomatically.
- Signs and symptoms of short-term (acute) exposure**
- Inhalation* : May cause irritation to the nose, throat, and respiratory tract. Inhalation of high concentrations may cause CNS effects such as nausea, headache, dizziness, fatigue, unconsciousness, and coma. May cause motor incoordination and speech abnormalities. Breathing high concentrations of this material, for example in an enclosed space or by intentional abuse, can cause irregular heartbeats which can cause death.
- Skin* : May cause moderate skin irritation. Product may be absorbed through the skin, producing effects similar to inhalation or ingestion. Allergic skin reaction (non-

- photo-induced): Symptoms may include redness, swelling, blistering, and itching.
- Eyes** : Direct contact will cause moderate to severe irritation to the eyes. Symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Ingestion** : May cause irritation to the mouth, throat, and stomach. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea. This material can get into the lungs (aspiration) during swallowing or vomiting. Small amounts in the lungs can cause chemical pneumonitis, possibly leading to chronic lung dysfunction or death.

Effects of long-term (chronic) exposure

- : Chronic exposure may cause drying, cracking, and defatting of the skin. Chronic effects of ingestion and subsequent aspiration into the lungs may cause pneumatocele (lung cavity) formation and chronic lung dysfunction. Prolonged occupational overexposure to solvents may cause irreversible brain and nervous system damage (sometimes referred to as "Solvent or Painter's Syndrome"). Intentional misuse by intentionally concentrating and inhaling the vapors from this product may be harmful or fatal. Toluene, a component of this product, may cause harm to the human fetus, based on tests with laboratory animals. Long term overexposure to Toluene has been associated with peripheral neuropathy (damage to the nerves of the hands and feet), liver effects, kidney effects, impaired color vision and hearing damage.

Indication of need for immediate medical attention or special treatment

- : Difficulty breathing persists after removing the person to fresh air.
Any exposure to the eye which causes irritation.
Ingestion.

SECTION 5 – FIRE FIGHTING MEASURES

- Suitable extinguishing media** : Carbon dioxide, dry chemical powder, appropriate foam or water fog.
- Unsuitable extinguishing media** : water jet
- Hazardous combustion products** : Carbon oxides; Hydrocarbons; Aldehydes; Hydrogen chloride gas; other unidentified organic compounds.

Special fire-fighting procedures/equipment

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. After fires have been extinguished, carefully clean all equipment and surfaces exposed to fumes.

- Environmental precautions** : Do not allow material to enter drains or contaminate ground water system.

Fire hazards/conditions of flammability

- : Highly flammable liquid. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapors may be heavier than air and may collect in confined and low-lying areas. Vapor can travel considerable distance and flashback to a source of ignition. Material will float on water and can be re-ignited at the water's surface. Static discharge may ignite this product's vapors.

Flammability classification (OSHA 29 CFR 1910.1200 and WHMIS 2015)

- : Flammable Liquid, Category 2.

Flammability classification (NFPA)

- : Flammable Liquid Class 1B.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions

- : Restrict access to area until completion of clean-up. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to Section 8 on this Safety Data Sheet, EXPOSURE CONTROLS /

- PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.
- Environmental precautions** : Do not allow product to enter waterways. Do not allow material to contaminate ground water system.
- Spill response / clean-up** : Ventilate area of release. Eliminate all ignition sources. Stop spill or leak at source if safely possible. Use non-sparking tools to contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g., sand), then place absorbent material into a container for later disposal (see Section 13.) Do not flush into surface water or sanitary sewer system. Notify the appropriate authorities as required.
- Incompatible materials** : See Section 10.
- Special spill response procedures** : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).
US CERCLA Reportable quantity (RQ): Hexane (5000 lbs / 2270 kg); Acetone (5000 lbs / 2270 kg); Toluene (1000 lbs / 454 kg).

SECTION 7 – HANDLING AND STORAGE

- Special Instructions** : HIGHLY FLAMMABLE LIQUID AND VAPOR. May cause flash fire. Keep away from fire, sources of heat, or sources of electrical discharges. Aspiration Hazard – may enter lungs and cause damage. If ingested, do not induce vomiting. Inhaling fumes may cause dizziness, drowsiness, nausea, headaches, and/or other Central Nervous System (CNS) symptoms. Contains a material that may cause peripheral nervous system damage. Breathing high concentrations can cause irregular heartbeats which may be fatal. Developmental hazard - Contains Toluene, which may cause birth defects or other reproductive harm. Avoid breathing vapors.
- Safe handling procedures** : Wear chemically resistant protective equipment during handling. Use in a well-ventilated area. Training the workers on the potential health hazards associated with product vapor is important. Do not breathe vapors. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Keep away from oxidizing materials. Keep containers tightly closed when not in use. Wash hands and exposed skin thoroughly after handling. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid).
- Storage requirements** : Store in a cool, dry, well-ventilated area. No smoking in the area. Do not store near any incompatible materials (see Section 10). Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Protect against physical damage.
- Incompatible materials** : See Section 10.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Permissible exposure levels** : No exposure limits have been established for the product itself. Below are exposure limits for the components in the product.

Ingredients	CAS #	ACGIH TLV		OSHA PEL	
		TWA	STEL	PEL	STEL
Acetone	67-64-1	500 ppm	750 ppm	1000 ppm TWA 2400 mg/m ³ TWA	N/Av
Hexanes	110-54-3	50 ppm	N/Av	500 ppm 1800 mg/m ³	N/Av
Toluene	108-88-3	20 ppm	N/Av	200 ppm	300 ppm (10 min)

p-tert-Butylphenol formaldehyde resin	25085-50-1	N/Av	N/Av	N/Av	N/Av

Ventilation and engineering measures

: Use with adequate ventilation. Provide adequate cross air circulation. Use explosion-proof general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. If the TLV is exceeded, wear a NIOSH/MSHA-approved organic vapor respirator.

Skin protection

: Impervious gloves must be worn when using this product. Glove materials such as nitrile rubber or Viton (fluorocarbon rubber) are recommended. Advice should be sought from glove suppliers regarding the glove's breakthrough time for the ingredients listed in Section 3.

Eye / face protection

: Chemical goggles are recommended. A full face shield may also be necessary.

Other protective equipment

: Full chemical-resistant protective clothing should be used whenever splashing is anticipated. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

: Avoid contact with eyes, skin and clothing. Do not breathe vapors. Do not eat, drink or smoke when using this product. Clean all equipment and clothing, and shower with mild soap and water at end of each work shift.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid	Appearance	: yellow liquid.
Odor	: Characteristic solvent odor		
Odor threshold	: N/Av	pH	: N/Av
Specific gravity	: approx. 0.83	Boiling point	: > 133°F (>56.5°C)
Coefficient of water/oil distribution	: N/Av	Melting/Freezing point	: N/Av
Solubility in water	: negligible	Vapor pressure (mm Hg @ 20°C / 68°F)	: 180
Evaporation rate (n-Butyl acetate = 1)	: N/Av	Vapor density (Air = 1)	: N/Av
Volatiles (% by weight)	: 80 – 82	General information	: N/Av
Volatile organic compounds (VOCs)	: 615 g/L (Calculated, SCAQMD Rule 1168)		
Particle size	: N/Av	Flammability classification (GHS)	: Flammable Liquid Cat. 2
Flash point	: -15°F (-26°C)	Lower flammable limit (% by vol)	: Not available
Flash point method	: Setaflash closed	Upper flammable limit (% by vol)	: Not available
Auto-ignition temperature	: N/Av	Decomposition temperature	: Not available
Viscosity	: Not available	Oxidizing properties	: Not available
Explosion data: Sensitivity to mechanical impact / static discharge			
: Not expected to be sensitive to mechanical impact. Static discharge could ignite the vapors of this product.			

SECTION 10 – REACTIVITY AND STABILITY INFORMATION

Stability and reactivity	: Stable under the recommended storage and handling conditions prescribed.
Hazardous polymerization	: Hazardous polymerization does not occur.
Conditions to avoid	: Keep this product away from heat, sparks, flame, and other sources of ignition (e.g., pilot lights, electric motors, static electricity).
Materials to avoid and incompatibility	
: Strong oxidizing agents; Reducing agents; Acids, Bases.	
Hazardous decomposition products	
: None known, refer to hazardous combustion products in Section 5.	

SECTION 11 – TOXICOLOGICAL INFORMATION

Target organs : Central Nervous System (CNS); Eyes; Skin; Kidneys; Lungs; Liver; Heart.
Routes of Exposure : *Inhalation*: YES *Skin Absorption*: YES *Skin and Eyes*: YES *Ingestion*: YES
Toxicological data : See below for individual ingredient acute toxicity data.

Ingredients		LC50 (4 hr) Inhalation, rat, mg/L	LD50	
			Oral, rat, mg/kg	Dermal, rabbit, mg/kg
Acetone	67-64-1	50.1	5800	20000
Hexane	110-54-3	31.86	16000	> 2000
Toluene	108-88-3	12.5	636	8390
p-tert-Butylphenol formaldehyde resin	25085-50-1	N/Av	N/Av	N/Av

Calculated Acute Toxicity Estimates for the Product

Inhalation : > 25 mg/L
Oral : > 2000 mg/kg
Dermal : > 4000 mg/kg
Carcinogenic status : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
Reproductive effects : Contains Toluene. Toluene may cause fetotoxic effects at doses which are not maternally toxic, based on animal data.
Germ Cell Mutagenicity : None known.
Epidemiology : Not available.
Sensitization to material : This product contains a component known to cause allergic skin sensitization reactions.
Synergistic materials : N/Av
Irritancy : Severe eye irritant. Moderate irritant for respiratory system and skin.
Other important hazards : See Section 2 for additional information.

SECTION 12 – ECOLOGICAL INFORMATION

Environmental effects : The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

Important environmental characteristics

: No data is available on the product itself.
Ecotoxicological : No data is available on the product itself.
Ecotoxicity : No data available.
Biodegradability : No data available.
Bioaccumulative potential : No data available.
Mobility in soil : No data available.
PBT and vPvB assessment : No data available.
Other adverse effects : No data available.

SECTION 13 – DISPOSAL CONSIDERATION

Handling for disposal : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapor) and can be dangerous. Do not cut, weld, drill or grind on or near this container.
Methods of disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste

identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 – TRANSPORTATION INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
TDG Additional Information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to TDG Part 1: 1.11, 1.17, 1.33; and Schedule 1.				
49 CFR/DOT	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
49 CFR/DOT Additional Information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to 49 CFR 173.150(b) and Special Provision 149.				

SECTION 15 – REGULATORY INFORMATION

Canadian Information:

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR). This SDS contains all of the information required by the HPR.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): Hexane (5000 lbs / 2270 kg); Acetone (5000 lbs / 2270 kg); Toluene (1000 lbs / 454 kg).

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes:

Fire hazard
Acute hazard
Chronic hazard.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above de minimus concentrations. This product contains: Hexane; Toluene.

U.S. State Right To Know Laws

California Proposition 65: Warning! This product contains a chemical known to the State of California to cause developmental harm. This product contains: Toluene.

Other State Right to Know Laws:

On State RTK List?	CAS No.	CA	MA	MN	NJ	NY	PA	RI
Acetone	67-64-1	YES	YES	YES	YES	YES	YES	YES
Hexane	110-54-3	YES	YES	YES	YES	YES	YES	YES
Toluene	108-88-3	YES	YES	YES	YES	YES	YES	YES

SECTION 16 – OTHER INFORMATION

HMIS Rating

: * - Chronic Hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
*Health: *2 Flammability 3 Physical Hazard: 0*

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CNS: Central Nervous System
DOT: Department of Transportation
DSL: Domestic Substances List
EPA: Environmental Protection Agency
GHS: Globally Harmonized System
IARC: International Agency for Research on Cancer
Inh: Inhalation
N/Av: Not Available
N/Ap: Not Applicable
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Disclaimer of Liability

The Information presented herein is supplied as a guide to those who handle or use this product and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive. The manner and conditions of use and handling may involve other and additional considerations. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.

No warranty of any kind is given or implied. Armacell LLC will not be liable for any damages, losses, injuries or consequential damages which may result from the use or reliance on any information contained herein. This Safety Data Sheet is valid for three (3) years.

Prepared By:

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Visit our Website at

: <http://www.armacell.us>

Revision date:

: 10-May 2015

End of Document

Safety Data Sheet
 according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
 OSHA GHS

Printing date 20.03.2015

Revision: 19.03.2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** Armaflex WB Finish
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
 No further relevant information available.
- **Application of the substance / the mixture** Coating compound/ Surface coating/ paint
- **1.3 Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
 Armacell, LLC
 7600 Oakwood St. Ext.
 Mebane, NC 27302
 Phone: 919-304-3846
- **1.4 Emergency telephone number:**
 ChemTel Inc.
 (800)255-3924, +1 (813)248-0585



SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
 The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H317, H360Df, H411.
 Classifications listed also are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).
 The following classifications are applicable only to OSHA (USA) regulations and not the specific CLP regulation: H360.
 Repr. 1 H360: May damage fertility or the unborn child
- health hazard
 Carc. 1B H350 May cause cancer.
 Repr. 1B H360Df May damage the unborn child. Suspected of damaging fertility.
- environment
 Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.
- Skin Sens. 1 H317 May cause an allergic skin reaction.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
- T; Toxic
 R45-60-61: May cause cancer. May impair fertility. May cause harm to the unborn child.

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Xn; Harmful

R62: Possible risk of impaired fertility.



Xi; Sensitising

R43: May cause sensitisation by skin contact.



N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

Additional information:

There are no other hazards not otherwise classified that have been identified.

0 percent of the mixture consists of component(s) of unknown toxicity

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008**

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H317, H360Df, H411.

The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H360.

The product is additionally classified and labelled according to the Globally Harmonized System within the United States (GHS).

The product is classified and labelled according to the CLP regulation.

Hazard pictograms

This pictogram only applicable for EU regulations. Not for use in the United States (OSHA GHS).



GHS07 GHS08 GHS09

Signal word Danger**Hazard-determining components of labelling:**

benzyl butyl phthalate

Attapulgate (Palygorskite)

Quartz (SiO₂)

Petroleum Distillates

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Hazard statements

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H317, H360Df, H411.

The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H360.

H360: May damage fertility or the unborn child.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

H360Df May damage the unborn child. Suspected of damaging fertility.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

The following Precautionary Statements are applicable only to the EU CLP regulations and not the OSHA GHS regulations: P302+P352, P333+P313.

P280 Wear protective gloves.

P273 Avoid release to the environment.

P202 Do not handle until all safety precautions have been read and understood.

P363 Wash contaminated clothing before reuse.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of water.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

Restricted to professional users.

Hazard description:**WHMIS-symbols:**

D2A - Very toxic material causing other toxic effects

**NFPA ratings (scale 0 - 4)**

Health = 1

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = *1

Fire = 0

Reactivity = 0

* - Indicates a long term health hazard from repeated or prolonged exposures.

HMIS Long Term Health Hazard Substances

13463-67-7	titanium dioxide
85-68-7	benzyl butyl phthalate
14808-60-7	Quartz (SiO ₂)

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- 2.3 Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3: Composition/Information on Ingredients

· 3.2 Mixtures

· **Description:** Mixture of substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 85-68-7 EINECS: 201-622-7 Index number: 607-430-00-3	benzyl butyl phthalate ☒ T Repr. Cat. 2, 3 R61; ☒ Xn R62; ☒ N R50/53 ⚠ Repr. 1B, H360Df ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	2,5-10%
CAS: 12174-11-7 EC number: 601-805-5	Attapulgite (Palygorskite) ☒ Xn R40 ⚠ Carc. 2, H351	≤ 2,5%
CAS: 9016-45-9 NLP: 500-024-6	4-nonylphenyl-polyethylene glycol ☒ Xi R36/38; ☒ N R51/53 ⚠ Aquatic Chronic 2, H411 ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319	< 1%
CAS: 14808-60-7 EINECS: 238-878-4	Quartz (SiO ₂) ☒ T R49; ☒ Xn R48 ⚠ Carc. 1A, H350	< 1%
	Petroleum Distillates ⚠ Carc. 1B, H350	< 1%

· SVHC

85-68-7	benzyl butyl phthalate
9016-45-9	4-nonylphenyl-polyethylene glycol

· Dangerous Components (Alternative Classifications):

CAS: 13463-67-7 EINECS: 236-675-5	titanium dioxide	⚠ Carc. 2, H351	10-25%

· Additional information:

For the listed ingredients, the identity and exact percentages are being withheld as a trade secret.
For the wording of the listed risk phrases refer to section 16.

· Notable Trace Components (≤ 0,1% w/w)

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CAS: 55965-84-9
Index number: 613-167-00-5

reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)

■ T R23/24/25; ■ C R34; ■ Xi R43; ■ N R50/53

⚠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331

⚠ Skin Corr. 1B, H314

⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410

⚠ Skin Sens. 1, H317

CAS: 1897-45-6
EINECS: 217-588-1
Index number: 608-014-00-4

chlorothalonil (ISO)

■ T+ R26; ■ Xn R40; ■ Xi R37-41; ■ Xi R43; ■ N R50/53

Carc. Cat. 3

⚠ Acute Tox. 2, H330

⚠ Carc. 2, H351

⚠ Eye Dam. 1, H318

⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410

⚠ Skin Sens. 1, H317; STOT SE 3, H335

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

Immediately remove any clothing soiled by the product.

Take affected persons out into the fresh air.

After inhalation:

Supply fresh air; consult doctor in case of complaints.

Provide oxygen treatment if affected person has difficulty breathing.

After skin contact:

Immediately remove any clothing soiled by the product.

Immediately wash with water and soap and rinse thoroughly.

Launder contaminated clothing before re-use.

If skin irritation continues, consult a doctor.

After eye contact:

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed

Headache

Dizziness

Nausea in case of ingestion.

Gastric or intestinal disorders when ingested.

Allergic reactions

Hazards

May cause cancer.

Suspected of damaging fertility or the unborn child.

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4.3 Indication of any immediate medical attention and special treatment needed

Medical supervision for at least 48 hours.

If necessary oxygen respiration treatment.

Treat skin and mucous membrane with antihistamine and corticoid preparations.

Contains reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1). May produce an allergic reaction.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:**

Foam

Water haze or fog

Fire-extinguishing powder

Carbon dioxide

For safety reasons unsuitable extinguishing agents: None.**5.2 Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters**Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional information Cool endangered receptacles with water spray.**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Particular danger of slipping on leaked/spilled product.

For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.

6.2 Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Send for recovery or disposal in suitable receptacles.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 - Prevent formation of aerosols.
 - Use only in well ventilated areas.
 - Avoid splashes or spray in enclosed areas.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage:**
 - **Requirements to be met by storerooms and receptacles:**
 - Avoid storage near extreme heat, ignition sources or open flame.
 - **Information about storage in one common storage facility:**
 - Store away from foodstuffs.
 - Do not store together with oxidising and acidic materials.
 - **Further information about storage conditions:**
 - Store in cool, dry conditions in well sealed receptacles.
 - Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

Ingredients with limit values that require monitoring at the workplace:

13463-67-7 titanium dioxide

- PEL (USA) Long-term value: 15* mg/m³
*total dust
- REL (USA) See Pocket Guide App. A
- TLV (USA) Long-term value: 10 mg/m³
withdrawn from NIC
- EL (Canada) Long-term value: 10* 3** mg/m³
*total dust; **respirable fraction; IARC 2B
- EV (Canada) Long-term value: 10 mg/m³
total dust

14808-60-7 Quartz (SiO₂)

- PEL (USA) see Quartz listing
- REL (USA) Long-term value: 0,05* mg/m³
*respirable dust; See Pocket Guide App. A
- TLV (USA) Long-term value: 0,025* mg/m³
*as respirable fraction

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EL (Canada)	Long-term value: 0,025 mg/m ³ ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0,10* mg/m ³ *respirable fraction

- **DNELs** No further relevant information available.
- **PNECs** No further relevant information available.
- **Additional information:** The lists valid during the making were used as basis.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Pregnant women should strictly avoid inhalation or skin contact.

Respiratory protection:

Use suitable respiratory protective device when high concentrations are present.

Use respiratory protection when grinding or cutting material.

For spills, respiratory protection may be advisable.

NIOSH or EN approved organic vapor respirator equipped with a dust/mist prefilter should be used.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Safety glasses

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment**
No further relevant information available.

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- Risk management measures
- See Section 7 for additional information.
- No further relevant information available.

SECTION 9: Physical and chemical properties

• 9.1 Information on basic physical and chemical properties

• General Information

• Appearance:

Form:	Liquid
Colour:	White
Odour:	Mild
Odour threshold:	Not determined.

• pH-value: Not determined.

• Change in condition

Melting point/Melting range:	Not Determined.
Boiling point/Boiling range:	>100 °C (>212 °F)

• Flash point: Not applicable.

• Flammability (solid, gaseous): Not applicable.

• Auto/Self-ignition temperature: Not determined.

• Decomposition temperature: Not determined.

• Self-igniting: Product is not self-igniting.

• Danger of explosion: Product does not present an explosion hazard.

• Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

• Vapour pressure at 20 °C (68 °F): 23 hPa (17 mm Hg)

• Density at 20 °C (68 °F): 1,4 g/cm³ (11,683 lbs/gal)

• Relative density: Not determined.

• Vapour density at 20 °C (68 °F): > 1 g/cm³ (> 8,345 lbs/gal) (Air= 1)

• Evaporation rate: Not determined.

• Solubility in / Miscibility with water:

Dispersible.

• Partition coefficient (n-octanol/water): Not determined.

• Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

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9.2 Other information

No further relevant information available.

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SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions**
Toxic fumes may be released if heated above the decomposition point.
Reacts with strong acids and oxidising agents.
- **10.4 Conditions to avoid**
Keep away from heat and direct sunlight.
Store away from oxidising agents.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
Hydrogen chloride (HCl)

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values relevant for classification:** None.
- **Primary irritant effect:**
- **on the skin:** Slight irritant effect on skin and mucous membranes.
- **on the eye:** Slight irritant effect on eyes.
- **Sensitisation:** Sensitisation possible through skin contact.
- **Subacute to chronic toxicity:** No further relevant information available.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant
Danger through skin adsorption.
May cause cancer.
May damage fertility or the unborn child.
- **Sensitisation:** May cause an allergic skin reaction.
- **Repeated dose toxicity:**
May cause damage to organs through prolonged or repeated exposure.
Repeated exposures may result in skin and/or respiratory sensitivity.
May cause cancer.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**
Carc. 1B, Repr. 1B

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SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** Toxic for aquatic organisms
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**
 - **DOT**
 - **ADR, IMDG, IATA**
- Not Regulated
UN3082

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14.2 UN proper shipping name



Limited Quantity for packages less than 30 kg (66 lb) and inner packagings less than 5 L (1.3 gal).

· DOT
· ADR

Not Regulated

· IMDG

3082 ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S. (benzyl butyl phthalate)
ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (benzyl butyl phthalate, chlorothalonil
(ISO)), MARINE POLLUTANT
ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (benzyl butyl phthalate)

· IATA

14.3 Transport hazard class(es)

· DOT
· Class

Not Regulated

· ADR



· Class

9 (M6) Miscellaneous dangerous substances and
articles.
9

· Label

· IMDG, IATA



· Class
· Label

9 Miscellaneous dangerous substances and articles.
9

14.4 Packing group

· DOT
· ADR, IMDG, IATA

Not Regulated

III

14.5 Environmental hazards:

Product contains environmentally hazardous
substances: benzyl butyl phthalate

· Marine pollutant:

Yes

· Special marking (ADR):

Symbol (fish and tree)

· Special marking (IATA):

Symbol (fish and tree)

14.6 Special precautions for user

Symbol (fish and tree)

Warning: Miscellaneous dangerous substances and
articles.

· Danger code (Kemler):

90

· EMS Number:

F-A,S-F

· 14.7 Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code

Not applicable.

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· **Transport/Additional information:**

· **ADR**

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **Transport category**

3

· **Tunnel restriction code**

E

· **IMDG**

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

UN3082, ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S. (benzyl butyl phthalate),
9, III

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **United States (USA)**

· **SARA**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65 (California):**

· **Chemicals known to cause cancer:**

Reference to Attapulgite is based on unbound respirable particles and is not generally applicable to product as supplied.

Reference to Titanium Dioxide is based on unbound respirable particles and is not generally applicable to product as supplied.

Reference to Crystalline Silica and/or Quartz is based on unbound respirable particles and is not generally applicable to product as supplied.

13463-67-7	titanium dioxide
12174-11-7	Attapulgite (Palygorskite)
14808-60-7	Quartz (SiO ₂)
1897-45-6	chlorothalonil (ISO)

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

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• **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

• **Chemicals known to cause developmental toxicity:**

85-68-7 benzyl butyl phthalate

• **Carcinogenic Categories**

• **EPA (Environmental Protection Agency)**

85-68-7 benzyl butyl phthalate

C

• **IARC (International Agency for Research on Cancer)**

13463-67-7 titanium dioxide

2B

85-68-7 benzyl butyl phthalate

3

12174-11-7 Attapulgit (Palygorskite)

2B

14808-60-7 Quartz (SiO₂)

1

• **TLV (Threshold Limit Value established by ACGIH)**

13463-67-7 titanium dioxide

A4

14808-60-7 Quartz (SiO₂)

A2

• **NIOSH-Ca (National Institute for Occupational Safety and Health)**

13463-67-7 titanium dioxide

14808-60-7 Quartz (SiO₂)

• **Canada**

• **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

• **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients are listed.

• **Canadian Ingredient Disclosure list (limit 1%)**

85-68-7 benzyl butyl phthalate

• **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

• **Other regulations, limitations and prohibitive regulations**

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

• **Substances of very high concern (SVHC) according to REACH, Article 57**

85-68-7 benzyl butyl phthalate

9016-45-9 4-nonylphenyl-polyethylene glycol

• **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H350 May cause cancer.
- H351 Suspected of causing cancer.
- H360Df May damage the unborn child. Suspected of damaging fertility.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.
- R36/38 Irritating to eyes and skin.
- R40 Limited evidence of a carcinogenic effect.
- R48 Danger of serious damage to health by prolonged exposure.
- R49 May cause cancer by inhalation.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R61 May cause harm to the unborn child.
- R62 Possible risk of impaired fertility.

Abbreviations and acronyms:

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- WHMIS: Workplace Hazardous Materials Information System (Canada)
- DNEL: Derived No-Effect Level (REACH)
- PNEC: Predicted No-Effect Concentration (REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
- Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
- Carc. 1A: Carcinogenicity, Hazard Category 1A
- Carc. 1B: Carcinogenicity, Hazard Category 1B
- Carc. 2: Carcinogenicity, Hazard Category 2
- Repr. 1B: Reproductive toxicity, Hazard Category 1B
- Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1
- Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1
- Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

Sources

SDS Prepared by:
ChemTel Inc.

(Contd. on page 16)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 20.03.2015

Revision: 19.03.2015

Trade name: Armaflex WB Finish

(Contd. of page 15)

1305 North Florida Avenue
Tampa, Florida USA 33602-2902
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
Website: www.chemtelinc.com



Safety Data Sheet

BOSS® 180 Multi-Seal® Insulation Anchor Pin System Adhesive

Section 1. Identification

Product Identifier BOSS® 180 Multi-Seal® Insulation Anchor Pin System Adhesive
Synonyms 18071; 18001
Manufacturer Stock Numbers 04224WH25; 04224WH10; C04072WH

Recommended use Refer to Technical Information
Uses advised against Refer to Technical Information

Manufacturer Contact
Address Soudal Accumetric
350 Ring Road
Elizabethtown, KY, 42701
USA

Phone	Emergency Phone	Fax
(270) 769-3385	(800) 424-9300 CHEMTREC	(270) 765-2412

Section 2. Hazards Identification

Classification EYE DAMAGE/IRRITATION - Category 2A
HAZARDOUS TO THE AQUATIC ENVIRONMENT - LONG-TERM HAZARD -
Category 3
SENSITIZATION - SKIN - Category 1
SPECIFIC TARGET ORGAN TOXICITY (Repeated Exposure) - Category 2

Signal Word Warning
Pictogram



Hazard Statements	Causes serious eye irritation Harmful to aquatic life with long lasting effects May cause an allergic skin reaction May cause damage to organs through prolonged or repeated exposure.
Precautionary Statements	
Response	Get medical advice/attention if you feel unwell. If eye irritation persists: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Read label before use. Wash contaminated clothing before reuse.
Prevention	Avoid breathing dust/fume/gas/mist/ vapors/spray. Avoid release to the environment Contaminated work clothing must not be allowed out of the workplace. Do not breathe dust/fume/gas/mist/ vapors/spray. Wash hands thoroughly after handling. Wear eye protection/face protection. Wear protective gloves.
Storage	N/A
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.

Ingredients of unknown toxicity 0%

Hazards not Otherwise Classified
None known

Section 3. Ingredients

CAS	Ingredient Name	Weight %
2224-33-1	Vinyl Oximino Silane	1% - 5%
22984-54-9	Methyl Oximino Silane	1% - 5%
1760-24-3	N-beta-(aminoethyl)-gamma-aminopropyltrimethoxysilane	1% - 5%
63148-62-9	Dimethylpolysiloxane	10% - 30%
112945-52-5	Amorphous fumed silica	5% - 10%
64741-44-2	Distillates (petroleum), straight-run middle	5% - 10%

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-Aid Measures

Eye Contact Immediately flush with water for 15 minutes.

Skin Contact	Remove from skin and immediately flush with water for 15 minutes. Get medical attention if irritation or ill effects develop or persist.
Inhalation	Remove to fresh air. If symptoms persist, obtain appropriate medical attention.
Ingestion	Get medical attention.
Comments	Treat according to person's condition and specifics of exposure.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media	On large fires use dry chemical, foam, or water spray. On small fires use carbon dioxide, dry chemical or water spray. Water can be used to cool fire exposed containers.
Unsuitable Extinguishing Media	None known
Auto-ignition Temperature	Not determined
Flammability Limits in Air	Not determined
Special Fire Fighting Procedures	Self-contained breathing apparatus and protective clothing should be worn when fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.
Unusual Fire or Explosion Hazards	None known

Section 6. Accidental Release Measures

Steps to be taken in case of spill or release	Observe all personal protection equipment. Use absorbent material to collect and contain material for disposal.
	Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Section 7. Handling and Storage

Storage	Keep container closed and store in a cool, well ventilated area, away from water or moisture.
Handling	Avoid breathing vapors in top of shipping container. Keep container closed. Use with adequate ventilation. Avoid contact with skin and clothing. Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits	Ingredient Name	ACGIH	OSHA	STEL
		TLV	PEL	
	Vinyl Oximino Silane	N/A	N/A	N/A
	Methyl Oximino Silane	N/A	N/A	N/A

	N-beta-(aminoethyl)-gamma-aminopropyltrimethoxysilane	N/A	N/A	N/A
	Dimethylpolysiloxane	N/A	N/A	N/A
	Amorphous fumed silica	10 mg/m3	6 mg/m3	N/A
	Distillates (petroleum), straight-run middle	N/A	N/A	N/A
Personal Protective Equipment	N/A			
Component Exposure Limits	Methyl ethyl ketoxime is formed upon contact with water or moisture in the air. Provide adequate ventilation to control exposures to within the exposure guideline of 2 ppm (TWA).			
Engineering Controls	Local Ventilation: Recommended General Ventilation: Recommended			
Eye Protection	Use proper protection - safety glasses as a minimum.			
Skin Protection	Wash at mealtimes and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.			
	Suitable Gloves: Silver Shield® 4H®			
Respiratory Protection	Use respiratory protection unless adequate exhaust ventilation is provided or exposure assessment demonstrates that exposures are within exposure guidelines. Industrial Hygiene Personnel can assist in judging the adequacy of existing engineering controls.			
	Suitable Respirator: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits as determined by air sampling or are unknown, appropriate respiratory protection should be worn. Follow OSHA Respirator Regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.			
Comment	Product evolves methyl ethyl ketoxime (MEKO) when exposed to water or humid air. Provide ventilation during use to control methyl ethyl ketoxime within the exposure guidelines or use respiratory protection.			

Section 9. Physical and Chemical Properties

Physical State	Paste
Color	White
Odor	Slight
Odor Threshold	N/A
Solubility	Dilutable in wet stage
Partition coefficient Water/n-octanol	N/A
VOC%	47 g/L
Viscosity	N/A
Specific Gravity	1.3
Density lbs/Gal	N/A
Pounds per Cubic Foot	N/A

Flash Point	Not applicable
FP Method	N/A
Ph	N/A
Melting Point	Not determined
Boiling Point	Not determined
Boiling Range	N/A
LEL	N/A
UEL	N/A
Evaporation Rate	Not determined
Flammability	N/A
Decomposition Temperature	N/A
Auto-ignition Temperature	N/A
Vapor Pressure	Not determined
Vapor Density	Not determined

Note

The above information is not intended for use in preparing product specifications. Contact Soudal Accumetric before writing specifications.

Section 10. Stability and Reactivity

Conditions to Avoid	None known
Hazardous polymerization	Will not occur
Materials to Avoid / Incompatibility	Oxidizing material can cause a reaction.
Chemical Stability	Stable

Section 11. Toxicological Information

Special Hazard Information on Component	Methyl Oximino Silane (22984-54-9) Possible skin sensitizer Vinyl Oximino Silane (2224-33-1) Possible skin sensitizer
Component Toxicology Information	Methyl Ethyl Ketoxime (MEKO) is formed upon contact with water or humid air. Male rodents exposed to MEKO vapor throughout their lifetime developed liver tumors. Since many commonly used chemicals cause liver tumors in rats and mice, additional testing is planned by the MEKO supplier to determine any relevance to humans. Until more data is known, exposure levels should be maintained as low as achievable.
Carcinogenicity	No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.
Mutagenicity	This product is not known to be a mutagen.
Teratogenicity	This product is not known to be teratogenic.
Reproductive Toxin	This product is not known to be a reproductive toxin.

Section 12. Ecological Information

Environmental Effects	Complete information is not yet available.
Fate and Effects in Waste Water Treatment Plants	Complete information is not yet available.
Environmental Fate and Distribution	Complete information is not yet available.

Section 13. Disposal

Waste Disposal Method	We make no guarantee or warranty of any kind that the use or disposal of this product complies with all local, state, or federal laws. It is also the obligation of each user of the product mentioned herein to determine and comply with the requirements of all applicable statutes. This product is not known to be regulated under RCRA regulations. Disposal of unused portions of this product and process waste containing this product should be done only after a careful evaluation and in compliance with all federal, local and state laws.

Section 14. Transport Information

UN Number	N/A
UN Proper Shipping Name	Caulking & Glaziers, NOI
DOT Classification	None
Packing Group	N/A
Ocean Shipment (IMDG)	Not subject to IMDG code.

Section 15. Regulatory Information

	The contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA Status	All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.
SARA Title III Section 302 Extremely Hazardous Substances	None
SARA Title III Section 304 CERCLA Substances dangereuses	None
SARA Title III Section 312 Hazard Class	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactive: No
SARA Title III Section 313 Toxic Chemicals	None present or none present in regulated quantities.

California Proposition 65	This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm: None known
Massachusetts	Silica, amorphous fumed (112945-52-5)
New Jersey	Silica, amorphous (112945-52-5) Dimethyl siloxane, hydroxy-terminated (70131-67-8) Polydimethylsiloxane (63148-62-9) Methyl tri (ethylmethylketoxime) silane (22984-54-9) Calcium carbonate, treated (1317-65-3) Vinyl oximino silane (2224-33-1)
Pennsylvania	Silica, amorphous (112945-52-5) Dimethyl siloxane, hydroxy-terminated (70131-67-8) Polydimethylsiloxane (63148-62-9) Methyl tri (ethylmethylketoxime) silane (22984-54-9) Calcium carbonate, treated (1317-65-3) Vinyl oximino silane (2224-33-1)
Canada Domestic Substances List	All ingredients are listed on the DSL.

Section 16. Other Information

Revision Date

10/30/2015

Disclaimer

The data contained herein is based upon information that Soudal Accumetric believes to be reliable. Users of this product have the responsibility to determine that suitability of use and to adopt all necessary precautions to ensure the safety and protection of property and persons involved in said use. All statements or suggestions are made without warranty, expressed or implied, regarding the accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof.

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : CalCoat-127®

Manufacturer or supplier's details

Company : Johns Manville

Address : P.O. Box 5108
Denver, CO USA 80127

Telephone : 303-978-2000 8:00AM-5:00PM M-F

Emergency telephone number : 1-800-424-9300 (Chemtrec, in English)

Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Skin corrosion : Category 1

Serious eye damage : Category 1

Carcinogenicity : Category 1A

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS Label element

Hazard pictograms



Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust or mist.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281 Use personal protective equipment as required.

Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/

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shower.

P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Immediately call a POISON CENTER or doctor/ physician.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P363 Wash contaminated clothing before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Hazardous components**

Chemical Name	CAS-No.	Concentration (%)
cement, portland, chemicals	65997-15-1	>= 30 - < 50
synthetic calcium silicate	1344-95-2	>= 30 - < 50
Continuous Filament Glass Fibers	Not Assigned	>= 20 - < 30
Crystalline silica	14808-60-7	>= 0.1 - < 1

SECTION 4. FIRST AID MEASURES

General advice	: Do not leave the victim unattended.
If inhaled	: If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of eye contact	: Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed	: Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5. FIREFIGHTING MEASURES

Hazardous combustion products	: No hazardous combustion products are known

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- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid dust formation.
- Methods and materials for containment and cleaning up : Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
- Conditions for safe storage : Keep in a dry, cool place.
- Materials to avoid : No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
cement, portland, chemicals	65997-15-1	TWA (Respirable fraction)	1 mg/m ³	ACGIH
		TWA (Respirable)	5 mg/m ³	NIOSH REL
		TWA (total)	10 mg/m ³	NIOSH REL
		TWA (total dust)	15 mg/m ³	OSHA
		TWA (respirable fraction)	5 mg/m ³	OSHA
		TWA (Total dust)	10 mg/m ³	OSHA
		TWA (respirable)	5 mg/m ³	OSHA

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		dust fraction)		
		TWA (Dust)	50 Million particles per cubic foot	OSHA
synthetic calcium silicate	1344-95-2	TWA (Respirable)	5 mg/m3	NIOSH REL
		TWA (total)	10 mg/m3	NIOSH REL
		TWA (total dust)	15 mg/m3	OSHA
		TWA (respirable fraction)	5 mg/m3	OSHA
		TWA	10 mg/m3	ACGIH
Continuous Filament Glass Fibers	Not Assigned	TWA (Total dust)	10 mg/m3	ACGIH
		TWA (Total dust)	15 mg/m3	OSHA
		TWA (Respirable dust)	5 mg/m3	OSHA
		TWA (Respirable dust)	5 mg/m3	ACGIH
Crystalline silica	14808-60-7	TWA (Respirable fraction)	0.025 mg/m3	ACGIH
		TWA (total dust)	30 mg/m3 / %SiO ₂ +2	OSHA
		TWA (respirable)	10 mg/m3 / %SiO ₂ +2	OSHA
		TWA (respirable)	250 mppcf / %SiO ₂ +5	OSHA
		TWA (Respirable dust)	0.05 mg/m3	NIOSH REL
		TWA (Respirable fraction)	0.1 mg/m3	OSHA

Personal protective equipment

Respiratory protection

: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection Remarks

: For prolonged or repeated contact use protective gloves.

Eye protection

: Safety glasses

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- Skin and body protection : If used and stored as directed, no special protective equipment is necessary.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Written instructions for handling must be available at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : solid
- Colour : yellow
- Odour : not significant
- Odour Threshold : No data available
- pH : Not applicable
- Flash point : Not applicable
- Evaporation rate : Not applicable
- Flammability (solid, gas) : No data available
- Upper explosion limit : Not applicable
- Lower explosion limit : Not applicable
- Vapour pressure : Not applicable
- Relative vapour density : Not applicable
- Relative density : No data available
- Solubility(ies)
Water solubility : Insoluble
- Solubility in other solvents : No data available
- Partition coefficient: n-octanol/water : No data available
- Auto-ignition temperature : No data available
- Thermal decomposition : No data available
- Viscosity, dynamic : No data available

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Viscosity, kinematic : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : Stable under recommended storage conditions.
No hazards to be specially mentioned.

Conditions to avoid : No data available

SECTION 11. TOXICOLOGICAL INFORMATION

IARC	Group 1: Carcinogenic to humans	
	Crystalline silica	14808-60-7
ACGIH	Suspected human carcinogen	
	Crystalline silica	14808-60-7
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	
NTP	Known to be human carcinogen	
	Crystalline silica	14808-60-7

STOT - single exposure**Components:**

synthetic calcium silicate:
Target Organs: Eyes, Lungs

Further information**Product:**

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability

No data available

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Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation

40 CFR Protection of Environment; Part 82 Protection of
Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured with a
Class I or Class II ODS as defined by the U.S. Clean Air Act
Section 602 (40 CFR 82, Subpt. A, App.A + B).Additional ecological
information

: No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Contaminated packaging

: Empty containers should be taken to an approved waste
handling site for recycling or disposal.
Packaging that can not be reused after cleaning must be
disposed or recycled in accordance with all federal, national
and local regulations.**SECTION 14. TRANSPORT INFORMATION****International transport regulations**

These products are not classified as dangerous goods according to international transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA list

: Not relevant

Not relevant

EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302: No chemicals in this material are subject to the reporting
requirements of SARA Title III, Section 302.

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SARA 313

: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM/ Intermediate or Final VOC's (40 CFR 60.489).

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

Crystalline silica

14808-60-7

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL.

SECTION 16. OTHER INFORMATION**Further information**

Revision Date : 01/16/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Print Date: 05-06-2015

CHILDERS CP-10
801796PM**SAFETY DATA SHEET**

REVISION DATE: 12-12-2014

SUPERSEDES: 10-20-2014

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER**PRODUCT INFORMATION**

PRODUCT: CHILDERS CP-10
PRODUCT DESCRIPTION: Coating
INTENDED USE: Coating
PRODUCT IDENTIFIER: 801796PM

COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
1105 S. Frontenac Street
Aurora, IL 60504
Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION**GHS Hazard Symbols:**

GHS Signal Word: Warning
GHS Classification: Carcinogenicity Category 2
GHS Hazard Phrases: Suspected of causing cancer.

GHS Precautions:
Safety Precautions: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
First Aid Measures: IF exposed or concerned: Get medical advice/attention.
Storage: Store locked up.
Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Crystalline silica	14808-60-7	10 - 30	Carc. 1A; H350 STOT RE 1; H372	* (see below)
Titanium dioxide	13463-67-7	1 - 5	Carc. 2; H351	* (see below)
2,2,4-Trimethyl-1,3-pentanediolmonoisobutyrate	25265-77-4	1 - 5	Aquatic Acute 3; H402	
Attapulgate	12174-11-7	1 - 5	Carc. 2; H351	* (see below)
Vinyl acetate	108-05-4	0.1 - 1	Carc. 2; H351 Flam. Liq. 2; H225	

Print Date: 05-06-2015

CHILDERS CP-10
801796PM**SAFETY DATA SHEET**

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.

IF ON SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:	Use water spray, foam, dry chemical or carbon dioxide.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	There is a possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.
SPECIAL FIRE FIGHTING INSTRUCTIONS:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide, Carbon monoxide

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION:	No adverse health effects expected from the clean-up of spilled material. Follow personal protective equipment recommendations found in Section 8 of this MSDS.
METHODS FOR CLEAN-UP:	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems. Avoid creating dusts. Cover material with absorbent and moisten and collect for disposal.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: No special handling instructions due to toxicity. Avoid breathing material.

Storage: Store in a cool, dry place.
Consult the Technical Data Sheet for specific storage instructions.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Crystalline silica	* (see below)	0.025 mg/m ³ TWA (respirable fraction)	((250)/(%SiO ₂ + 5) mppcf TWA (respirable)); ((10)/(%SiO ₂ + 2) mg/m ³ TWA (respirable)); ((30)/(%SiO ₂ + 2) mg/m ³ TWA (total dust))
Titanium dioxide	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)
Cellulose	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Vinyl acetate		10 ppm TWA 15 ppm STEL	Not established

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

VENTILATION: Use local exhaust ventilation or other engineering controls to minimize exposures.

EYE PROTECTION: Wear safety glasses when handling this product.

SKIN PROTECTION: Avoid skin contact by wearing chemically resistant gloves.

GLOVES: Not normally required. Use nitrile gloves if conditions warrant.

RESPIRATORY PROTECTION: Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with dust/mist filter.
Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	White
ODOR:	Sweet
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	Non flammable
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	11.30
SPECIFIC GRAVITY:	1.370
SOLUBILITY:	Not established

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OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	63.8
VOC, weight percent	1.89
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	45g/liter of material

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Not established
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide

SECTION 11: TOXICOLOGICAL INFORMATION**Component Toxicity / Toxicology Data:**

COMPONENT NAME	LD50/LC50
Crystalline silica	ORAL LD50 RAT 500 MG/KG
Aluminum hydroxide	ORAL LD50 RAT > 5,000 MG/KG
Titanium dioxide	ORAL LD50 RAT > 10,000 MG/KG
2,2,4-Trimethyl-1,3-pentanediolmonoisobutyrate	ORAL LD50 RAT 3,200 MG/KG DERMAL LD50 RAT > 15,200.00 MG/KG
Cellulose	INHALATION LC50-4H RAT > 5,800.00 MG/M3

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause minor skin irritation, defatting, and dermatitis.

Serious eye damage / irritation :Can cause minor irritation, tearing and reddening.

Respiratory / skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: Contains a material that may cause cancer.

Reproductive toxicity: No data available.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: No data available.

Specific target organ toxicity-repeated exposure: No data available.

Target organs potentially affected by exposure: Lungs

Aspiration hazard: No data available.

Medical Conditions Aggravated by Exposure: Lung disease

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available for this product.

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MOBILITY: No data available.
PERSISTENCE: No data available.
BIOACCUMULATION: No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
2,2,4-Trimethyl-1,3-pentanediolmonoisobutyrate	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 30 mg/L Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): 72 Hr EC50 Pseudokirchneriella subcapitata: 18.4 mg/L

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

US DOT: NOT REGULATED
IATA: NOT REGULATED

SECTION 15: REGULATORY INFORMATION**INVENTORY STATUS**

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: The components of this product are included on the DSL or are exempt from DSL requirements.

EUROPEAN REACH: As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.

AUSTRALIA AICS: This product is in compliance with the Australian Inventory of Chemical Substances requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
Vinyl acetate	108-05-4	0.1 - 1

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System.
D2A

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Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List	CAS	Percent
Quartz (Carcinogen)	14808-60-7	10 - 30
Titanium dioxide (Carcinogen)	13463-67-7	1 - 5
Acetaldehyde (Carcinogen)	75-07-0	0.001 - 0.01
Formaldehyde (Carcinogen)	50-00-0	< 10 ppm
Lead (Carcinogen)	7439-92-1	< 10 ppm
1,4-Dioxane (Carcinogen)	123-91-1	< 10 ppm
Cadmium (Carcinogen)	7440-43-9	< 10 ppm
Lead (Developmental toxin)	7439-92-1	< 10 ppm
Cadmium (Developmental toxin)	7440-43-9	< 10 ppm
Methanol (Developmental toxin)	67-56-1	< 10 ppm
Lead (Female reproductive toxin)	7439-92-1	< 10 ppm
Lead (Male reproductive toxin)	7439-92-1	< 10 ppm
Cadmium (Male reproductive toxin)	7440-43-9	< 10 ppm

Substances of Very High Concern (SVHC) Content:

Unless listed below, this product does not contain SVHC's.

4-Nonylphenol, ethoxylated
tert-Octylphenol, ethoxylated**SECTION 16: OTHER INFORMATION**

SDS VERSION DATE: 12-12-2014

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 0 FLAMMABILITY -- 0 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

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REVISION DATE: 03-20-2015

SUPERSEDES: 10-21-2014

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER**PRODUCT INFORMATION**

PRODUCT: CHILDERS CP-30 LO
PRODUCT DESCRIPTION: Coating
INTENDED USE: Coating
PRODUCT IDENTIFIER: 801811PM

COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
1105 S. Frontenac Street
Aurora, IL 60504
Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

**GHS Hazard
Symbols:**



GHS Signal Word: Warning

GHS Classification: Skin Sensitisation Category 1; Carcinogenicity Category 2; Flammable Liquid Category 3; Hazardous to the aquatic environment - Acute Category 3; Hazardous to the aquatic environment - Chronic Category 3

GHS Hazard Phrases: Flammable liquid and vapour.; May cause an allergic skin reaction.; Suspected of causing cancer.; Harmful to aquatic life.; Harmful to aquatic life with long lasting effects.

GHS Precautions:

Safety Precautions: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapours/spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures: IF ON SKIN: Wash with plenty of soap and water. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. In case of fire: Use water spray, foam, dry chemical or carbon dioxide to extinguish.

Storage: Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Stoddard solvent	8052-41-3	30 - 50	Asp. Tox. 1; H304	Note P
Titanium dioxide	13463-67-7	1 - 5	Carc. 2; H351	* (see below)
Trimethyl benzene	25551-13-7	1 - 5	Acute Tox. 4; H312 Acute Tox. 4; H302 Eye Irrit. 2; H319 Skin Irrit. 2; H315	
Trimethylbenzene, 1,2,4-	95-63-6	1 - 5	Aquatic Chronic 2; H411 Acute Tox. 4; H332 Eye Irrit. 2; H319 Flam. Liq. 3; H226 Skin Irrit. 2; H315 STOT SE 3; H335	
Wood rosin	8050-09-7	0.1 - 1	Skin Sens. 1; H317	
Antimony trioxide	1309-64-4	0.1 - 1	Aquatic Acute 1; H400 Carc. 2; H351	* (see below)
Tri(nonylphenol)phosphite	26523-78-4	0.1 - 1	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Skin Sens. 1; H317	
Naphthalene	91-20-3	0.1 - 1	Aquatic Chronic 1; H410 Acute Tox. 2; H330 Acute Tox. 4; H302 Carc. 2; H351	

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

IF ON SKIN: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Restore breathing, if necessary. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention immediately. Drink two glasses of water or milk to dilute. Do not give anything by mouth to an unconscious person. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:

Use water spray, foam, dry chemical or carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Vapors are heavier than air and can travel to a source of ignition and flash back.

SPECIAL FIRE FIGHTING INSTRUCTIONS:

Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

HAZARDOUS COMBUSTION PRODUCTS:

Carbon dioxide, Carbon monoxide Sulfur containing gases

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Chlorine containing gases

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred. Evaporation of volatile substances can lead to the displacement of air creating an environment that can cause asphyxiation.

METHODS FOR CLEAN-UP: Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.
Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: Avoid contacting and avoid breathing the material. Use only in a well ventilated area.
Keep away from heat, sparks and flame.
Wash thoroughly after handling.
Keep container closed.
Emptied container retains vapor and product residue.
Observe all labeled precautions until container is cleaned.
Drums of this material should be grounded when pouring.
DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.

Storage: Store in a cool, dry, ventilated location. Keep away from heat and flame. Keep container closed.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**EXPOSURE LIMITS:**

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Stoddard solvent	Note P	100 ppm TWA	500 ppm TWA; 2900 mg/m3 TWA
Calcium sulfate	* (see below)	10 mg/m3 TWA (inhalable fraction)	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
Talc	* (see below)	2 mg/m3 TWA (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)	Not established
Titanium dioxide	* (see below)	10 mg/m3 TWA	15 mg/m3 TWA (total dust)
Trimethyl benzene		25 ppm TWA	Not established
Calcium carbonate	* (see below)	No data available.	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

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Cumene		50 ppm TWA	50 ppm TWA; 245 mg/m3 TWA Skin absorption may potentially contribute to the overall exposure to this material.
Naphthalene		10 ppm TWA Skin absorption may potentially contribute to the overall exposure to this material.	10 ppm TWA; 50 mg/m3 TWA
Ethylbenzene		20 ppm TWA	100 ppm TWA; 435 mg/m3 TWA

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

- VENTILATION:** Use local exhaust ventilation or other engineering controls to minimize exposures.
- EYE PROTECTION:** Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.
- SKIN PROTECTION:** Avoid skin contact by wearing chemically resistant gloves and long sleeved shirt. An apron may be appropriate if splashing can occur. Skin absorption may potentially contribute to the overall exposure to this material. Appropriate measures should be taken to prevent absorption so that the TLV is not invalidated.
- GLOVES:** Nitrile
- RESPIRATORY PROTECTION:** Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with organic vapor cartridge. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	White
ODOR:	Solvent Mild
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	42C; 108F TCC
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	9.60
SPECIFIC GRAVITY:	1.150
SOLUBILITY:	Not established

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OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	57.0
VOC, weight percent	40.89
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	469g/liter of material

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Strong oxidizing agents
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide Sulfur containing gases Chlorine containing gases

SECTION 11: TOXICOLOGICAL INFORMATION**Component Toxicity / Toxicology Data:**

COMPONENT NAME	LD50/LC50
Aluminum hydroxide	ORAL LD50 RAT > 5,000 MG/KG
Calcium sulfate	ORAL LD50 RAT > 3,000 MG/KG
Titanium dioxide	ORAL LD50 RAT > 10,000 MG/KG
Trimethylbenzene, 1,2,4-	ORAL LD50 RAT 3,400 MG/KG INHALATION LC50-4H RAT 18.00 G/M3 DERMAL LD50 RABBIT > 3,160.00 MG/KG
Calcium carbonate	ORAL LD50 RAT 6,450 MG/KG

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Serious eye damage / irritation: Can cause moderate irritation, tearing and reddening.

Respiratory / skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: Contains a material that is suspected of causing cancer.

Reproductive toxicity: No data available.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: May cause respiratory irritation.

Specific target organ toxicity-repeated exposure: No data available.

Target organs potentially affected by exposure: Kidneys Central nervous system Lungs Blood Skin Liver

Aspiration hazard: No data available.

Medical Conditions Aggravated by Exposure: Kidney disease, Lung disease, Blood disorders (like anemia), Skin disease including eczema and sensitization, Liver disease

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OVERVIEW: No ecological information available for this product.
MOBILITY: No data available.
PERSISTENCE: No data available.
BIOACCUMULATION: No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
Calcium sulfate	Acute Toxicity (Fish): 96 Hr LC50 <i>Lepomis macrochirus</i> : 2980 mg/L [static]; 96 Hr LC50 <i>Pimephales promelas</i> : >1970 mg/L [static] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Chlorinated paraffin	Acute Toxicity (Fish): 96 Hr LC50 <i>Lepomis macrochirus</i> : >300 mg/L [static]; 96 Hr LC50 <i>Oncorhynchus mykiss</i> : >0.0109 mg/L [flow-through]; 96 Hr LC50 <i>Oncorhynchus mykiss</i> : 94.5 - 271 mg/L [static]; 96 Hr LC50 <i>Lepomis macrochirus</i> : >0.1 mg/L [flow-through]; 96 Hr LC50 <i>Pimephales promelas</i> : >100 mg/L [static] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Talc	Acute Toxicity (Fish): 96 Hr LC50 <i>Brachydanio rerio</i> : >100 g/L [semi-static] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Trimethyl benzene	Acute Toxicity (Fish): 96 Hr LC50 <i>Pimephales promelas</i> : 7.72 mg/L [flow-through] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Trimethylbenzene, 1,2,4-	Acute Toxicity (Fish): 96 Hr LC50 <i>Pimephales promelas</i> : 7.19 - 8.28 mg/L [flow-through] Acute Toxicity (Daphnia): 48 Hr EC50 <i>Daphnia magna</i> : 6.14 mg/L Acute Toxicity (Algae): Not established

SECTION 13: DISPOSAL CONSIDERATIONS

This product meets the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. It is ignitable waste class D001. Disposal via incineration is recommended. Consult your state, local, or provincial authorities for more restrictive requirements.

LAND DISPOSAL RESTRICTIONS: Naphthalene ethylbenzene

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

US DOT: UN1139, COATING SOLUTION, 3, III
IATA: UN1139, COATING SOLUTION, 3, III
IMDG: COATING SOLUTION

SECTION 15: REGULATORY INFORMATION**INVENTORY STATUS**

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: The components of this product are included on the DSL or are exempt from DSL requirements.

EUROPEAN REACH: As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.

AUSTRALIA AICS: This product is in compliance with the Australian Inventory of

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KOREAN TCCL: Chemical Substances requirements.
 This product is in compliance with the Korean Existing Chemicals List requirements.

CHINA IECSC INVENTORY: This product is in compliance with the Inventory of Existing Chemical Substances in China (IECSC) requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Cumene	98-82-8	0.1 - 1
Antimony compounds	1309-64-4	0.1 - 1
Naphthalene	91-20-3	0.1 - 1
ethylbenzene	100-41-4	0.1 - 1

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List	CAS	Percent
Titanium dioxide (Carcinogen)	13463-67-7	1 - 5
Cumene (Carcinogen)	98-82-8	0.1 - 1
Antimony(III) oxide (Carcinogen)	1309-64-4	0.1 - 1
Naphthalene (Carcinogen)	91-20-3	0.1 - 1
ethylbenzene (Carcinogen)	100-41-4	0.1 - 1
Quartz (Carcinogen)	14808-60-7	0.01 - 0.1
Benzene (Carcinogen)	71-43-2	0.001 - 0.01
Lead (Carcinogen)	7439-92-1	0.001 - 0.01
Arsenic compounds (inorganic) (Carcinogen)	7440-38-2	0.001 - 0.01
Cadmium (Carcinogen)	7440-43-9	< 10 ppm
Benzene (Developmental toxin)	71-43-2	0.001 - 0.01
Lead (Developmental toxin)	7439-92-1	0.001 - 0.01
Cadmium (Developmental toxin)	7440-43-9	< 10 ppm
Toluene (Developmental toxin)	108-88-3	< 10 ppm
Lead (Female reproductive toxin)	7439-92-1	0.001 - 0.01
Benzene, methyl- (Female reproductive toxin)	108-88-3	< 10 ppm
Benzene (Male reproductive toxin)	71-43-2	0.001 - 0.01
Lead (Male reproductive toxin)	7439-92-1	0.001 - 0.01
Cadmium (Male reproductive toxin)	7440-43-9	< 10 ppm

Substances of Very High Concern (SVHC) Content:

Unless listed below, this product does not contain SVHC's.

SECTION 16: OTHER INFORMATION

SDS VERSION DATE:

03-20-2015

Print Date: 05-06-2015

CHILDERS CP-30 LO
801811PM**SAFETY DATA SHEET**

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 2 FLAMMABILITY -- 2 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

Print Date: 05-11-2015

CHILDERS CP-35 (CP0350)
801813PM**SAFETY DATA SHEET**

REVISION DATE: 04-29-2015

SUPERSEDES: 04-22-2015

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER**PRODUCT INFORMATION**

PRODUCT: CHILDERS CP-35 (CP0350)
PRODUCT DESCRIPTION: Coating
INTENDED USE: Coating
PRODUCT IDENTIFIER: 801813PM

COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
1105 S. Frontenac Street
Aurora, IL 60504
Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION**GHS Hazard Symbols:**

GHS Signal Word: Warning
GHS Classification: Serious Eye Damage/Eye Irritation Category 2; Hazardous to the aquatic environment - Acute Category 2; Hazardous to the aquatic environment - Chronic Category 2
GHS Hazard Phrases: Causes serious eye irritation.; May cause harm to breast-fed children.; Toxic to aquatic life.; Toxic to aquatic life with long lasting effects.
GHS Precautions:
Safety Precautions: Obtain special instructions before use. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact during pregnancy/while nursing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
First Aid Measures: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Collect spillage.
Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Styrene/butyl acrylate copolymer	25767-47-9	10 - 30	Eye Irrit 2; H319	
C14-17, chlorinated paraffin	85535-85-9	1 - 5	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Acute Tox 4; H302	

Print Date: 05-11-2015

CHILDERS CP-35 (CP0350)
801813PM**SAFETY DATA SHEET**

Titanium dioxide	13463-67-7	1 - 5	Carc. 2; H351	*(see below)

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

IF ON SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:	Use water spray, foam, dry chemical or carbon dioxide.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	There is a possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.
SPECIAL FIRE FIGHTING INSTRUCTIONS:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide, Carbon monoxide Chlorine containing gases

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION:	No adverse health effects expected from the clean-up of spilled material. Follow personal protective equipment recommendations found in Section 8 of this MSDS.
METHODS FOR CLEAN-UP:	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: No special handling instructions due to toxicity.

Storage: Store in a cool, dry place. Protect from freezing
Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**EXPOSURE LIMITS:**

Print Date: 05-11-2015

CHILDERS CP-35 (CP0350)
801813PM**SAFETY DATA SHEET**

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Titanium dioxide	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

VENTILATION:	Use local exhaust ventilation or other engineering controls to minimize exposures.
EYE PROTECTION:	Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.
SKIN PROTECTION:	Not normally required. Wear chemically resistant gloves to prevent prolonged or repeated contact.
GLOVES:	Not normally required. Use nitrile gloves if conditions warrant.
RESPIRATORY PROTECTION:	Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	White
ODOR:	Slight Ammonia
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	Non flammable
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	12.10
SPECIFIC GRAVITY:	1.500
SOLUBILITY:	Not established
OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	73.0
VOC, weight percent	Not determined
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	36g/liter of material

Print Date: 05-11-2015

CHILDERS CP-35 (CP0350)
801813PM**SAFETY DATA SHEET****SECTION 10: STABILITY AND REACTIVITY**

STABILITY: Stable under normal conditions.
CHEMICAL INCOMPATIBILITY: Not established
HAZARDOUS POLYMERIZATION: Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide Chlorine containing gases

SECTION 11: TOXICOLOGICAL INFORMATION**Component Toxicity / Toxicology Data:**

COMPONENT NAME	LD50/LC50
Aluminum hydroxide	ORAL LD50 RAT > 5,000 MG/KG
Water	ORAL LD50 RAT > 90 ML/KG
C14-17, chlorinated paraffin	ORAL LD50 RAT 2,000 MG/KG
2,2,4-Trimethyl-1,3-pentanediolmonoisobutyrate	ORAL LD50 RAT 3,200 MG/KG DERMAL LD50 RAT > 15,200.00 MG/KG
Titanium dioxide	ORAL LD50 RAT > 10,000 MG/KG

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause minor skin irritation, defatting, and dermatitis.

Serious eye damage / irritation :Can cause moderate irritation, tearing and reddening.

Respiratory / skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: Contains a material that is suspected of causing cancer.

Reproductive toxicity: No data available.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: No data available.

Specific target organ toxicity-repeated exposure: No data available.

Target organs potentially affected by exposure: Kidneys Liver Lungs

Aspiration hazard: No data available.

Medical Conditions Aggravated by Exposure: Liver disease, Kidney disease, Lung disease

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available for this product.
MOBILITY: No data available.
PERSISTENCE: No data available.
BIOACCUMULATION: No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
2,2,4-Trimethyl-1,3-	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 30 mg/L

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801813PM**SAFETY DATA SHEET**

pentanediolmonoisobutyrate	Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): 72 Hr EC50 Pseudokirchneriella subcapitata: 18.4 mg/L

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

US DOT: NOT REGULATED
IATA: NOT REGULATED
IMDG: UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID,
N.O.S. (C14-C17 CHLORINATED PARAFFIN), 9, III, MARINE
POLLUTANT

SECTION 15: REGULATORY INFORMATION**INVENTORY STATUS**

U.S. EPA TSCA:

This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL:

The components of this product are included on the DSL or are exempt from DSL requirements.

EUROPEAN REACH:

As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.

AUSTRALIA AICS:

This product contains a component that is not on the Australian Inventory (AICS).

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List	CAS	Percent
Titanium dioxide (Carcinogen)	13463-67-7	1 - 5
Quartz (Carcinogen)	14808-60-7	0.01 - 0.1
Formaldehyde (Carcinogen)	50-00-0	0.001 - 0.01
Dibromoacetonitrile (Carcinogen)	3252-43-5	0.001 - 0.01
Acrylamide (Carcinogen)	79-06-1	< 10 ppm
Ethyl acrylate (Carcinogen)	140-88-5	< 10 ppm

Print Date: 05-11-2015

CHILDERS CP-35 (CP0350)
801813PM**SAFETY DATA SHEET**

Lead	(Carcinogen)	7439-92-1	< 10 ppm
1,4-Dioxane	(Carcinogen)	123-91-1	< 10 ppm
Cadmium	(Carcinogen)	7440-43-9	< 10 ppm
2,2'-Iminodiethanol	(Carcinogen)	111-42-2	< 10 ppm
Acrylonitrile	(Carcinogen)	107-13-1	< 10 ppm
Acrylamide	(Developmental toxin)	79-06-1	< 10 ppm
Lead	(Developmental toxin)	7439-92-1	< 10 ppm
Cadmium	(Developmental toxin)	7440-43-9	< 10 ppm
Lead	(Female reproductive toxin)	7439-92-1	< 10 ppm
Acrylamide	(Male reproductive toxin)	79-06-1	< 10 ppm
Lead	(Male reproductive toxin)	7439-92-1	< 10 ppm
Cadmium	(Male reproductive toxin)	7440-43-9	< 10 ppm

Substances of Very High Concern (SVHC) Content:

Unless listed below, this product does not contain SVHC's.
tert-Octylphenol, ethoxylated

SECTION 16: OTHER INFORMATION

SDS VERSION DATE: 04-29-2015

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 0 FLAMMABILITY -- 0 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

Print Date: 05-11-2015

 CHILDERS CP-50A MV1
 827097PM

SAFETY DATA SHEET

REVISION DATE: 04-29-2015

SUPERSEDES: 04-23-2015

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER

PRODUCT INFORMATION

PRODUCT: CHILDERS CP-50A MV1
 PRODUCT DESCRIPTION: Coating
 INTENDED USE: Coating
 PRODUCT IDENTIFIER: 827097PM

COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
 1105 S. Frontenac Street
 Aurora, IL 60504
 Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
 Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

GHS Hazard Symbols:



GHS Classification: Hazardous to the aquatic environment - Acute Category 2; Hazardous to the aquatic environment - Chronic Category 2

GHS Hazard Phrases: May cause harm to breast-fed children.; Toxic to aquatic life.; Toxic to aquatic life with long lasting effects.

GHS Precautions:

Safety Precautions: Obtain special instructions before use. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact during pregnancy/while nursing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment.

First Aid Measures: IF exposed or concerned: Get medical advice/attention. Collect spillage.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
C14-17, chlorinated paraffin	85535-85-9	5 - 10	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Acute Tox. 4; H302	
Titanium dioxide	13463-67-7	1 - 5	Carc. 2; H351	* (see below)
Ethylene glycol	107-21-1	1 - 5	Acute Tox. 4; H302	
Crystalline silica	14808-60-7	0.1 - 1	Carc. 1A; H350 STOT RE 1; H372	* (see below)

Print Date: 05-11-2015

CHILDERS CP-50A MV1
827097PM**SAFETY DATA SHEET**

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.

IF ON SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:	Use water spray, foam, dry chemical or carbon dioxide.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	There is a possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.
SPECIAL FIRE FIGHTING INSTRUCTIONS:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide, Carbon monoxide Chlorine containing gases

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION:	No adverse health effects expected from the clean-up of spilled material. Follow personal protective equipment recommendations found in Section 8 of this MSDS.
METHODS FOR CLEAN-UP:	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: No special handling instructions due to toxicity.

Storage: Store in a cool, dry place. Protect from freezing
Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**EXPOSURE LIMITS:**

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL

Print Date: 05-11-2015

 CHILDERS CP-50A MV1
 827097PM

SAFETY DATA SHEET

Calcium carbonate	* (see below)	No data available.	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Titanium dioxide	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)
Ethylene glycol		TWA Not established 100 mg/m ³ Ceiling (aerosol only)	Not established
Crystalline silica	* (see below)	0.025 mg/m ³ TWA (respirable fraction)	((250)/(%SiO ₂ + 5) mppcf TWA (respirable)); ((10)/(%SiO ₂ + 2) mg/m ³ TWA (respirable)); ((30)/(%SiO ₂ + 2) mg/m ³ TWA (total dust))

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

VENTILATION: Use local exhaust ventilation or other engineering controls to minimize exposures.

EYE PROTECTION: Wear safety glasses when handling this product.

SKIN PROTECTION: Not normally required. Wear chemically resistant gloves to prevent prolonged or repeated contact.

GLOVES: Not normally required. Use nitrile gloves if conditions warrant.

RESPIRATORY PROTECTION: Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	White
ODOR:	Sweet
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	Non flammable
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	10.50
SPECIFIC GRAVITY:	1.300
SOLUBILITY:	Not established
OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.

Print Date: 05-11-2015

CHILDERS CP-50A MV1
827097PM**SAFETY DATA SHEET**

SOLIDS (% by weight):	48.7
VOC, weight percent	1.70
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	56g/liter of material

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Not established
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide Chlorine containing gases

SECTION 11: TOXICOLOGICAL INFORMATION**Component Toxicity / Toxicology Data:**

COMPONENT NAME	LD50/LC50
Water	ORAL LD50 RAT > 90 ML/KG
Calcium carbonate	ORAL LD50 RAT 6,450 MG/KG
C14-17, chlorinated paraffin	ORAL LD50 RAT 2,000 MG/KG
Titanium dioxide	ORAL LD50 RAT > 10,000 MG/KG
Ethylene glycol	ORAL LD50 RAT 4,000 MG/KG

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause minor skin irritation, defatting, and dermatitis.

Serious eye damage / irritation :Can cause minor irritation, tearing and reddening.

Respiratory / skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: Contains a material that may cause cancer.

Reproductive toxicity: Contains a substance(s) that is a possible reproductive system hazard based on high dose tests with laboratory animals.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: No data available.

Specific target organ toxicity-repeated exposure: No data available.

Target organs potentially affected by exposure: Kidneys Liver Lungs Central nervous system

Aspiration hazard: No data available.

Medical Conditions Aggravated by Exposure: Liver disease, Kidney disease, Lung disease

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW:	No ecological information available for this product.
MOBILITY:	No data available.
PERSISTENCE:	No data available.
BIOACCUMULATION:	No data available.

Print Date: 05-11-2015

CHILDERS CP-50A MV1
827097PM**SAFETY DATA SHEET**

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
Ethylene glycol	Acute Toxicity (Fish): 96 Hr LC50 Oncorhynchus mykiss: 41000 mg/L; 96 Hr LC50 Oncorhynchus mykiss: 14 - 18 mL/L [static]; 96 Hr LC50 Lepomis macrochirus: 27540 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 40761 mg/L [static]; 96 Hr LC50 Pimephales promelas: 40000 - 60000 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 16000 mg/L [static] Acute Toxicity (Daphnia): 48 Hr EC50 Daphnia magna: 46300 mg/L Acute Toxicity (Algae): 96 Hr EC50 Pseudokirchneriella subcapitata: 6500 - 13000 mg/L

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

US DOT:	NOT REGULATED
IATA:	NOT REGULATED
IMDG:	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (C14-C17 CHLORINATED PARAFFIN), 9, III, MARINE POLLUTANT, LTD QTY

SECTION 15: REGULATORY INFORMATION**INVENTORY STATUS**

U.S. EPA TSCA:	This product is in compliance with the Toxic Substances Control Act's Inventory requirements.
CANADIAN CEPA DSL:	The components of this product are included on the DSL or are exempt from DSL requirements.
EUROPEAN REACH:	As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.
AUSTRALIA AICS:	This product is in compliance with the Australian Inventory of Chemical Substances requirements.
KOREAN TCCL:	This product is in compliance with the Korean Existing Chemicals List requirements.
PHILIPPINES:	This product is in compliance with the Philippine Inventory of Chemicals and Chemical Substances requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

This product contains a chemical substance that is subject to a Significant New Use Rule (SNUR) under Section 5(a)(2) of TSCA:

.alpha.(Nonylphenyl)-.omega.-hydroxy-poly(oxy-1,2-ethanediyl)

79 FR 59186, Oct 1, 2014 (Proposed rule)

Print Date: 05-11-2015

CHILDERS CP-50A MV1
827097PM**SAFETY DATA SHEET****FEDERAL REPORTING**

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
Ethylene glycol	107-21-1	1 - 5

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List		CAS	Percent
Titanium dioxide	(Carcinogen)	13463-67-7	1 - 5
Quartz	(Carcinogen)	14808-60-7	0.1 - 1
Acetaldehyde	(Carcinogen)	75-07-0	0.001 - 0.01
Dibromoacetonitrile	(Carcinogen)	3252-43-5	0.001 - 0.01
Methanol	(Developmental toxin)	67-56-1	< 10 ppm

Substances of Very High Concern (SVHC) Content:

Unless listed below, this product does not contain SVHC's.

tert-Octylphenol, ethoxylated

SECTION 16: OTHER INFORMATION

SDS VERSION DATE: 04-29-2015

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 0 FLAMMABILITY -- 0 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

MATERIAL SAFETY DATA SHEET

REVISION DATE: 04-06-2004

SUPERSEDES: 08-14-2001

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY INFORMATION

Specialty Construction Brands, Inc.
(formerly Foster Products Corporation
an H.B. Fuller Company Subsidiary)
315 South Hicks Road
Palatine, IL 60067
Phone: 847-358-9500

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

PRODUCT INFORMATION

PRODUCT IDENTIFIER: 801831PM
PRODUCT NUMBER: CP0700
PRODUCT NAME: CHILDERS CP-70
PRODUCT DESCRIPTION: Sealant

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for any additional exposure limit guidelines.

Chemical Name	CAS #	PERCENT	OSHA PEL
Calcium carbonate	471-34-1	50 - 70	TWA (Respirable dust) 5 MG/M3 TWA (Total dust) 15 MG/M3
Stoddard solvent	8052-41-3	1 - 5	TWA 100 ppm
Cobalt compounds		0.1 - 1	TWA (as Co) Fume 0.05 MG/M3
Xylene	1330-20-7	0.1 - 1	TWA 100 ppm STEL 150 ppm

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Combustible

HMIS RATING: HEALTH -- 0 FLAMMABILITY -- 2 REACTIVITY -- 0

MATERIAL SAFETY DATA SHEET

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

POTENTIAL HEALTH EFFECTS BY ROUTE OF ENTRY

EYE: Can cause minor irritation, tearing and reddening.

SKIN: Can cause minor skin irritation, defatting, and dermatitis.

INHALATION: Can cause minor respiratory irritation. Inhalation of dusts produced during cutting, grinding or sanding of this product may cause irritation of the respiratory tract.

Other possible symptoms include coughing or wheezing.

Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination.

INGESTION: Ingestion is not an anticipated route of exposure. No hazard in normal industrial use.

LONG-TERM (CHRONIC) HEALTH EFFECTS

REPRODUCTIVE: Contains a substance that is a probable reproductive hazard based on human studies.

TARGET ORGAN(S): Kidneys Central nervous system Blood Heart Lungs Liver

REGULATED CARCINOGEN STATUS:

Unless noted below, this product does not contain regulated levels of NTP, IARC, ACGIH, or OSHA listed carcinogens.

Cobalt compounds

EXISTING HEALTH CONDITIONS AFFECTED BY EXPOSURE: Kidney disease, Blood disorders (like anemia); Lung disease; Liver disease

SECTION 4: FIRST AID MEASURES

IF IN EYES: Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.

IF ON SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

IF VAPORS INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: 62C; 144F

AUTOIGNITION TEMPERATURE: Not established

LOWER EXPLOSIVE LIMIT (% in air): Not established

UPPER EXPLOSIVE LIMIT (% in air): Not established

EXTINGUISHING MEDIA: Use water spray, foam, dry chemical or carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors are heavier than air and can travel to a source of ignition and flash back.

SPECIAL FIRE FIGHTING INSTRUCTIONS: Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, Carbon monoxide Chlorine containing gases
Nitrogen containing gases

MATERIAL SAFETY DATA SHEET

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION: No adverse health effects expected from the clean-up of spilled material. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Evaporation of volatile substances can lead to the displacement of air creating an environment that can cause asphyxiation.

CLEAN-UP: Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.
Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: No special handling instructions due to toxicity.
Keep away from heat, sparks and flame.
Wash thoroughly after handling.
Keep container closed.
Emptied container retains vapor and product residue.
Observe all labeled precautions until container is cleaned.
Drums of this material should be grounded when pouring.
DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.

Storage: Store in a cool, dry, ventilated location. Keep away from heat and flame. Keep container closed.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION: Wear safety glasses when handling this product.

SKIN PROTECTION: Avoid skin contact by wearing chemically resistant gloves.

GLOVES: Not normally required. Use nitrile gloves if conditions warrant.

RESPIRATORY PROTECTION: Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.
Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

VENTILATION: Use local exhaust ventilation or other engineering controls to minimize exposures.

EXPOSURE LIMITS:

Chemical Name	ACGIH EXPOSURE LIMITS	AIHA WEEL
Calcium carbonate	TWA 10 MG/M3	Not established
Stoddard solvent	TWA 100 ppm	Not established
Cobalt compounds	TWA (as Co) Inorganic 0.02 MG/M3	Not established

MATERIAL SAFETY DATA SHEET

Xylene	TWA 100 ppm STEL 150 ppm	Not established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
COLOR: Gray
ODOR: Solvent
ODOR THRESHOLD: Not established
WEIGHT PER GALLON (lbs.): 14.2
SPECIFIC GRAVITY: 1.7
SOLIDS (% by weight): 96.0

pH: Not established
BOILING POINT (deg. C): Not established
FREEZING/MELTING POINT (deg. C): Not established
VAPOR PRESSURE (mm Hg): Not established
VAPOR DENSITY: Not established
EVAPORATION RATE: Not established
OCTANOL/WATER COEFFICIENT: Not established

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.
CHEMICAL INCOMPATIBILITY: Strong oxidizing agents
HAZARDOUS POLYMERIZATION: Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide Chlorine
containing gases Nitrogen containing gases

SECTION 11: TOXICOLOGICAL INFORMATION

CHEMICAL NAME	LD50/LC50
Calcium carbonate	Oral LD50 Rat = 6450 mg/kg
Stoddard solvent	Not established
Cobalt compounds	Not established
Xylene	Oral LD50 Rat = 4300 mg/kg Inhalation LC50 Rat = 5000 ppm/4H Dermal LD50 Rat = 1700 mg/kg

TOXICOLOGY SUMMARY: No additional health information available.

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available

54 g VOC/liter of material, less water and exempt solvents
(VOC theoretically determined using EPA Publication 450/3-84-019)

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SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Dispose of in an approved landfill. Consult your state, local or provincial authorities and your local waste vendor for more restrictive requirements.

LAND DISPOSAL RESTRICTIONS: Xylenes (o-, m-, p- isomers)

SECTION 14: TRANSPORTATION INFORMATION

Consult Bill of Lading for transportation information.

DOT: NOT REGULATED

IATA: NOT REGULATED

SECTION 15: REGULATORY INFORMATION

INVENTORY STATUS

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: This product is in compliance with the Canadian Domestic Substance List requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at 651-236-5858 (USA) or 450-655-1306 x227 (Canada) to request an export review.

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 72. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
Cobalt compounds		0.1 - 1
Xylene (mixed isomers)	1330-20-7	0.1 - 1

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System.

B3

D2B D2A

STATE REPORTING

This MSDS is not prepared for distribution in California.

SECTION 16: ADDITIONAL INFORMATION

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

MATERIAL SAFETY DATA SHEET

Prepared by: The Global Regulatory Department
Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to Specialty Construction Brands, Inc. from its suppliers, and because Specialty Construction Brands, Inc. has no control over the conditions of handling and use, Specialty Construction Brands, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and Specialty Construction Brands, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of Specialty Construction Brands, Inc. products to comply with all applicable federal, state and local laws and regulations.

Print Date: 05-06-2015

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D2B D2A D1A

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List		CAS	Percent
Quartz	(Carcinogen)	14808-60-7	10 - 30
Titanium dioxide	(Carcinogen)	13463-67-7	0.1 - 1
Cumene	(Carcinogen)	98-82-8	0.1 - 1
Naphthalene	(Carcinogen)	91-20-3	0.1 - 1
ethylbenzene	(Carcinogen)	100-41-4	0.1 - 1
Benzene	(Carcinogen)	71-43-2	0.001 - 0.01
Toluene	(Developmental toxin)	108-88-3	1 - 5
Benzene	(Developmental toxin)	71-43-2	0.001 - 0.01
Benzene, methyl-	(Female reproductive toxin)	108-88-3	1 - 5
Benzene	(Male reproductive toxin)	71-43-2	0.001 - 0.01

Substances of Very High Concern (SVHC) Content:

Unless listed below, this product does not contain SVHC's.

SECTION 16: OTHER INFORMATION

SDS VERSION DATE: 12-19-2014

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 2 FLAMMABILITY -- 2 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

Print Date: 05-06-2015

CHILDERS CP-76
801832PM**SAFETY DATA SHEET****SECTION 13: DISPOSAL CONSIDERATIONS**

This product meets the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. It is ignitable waste class D001. Disposal via incineration is recommended. Consult your state, local, or provincial authorities for more restrictive requirements.

LAND DISPOSAL RESTRICTIONS: Toluene Naphthalene ethylbenzene

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

US DOT: NOT REGULATED
IATA: NOT REGULATED

SECTION 15: REGULATORY INFORMATION**INVENTORY STATUS**

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: The components of this product are included on the DSL or are exempt from DSL requirements.

EUROPEAN REACH: As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.

AUSTRALIA AICS: This product is in compliance with the Australian Inventory of Chemical Substances requirements.

KOREAN TCCL: This product is in compliance with the Korean Existing Chemicals List requirements.

PHILIPPINES: This product is in compliance with the Philippine Inventory of Chemicals and Chemical Substances requirements.

CHINA IECSC INVENTORY: This product is in compliance with the Inventory of Existing Chemical Substances in China (IECSC) requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING**EPA SARA Title III Section 313**

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
Toluene	108-88-3	1 - 5
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Cumene	98-82-8	0.1 - 1
Naphthalene	91-20-3	0.1 - 1
ethylbenzene	100-41-4	0.1 - 1

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System.

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	INHALATION LC50-4H RAT 18.00 G/M3 DERMAL LD50 RABBIT > 3,160.00 MG/KG
Calcium carbonate	ORAL LD50 RAT 6,450 MG/KG

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause skin irritation.

Serious eye damage / irritation: Can cause moderate irritation, tearing and reddening.

Respiratory / skin sensitization: May cause an allergic skin reaction.

Germ cell mutagenicity: May cause genetic defects.

Carcinogenicity: Contains a material that may cause cancer.

Reproductive toxicity: Contains a substance that is a possible reproductive hazard based on animal studies.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity-repeated exposure: Causes damage to organs through prolonged or repeated exposure.

Target organs potentially affected by exposure: Kidneys Central nervous system Lungs Reproductive system Liver Blood

Aspiration hazard: May be fatal if swallowed and enters airways.

Medical Conditions Aggravated by Exposure: Kidney disease, Lung disease, Liver disease, Blood disorders (like anemia)

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW:	No ecological information available for this product.
MOBILITY:	No data available.
PERSISTENCE:	No data available.
BIOACCUMULATION:	No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
Toluene	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 15.22 - 19.05 mg/L [flow-through] (1 day old); 96 Hr LC50 Pimephales promelas: 12.6 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 5.89 - 7.81 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 14.1 - 17.16 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 5.8 mg/L [semi-static]; 96 Hr LC50 Lepomis macrochirus: 11.0 - 15.0 mg/L [static]; 96 Hr LC50 Oryzias latipes: 54 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 28.2 mg/L [semi-static]; 96 Hr LC50 Poecilia reticulata: 50.87 - 70.34 mg/L [static] Acute Toxicity (Daphnia): 48 Hr EC50 Daphnia magna: 5.46 - 9.83 mg/L [Static]; 48 Hr EC50 Daphnia magna: 11.5 mg/L Acute Toxicity (Algae): 96 Hr EC50 Pseudokirchneriella subcapitata: >433 mg/L; 72 Hr EC50 Pseudokirchneriella subcapitata: 12.5 mg/L [static]
Aromatic petroleum distillate	Acute Toxicity (Fish): 96 Hr LC50 Oncorhynchus mykiss: 9.22 mg/L Acute Toxicity (Daphnia): 48 Hr EC50 Daphnia magna: 6.14 mg/L Acute Toxicity (Algae): Not established
Trimethyl benzene	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 7.72 mg/L [flow-through] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Trimethylbenzene, 1,2,4-	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 7.19 - 8.28 mg/L [flow-through] Acute Toxicity (Daphnia): 48 Hr EC50 Daphnia magna: 6.14 mg/L Acute Toxicity (Algae): Not established

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handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with organic vapor cartridge. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Semi-solid
COLOR:	White
ODOR:	Solvent
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	40C; 104F Pensky-Martens
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	10.50
SPECIFIC GRAVITY:	1.200
SOLUBILITY:	Not established
OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	71.7
VOC, weight percent	28.30
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	356g/liter of material

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Strong oxidizing agents
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide

SECTION 11: TOXICOLOGICAL INFORMATION

Component Toxicity / Toxicology Data:

COMPONENT NAME	LD50/LC50
Crystalline silica	ORAL LD50 RAT 500 MG/KG
Toluene	ORAL LD50 RAT 636 MG/KG INHALATION LC50-4H RAT 12.50 MG/L DERMAL LD50 RABBIT 8,390.00 MG/KG
Aromatic petroleum distillate	INHALATION LC50-4H RAT 3,400.00 PPM DERMAL LD50 RABBIT > 2,000.00 MG/KG
Trimethylbenzene, 1,2,4-	ORAL LD50 RAT 3,400 MG/KG

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DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.

Storage: Store in a cool, dry, ventilated location. Keep away from heat and flame. Keep container closed.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Stoddard solvent	Note P	100 ppm TWA	500 ppm TWA; 2900 mg/m ³ TWA
Crystalline silica	* (see below)	0.025 mg/m ³ TWA (respirable fraction)	((250)/(%SiO ₂ + 5) mppcf TWA (respirable)); ((10)/(%SiO ₂ + 2) mg/m ³ TWA (respirable)); ((30)/(%SiO ₂ + 2) mg/m ³ TWA (total dust))
Mica	* (see below)	3 mg/m ³ TWA (respirable fraction)	Not established
Toluene		20 ppm TWA	200 ppm TWA 300 ppm Ceiling
Trimethyl benzene		25 ppm TWA	Not established
Calcium carbonate	* (see below)	No data available.	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Titanium dioxide	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)
Cumene		50 ppm TWA	50 ppm TWA; 245 mg/m ³ TWA Skin absorption may potentially contribute to the overall exposure to this material.
Naphthalene		10 ppm TWA Skin absorption may potentially contribute to the overall exposure to this material.	10 ppm TWA; 50 mg/m ³ TWA
Ethylbenzene		20 ppm TWA	100 ppm TWA; 435 mg/m ³ TWA

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

VENTILATION:

Use local exhaust ventilation or other engineering controls to minimize exposures.

EYE PROTECTION:

Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

SKIN PROTECTION:

Avoid skin contact by wearing chemically resistant gloves. Skin absorption may potentially contribute to the overall exposure to this material. Appropriate measures should be taken to prevent absorption so that the TLV is not invalidated.

GLOVES:

Nitrile

RESPIRATORY PROTECTION:

Respiratory protection may be required to avoid overexposure when

Print Date: 05-06-2015

CHILDERS CP-76
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Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

IF ON SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention immediately. Drink two glasses of water or milk to dilute. Do not give anything by mouth to an unconscious person.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water spray, foam, dry chemical or carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors are heavier than air and can travel to a source of ignition and flash back.

SPECIAL FIRE FIGHTING INSTRUCTIONS: Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, Carbon monoxide

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Evaporation of volatile substances can lead to the displacement of air creating an environment that can cause asphyxiation.

METHODS FOR CLEAN-UP: Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.

Avoid creating dusts. Cover material with absorbent and moisten and collect for disposal.

Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Avoid breathing material.
Keep away from heat, sparks and flame.
Wash thoroughly after handling.
Keep container closed.
Emptied container retains vapor and product residue.
Observe all labeled precautions until container is cleaned.
Drums of this material should be grounded when pouring.

Print Date: 05-06-2015

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with plenty of soap and water. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Call a POISON CENTER or doctor/physician if you feel unwell. Do NOT induce vomiting. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Wash contaminated clothing before reuse. In case of fire: Use water spray, foam, dry chemical or carbon dioxide to extinguish.

Storage: Keep container tightly closed. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Feldspar group minerals	68476-25-5	30 - 50	Eye Irrit. 2; H319 STOT SE 3; H335	
Crystalline silica	14808-60-7	10 - 30	Carc. 1A; H350 STOT RE 1; H372	* (see below)
Rosin, pentaerythritol ester	8050-26-8	5 - 10	Aquatic Chronic 4; H413 Eye Irrit. 2A; H319 Skin Sens. 1; H317	
Polybutene	9003-29-6	1 - 5	Aquatic Chronic 4; H413	
Toluene	108-88-3	1 - 5	Asp. Tox. 1; H304 Acute Tox. 4; H302 Flam. Liq. 2; H225 Repr. 2; H361 Skin Irrit. 2; H315 STOT RE 2; H373 STOT SE 3; H336	
Aromatic petroleum distillate	64742-95-6	1 - 5	Asp. Tox. 1; H304 Carc. 1B; H350 Muta. 1B; H340	
Trimethyl benzene	25551-13-7	1 - 5	Acute Tox. 4; H312 Acute Tox. 4; H302 Eye Irrit. 2; H319 Skin Irrit. 2; H315	
Trimethylbenzene, 1,2,4-	95-63-6	1 - 5	Aquatic Chronic 2; H411 Acute Tox. 4; H332 Eye Irrit. 2; H319 Flam. Liq. 3; H226 Skin Irrit. 2; H315 STOT SE 3; H335	
Titanium dioxide	13463-67-7	0.1 - 1	Carc. 2; H351	* (see below)
Tri(nonylphenol)phosphite	26523-78-4	0.1 - 1	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Skin Sens. 1; H317	
Naphthalene	91-20-3	0.1 - 1	Aquatic Chronic 1; H410 Acute Tox. 4; H302 Acute Tox. 2; H330 Carc. 2; H351	

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Print Date: 05-06-2015

CHILDERS CP-76
801832PM**SAFETY DATA SHEET**

REVISION DATE: 12-19-2014

SUPERSEDES: 10-22-2014

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER**PRODUCT INFORMATION**

PRODUCT: CHILDERS CP-76
PRODUCT DESCRIPTION: Sealant
INTENDED USE: Sealant
PRODUCT IDENTIFIER: 801832PM

COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
1105 S. Frontenac Street
Aurora, IL 60504
Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

GHS Hazard
Symbols:



GHS Signal Word: Danger

GHS Classification: Skin Sensitisation Category 1; Germ Cell Mutagenicity Category 1B; Carcinogenicity Category 1B; Specific Target Organ Systemic Toxicity (STOT) - Repeated Exposure Category 1; Aspiration Hazard Category 1; Serious Eye Damage/Eye Irritation Category 2; Reproductive Toxicity Category 2; Flammable Liquid Category 3; Hazardous to the aquatic environment - Acute Category 3; Hazardous to the aquatic environment - Chronic Category 3; Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3

GHS Hazard Phrases: Flammable liquid and vapour.; May be fatal if swallowed and enters airways.; May cause an allergic skin reaction.; Causes serious eye irritation.; May cause respiratory irritation.; May cause genetic defects.; May cause cancer.; Suspected of damaging fertility or the unborn child.; Causes damage to organs through prolonged or repeated exposure.; Harmful to aquatic life.; Harmful to aquatic life with long lasting effects.

GHS Precautions:

Safety Precautions: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures: IF SWALLOWED: Immediately call a POISON CENTER or doctor. IF ON SKIN: Wash

Print Date: 05-06-2015

 CHILDERS CP-82
 801837PM

SAFETY DATA SHEET

REVISION DATE: 03-24-2015

SUPERSEDES: 10-22-2014

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER

PRODUCT INFORMATION

PRODUCT: CHILDERS CP-82
 PRODUCT DESCRIPTION: Adhesive
 INTENDED USE: Adhesive
 PRODUCT IDENTIFIER: 801837PM

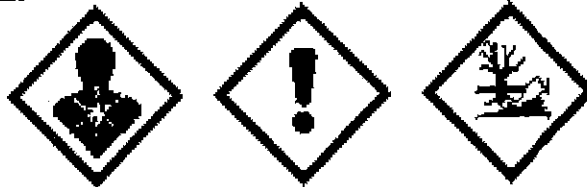
COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
 1105 S. Frontenac Street
 Aurora, IL 60504
 Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
 Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

GHS Hazard
Symbols:



GHS Signal Word:
GHS Classification:

Warning
 Skin Sensitisation Category 1; Hazardous to the aquatic environment - Acute Category 1;
 Carcinogenicity Category 2

GHS Hazard
Phrases:

May cause an allergic skin reaction.; Suspected of causing cancer.; Very toxic to aquatic life.

GHS Precautions:

Safety Precautions:

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapours/spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Collect spillage.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Methylene chloride	75-09-2	70 - 100	Carc. 2; H351	
Chlorinated paraffin	63449-39-8	5 - 10	Aquatic Acute 1; H400	

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Chlorinated paraffin	63449-39-8	1 - 5	Aquatic Acute 1; H400	
P-t-butylphenol/formaldehyde poly Mg complex	68037-42-3	1 - 5	Skin Sens. 1; H317	
Titanium dioxide	13463-67-7	1 - 5	Carc. 2; H351	* (see below)
Wood rosin	8050-09-7	0.1 - 1	Skin Sens. 1; H317	
Crystalline silica	14808-60-7	0.1 - 1	Carc. 1A; H350 STOT RE 1; H372	* (see below)

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

IF ON SKIN: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Restore breathing, if necessary. Keep warm and quiet. Call a physician.

IF SWALLOWED: Severely irritating. Do not induce vomiting. Seek medical attention immediately. Drink 2 glasses of water or milk to dilute. Do not give anything by mouth to an unconscious person. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES**EXTINGUISHING MEDIA:**

Use water spray, foam, dry chemical or carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

There is a possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers. Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

SPECIAL FIRE FIGHTING INSTRUCTIONS:**HAZARDOUS COMBUSTION PRODUCTS:**

Carbon dioxide, Carbon monoxide Chlorine containing gases
Nitrogen containing gases

SECTION 6: ACCIDENTAL RELEASE MEASURES**SPECIAL PROTECTION:**

Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred.

METHODS FOR CLEAN-UP:

Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

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CHILDERS CP-82
801837PM**SAFETY DATA SHEET****SECTION 7: HANDLING AND STORAGE**

Handling: Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Avoid breathing vapors.
Use only with adequate ventilation.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
Keep container closed.
Emptied container retains vapor and product residue.
Observe all labeled safeguards until container is cleaned.
DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.
Aluminum is not an acceptable material of construction for pumps, mixers, fittings or storage for this product.
This product contains an ingredient that may release formaldehyde at heated cure temperatures.

Storage: Store in a cool, dry place.
Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**EXPOSURE LIMITS:**

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Methylene chloride		50 ppm TWA	25 ppm TWA 125 ppm STEL (see 29 CFR 1910.1052)
Titanium dioxide	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)
Crystalline silica	* (see below)	0.025 mg/m ³ TWA (respirable fraction)	((250)/(%SiO ₂ + 5) mppcf TWA (respirable)); ((10)/(%SiO ₂ + 2) mg/m ³ TWA (respirable)); ((30)/(%SiO ₂ + 2) mg/m ³ TWA (total dust))

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

VENTILATION: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

EYE PROTECTION: Wear safety glasses with side shields when handling this product.
Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

SKIN PROTECTION: Avoid skin contact by wearing chemically resistant gloves and long sleeved shirt. An apron may be appropriate if splashing can occur.

GLOVES: Nitrile

RESPIRATORY PROTECTION: Respiratory protection will be required when ventilation or other engineering controls can not reduce the exposure to acceptable levels.
Use supplied-air respiratory equipment as required.
Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

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CHILDERS CP-82
801837PM**SAFETY DATA SHEET****SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

PHYSICAL STATE:	Liquid
COLOR:	Tan
ODOR:	Solvent
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	Non flammable
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	11.10
SPECIFIC GRAVITY:	1.330
SOLUBILITY:	Not established
OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	30.0
VOC, weight percent	0.05
VOC, U.S. EPA Method 24, less water and exempt solvents (theoretically determined)	2.2g/liter of material

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Aluminum alloys
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Chlorine containing gases Carbon monoxide, carbon dioxide Nitrogen containing gases

SECTION 11: TOXICOLOGICAL INFORMATION**Component Toxicity / Toxicology Data:**

COMPONENT NAME	LD50/LC50
Methylene chloride	ORAL LD50 RAT > 2,000 MG/KG
Titanium dioxide	ORAL LD50 RAT > 10,000 MG/KG

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Serious eye damage / irritation :Can cause moderate irritation, tearing and reddening.

Respiratory / skin sensitization: May cause an allergic skin reaction.

Germ cell mutagenicity: No data available.

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Carcinogenicity: Contains a material that may cause cancer.

Reproductive toxicity: No data available.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: No data available.

Specific target organ toxicity-repeated exposure: No data available.

Target organs potentially affected by exposure: Heart Liver Central nervous system Lungs Skin

Aspiration hazard: No data available.

Medical Conditions Aggravated by Exposure: Liver disease, Overexposure to methylene chloride may cause cardiac effects (including the elevation of carboxyhemoglobin levels) which may be significant in smokers or persons with anemia or heart disease and those exposed to carbon monoxide, Lung disease, Skin disease including eczema and sensitization

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available for this product.
 MOBILITY: No data available.
 PERSISTENCE: No data available.
 BIOACCUMULATION: No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
Methylene chloride	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 140.8 - 277.8 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 262 - 855 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 193 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 193 mg/L [flow-through] Acute Toxicity (Daphnia): 48 Hr EC50 Daphnia magna: 1532 - 1847 mg/L [Static]; 48 Hr EC50 Daphnia magna: 190 mg/L Acute Toxicity (Algae): 96 Hr EC50 Pseudokirchneriella subcapitata: >500 mg/L; 72 Hr EC50 Pseudokirchneriella subcapitata: >500 mg/L
Chlorinated paraffin	Acute Toxicity (Fish): 96 Hr LC50 Lepomis macrochirus: >300 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: >0.0109 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 94.5 - 271 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: >0.1 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: >100 mg/L [static] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established
Chlorinated paraffin	Acute Toxicity (Fish): 96 Hr LC50 Lepomis macrochirus: >300 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: >0.0109 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 94.5 - 271 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: >0.1 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: >100 mg/L [static] Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): Not established

SECTION 13: DISPOSAL CONSIDERATIONS

This product contains greater than 10% chlorinated solvent. Spent chlorinated solvents are considered hazardous waste; however, as a component of a mixture, chlorinated solvents do not meet the RCRA definition of hazardous waste under 40 CFR 261. Consult state, local, or provincial authorities for more restrictive requirements.

LAND DISPOSAL RESTRICTIONS: Methylene chloride

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

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US DOT: UN1593, DICHLOROMETHANE MIXTURE, 6.1, III. IF 1395 POUNDS OR MORE: UN1593, DICHLOROMETHANE MIXTURE, 6.1, UN1593, III, RQ. IF 119 GALLONS OR MORE OR IF SHIPPED BY VESSEL ADD: MARINE POLLUTANT (CHLORINATED PARAFFIN).

IATA: UN1593, DICHLOROMETHANE MIXTURE, 6.1, III. IN CONTAINERS 1395 POUNDS OR MORE: UN1593, DICHLOROMETHANE MIXTURE, 6.1, III, RQ

IMDG: DICHLOROMETHANE MIXTURE

SECTION 15: REGULATORY INFORMATION**INVENTORY STATUS**

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

CANADIAN CEPA DSL: The components of this product are included on the DSL or are exempt from DSL requirements.

EUROPEAN REACH: As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.

AUSTRALIA AICS: This product contains a component that is not on the Australian Inventory (AICS).

JAPAN ENCS: This product is in compliance with the Japanese Existing and New Chemical Substances requirements.

CHINA IECSC INVENTORY: This product is in compliance with the Inventory of Existing Chemical Substances in China (IECSC) requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING**EPA SARA Title III Section 313**

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
Dichloromethane	75-09-2	70 - 100
Polychlorinated alkanes	63449-39-8	5 - 10

STATE REPORTING**Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:**

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List	CAS	Percent
Dichloromethane (Carcinogen)	75-09-2	70 - 100
Titanium dioxide (Carcinogen)	13463-67-7	1 - 5
Quartz (Carcinogen)	14808-60-7	0.1 - 1
ethylbenzene (Carcinogen)	100-41-4	0.01 - 0.1
Formaldehyde (Carcinogen)	50-00-0	0.001 - 0.01
Toluene (Developmental toxin)	108-88-3	<10 ppm
Benzene, methyl- (Female reproductive toxin)	108-88-3	<10 ppm



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CHILDERS CP-82
801837PM**SAFETY DATA SHEET**

Substances of Very High Concern (SVHC) Content:
Unless listed below, this product does not contain SVHC's.

SECTION 16: OTHER INFORMATION

SDS VERSION DATE: 03-24-2015

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 2 FLAMMABILITY -- 0 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department
Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

MATERIAL SAFETY DATA SHEET

Effective Date: March 1, 2007

SECTION I PRODUCT IDENTIFICATION & EMERGENCY INFORMATION

PRODUCT NAME(S) OR NUMBER(S)

DAXCEL® FOAMASTIK® 161-D Adhesive

EMERGENCY PHONE NUMBERS

Chemtrec® 800-424-9300 (Inside US)
703-527-3887 (Outside US)
Supplier 412-922-2536

MANUFACTURER/SUPPLIER/NAME/ADDRESS

Dacar Products Company Inc.
1019 McCartney Street
Pittsburgh, PA 15220

IMO & IATA HAZARD DESIGNATION

PROPER NAME / CLASS / NUMBER / PKG GROUP / RQ
Adhesive, 3.3, UN 1133, III (containing
less than 5% Naphtha, Petroleum)

CHEMICAL FAMILY

Oil-based Adhesive

FORMULA

See Section II

DOT DOMESTIC US GROUND TRANSPORT HAZARD DESIGNATION

Unregulated

HAZARD RATINGS

	NPCA-HMIS	KEYS	
Health	0	4 = Severe	1 = Slight
Flammability	2	3 = Serious	0 = Minimal
Reactivity	0	2 = Moderate	N = None (see Section VIII)
Personal Protection	N		

SECTION II CHEMICAL COMPONENTS

CHEMICAL NAME	TLV	CAS NOS.	PCT.
Calcium Carbonate	N/A	471-34-1	60-70
Magnesium Carbonate	N/A	546-93-0	4-10
Linseed Oil	N/A	8001-26-1	4-10
Soybean Oil	N/A	68152-81-8	4-10
Petroleum Naphtha	500 ppm	8742-88-7 /	4-10
Mixture		64742-47-8	

(N/A = Not Available)

SECTION III PHYSICAL DATA

Boiling Point (°C / °F)	> 127 / 261	Solubility in Water	Negligible
Vapor Pressure (@ 20°C)	N/A	Specific Gravity	1.8
Vapor Density (air = 1)	N/A	Evaporation Rate	
Volatile Organic Content (g / l)	< 80	(Ethyl ether = 1)	N/A

APPEARANCE

Heavy Mastic, Light Gray

ODOR

Mild Odor

MATERIAL IS A

Paste

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Closed Cup)

40°C / 104°F (Pensky Martin)

LEL

1.4*

UEL

8.1*

IGNITION TEMPERATURE

216°C / 421°F*

EXTINGUISHING MEDIA

Regular Foam or Carbon Dioxide

*Solvent Only

SPECIAL FIRE FIGHTING PROCEDURES

None

UNUSUAL FIRE AND EXPLOSION HAZARDS

None

SECTION V PHYSIOLOGICAL EFFECTS

EFFECTS OF EXPOSURE

Eyes: May cause irritation
Skin: May cause irritation and contact dermatitis in sensitive persons
Inhalation: May cause lightheadedness
Swallowing: May cause irritation, nausea, vomiting or diarrhea

EMERGENCY AND FIRST AID PROCEDURES

Eyes: Flush with large amounts of water; get medical attention
Skin: Wash thoroughly with soap and water
Inhalation: Remove to fresh air
Swallowing: Drink two glasses of water and induce vomiting; get medical attention

SECTION VI REACTIVITY DATA

MATERIALS IS

Stable

CONDITIONS TO AVOID

Heat, flame and fire

MATERIALS TO AVOID

None

DECOMPOSITION PRODUCTS

Carbon dioxide/monoxide

HAZARDOUS POLYMERIZATION

Will Not Occur

CONDITIONS TO AVOID

Avoid open flame or sparks

SECTION VII SPILL OR LEAK PROCEDURES

SMALL SPILL

Absorb residue on floor absorbent or similar material; dispose of absorbent properly.

LARGE SPILL

Material may be shoveled into proper containers. Residue may be absorbed by clay, sand, floor absorbent or similar materials and shoveled into containers.

WASTE DISPOSAL METHOD

Dispose of in accordance with all Federal, State and Local laws and regulations.

SECTION VIII PROTECTIVE EQUIPMENT

Ventilation: Generally none. For prolonged exposure in small, closed space, general ventilation.
Respiratory: None.
For Eyes: Generally none; product will not splash easily. If needed, use any type splash goggles.
For Skin: Generally none; for prolonged skin contact, wear natural rubber gloves.

SECTION IX SPECIAL PRECAUTIONS

Container may contain liquid or vapor residue. Do not cut container with torch. Obey all precautions until container disposed of. Do not reuse container. Dispose of container in accordance with Federal, State and Local regulations.

CHANGES since last version: None.

GHS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		 ADHESIVE Class 3 UN 1133 P.G.: III

SECTION I: IDENTIFICATION

Use: This product complements bituminous waterproofing membranes and is used as jointing mastics, caulking materials and joint fillers. It is compatible with bituminous materials and ensures good waterproofing.

Manufacturer:
Soprema Canada
1675 Haggerty Street
Drummondville (Quebec) J2C 5P7
CANADA
Tel.: 819 478-8163

Distributors:
Soprema Inc.
44955 Yale Road West
Chilliwack (BC) V2R 4H3
UNITED STATES
Tel.: 604 793-7100

Soprema USA
310 Quadral Drive
Wadsworth (Ohio) 44281
UNITED STATES
Tel.: 1 800 356-3521

Soprema USA
12251 Seaway Road
Gulfport (Mississippi) 39503
UNITED STATES
Tel.: 228 701-1900

In case of emergency:

SOPREMA (8:00am to 5:00pm): 1 800 567-1492

CANUTEC (Canada) (24h.): 613 996-6666

CHEMTREC (USA) (24h.): 1 800 424-9300

SECTION II: HAZARD(S) IDENTIFICATION

DANGER

Flammable liquid and vapour. May be fatal if swallowed and enters airways. Harmful if swallowed. May cause respiratory irritation or drowsiness or dizziness. Causes skin irritation. Causes eye irritation. Suspected of damaging fertility or the unborn child. May cause damage to the central nervous system (CNS) through prolonged or repeated exposure if inhaled.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames and hot surfaces. No smoking. Use explosion proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

Do not eat or drink when using this product. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves, eye protection and an organic vapour respirator. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. Dispose of container in accordance with local, regional and national regulations.

SECTION III: COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Asphalt	8052-42-4	15-40	0.5 mg/m ³	Not established
Xylene	1330-20-7	10-30	100 ppm	150 ppm
Oxidized asphalt	64742-93-4	5-10	0.5 mg/m ³	Not established

Effects of Short-Term (Acute) Exposure

INHALATION

Xylene: Xylene (mixed isomers) readily forms a vapour at room temperature. The main effect of inhaling xylene vapour is depression of the CNS, with symptoms such as headache, dizziness, nausea and vomiting. Volunteers have tolerated 100 ppm, but higher concentrations become objectionable. Irritation of the nose and throat can occur from exposure to approximately 200 ppm xylene (mixed isomers; unspecified composition) for 3-5 minutes or to 50 ppm m-xylene for 2 hours. Exposures estimated as 700 ppm (xylene composition not specified) have caused nausea and vomiting. An extremely high concentration (approximately 10 000 ppm, xylene composition not specified) has caused incoordination, loss of consciousness, respiratory failure and death. In some cases, a potentially fatal accumulation of fluid in the lungs (pulmonary oedema) may result. The symptoms of pulmonary oedema include coughing, chest pain and shortness of breath and be delayed for up to 24 or 48 hours after exposure. These symptoms are aggravated by physical exertion. However, these effects are rarely seen since xylenes are irritating, and identifiable by odour at much lower concentrations. Xylene (mixed isomers) can accumulate in a confined space increasing the risk of toxicity. The only reported death resulted from exposure to approximately 10 000 ppm xylene (mixed isomers; unspecified composition) for several hours while painting in a confined space. The worker who died had severe lung congestion and pulmonary oedema. Two other workers who survived the exposure, both had reversible liver damage and one had reversible kidney damage. (1)

Asphalt: Exposure is not expected by this route of entry under normal product use.

SKIN CONTACT

Xylene: Xylene (mixed isomers) liquid is a moderate skin irritant based on animal information. Studies with xylene isomers have shown irritation, redness and a burning sensation can result from contact. These effects are reversible shortly (usually within 1 hour) after the contact stops. Repeated or prolonged exposure to xylene can defat the skin resulting in dermatitis (red, dry, itchy skin). Xylene (mixed isomers) liquid or vapour can be absorbed through the skin, but not as readily as when inhaled or ingested. (1)

Asphalt: Asphalt may cause irritation to the skin. (2)

EYE CONTACT

Xylene: Xylene (mixed isomers) liquid is a very mild irritant, based on animal information. (1)

Asphalt: Asphalt, in this form is not expected to cause eye irritation. (2)

INGESTION

It is unlikely that toxic amounts of this product would be ingested with normal handling and use.

Xylene: Xylene (mixed isomers) is not considered toxic if ingested based on animal information. Ingestion of large amounts is likely to cause CNS effects such as dizziness, nausea and vomiting. (1)

Asphalt: No information available.

SKIN CONTACT

Xylene: Prolonged contact with xylene (mixed isomers) is expected to cause dermatitis (dry, red skin) because of its defatting action. (1)

Asphalt: Repeated or prolonged contact may cause irritation. (2)

SKIN SENSITIZATION

Xylene: Xylene (mixed isomers) is not known to be an occupational skin sensitizer. (1)

INHALATION

Xylene: See effects described below.

Asphalt: Exposure is not expected by this route of entry under normal product use.

NERVOUS SYSTEM EFFECTS

Xylene: Long-term xylene (mixed isomers) exposure may cause harmful effects on the nervous system, but there is not enough information available to draw firm conclusions. Symptoms such as headaches, irritability, depression, insomnia, agitation, extreme tiredness, tremors, and impaired concentration and short-term memory have been reported following long-term occupational exposure to xylene and other solvents. This condition is often referred to as "organic solvent syndrome". Unfortunately, there is very little information available that isolates xylenes from other solvent exposures in the examination of these long-term neurological effects. Other study deficiencies include inadequate reporting on the duration of exposure and the exposure levels, and poor matching of controls. (1)

BLOOD/BLOOD FORMING SYSTEM

Xylene: Historical reports sometimes associate xylene exposure with certain blood effects, including leukemia, which are now known to be caused by benzene. Xylene that does not contain benzene as a contaminant is not known to cause these effects. (1)

LIVER AND KIDNEY EFFECTS

Xylene: A number of case reports and occupational studies have suggested that liver and kidney damage may result from long-term occupational exposure to xylene. However, it is not possible to attribute these effects directly to xylene exposure because generally there was exposure to other chemicals at the same time, particularly other solvents, and there was no information provided on the exposure levels or duration of exposure. (1)

Asphalt: No information available.

HEARING

Xylene: There is evidence that long-term exposure to solvent mixtures including xylenes may cause hearing loss. The simultaneous exposure to noise and solvents appears to enhance this effect. However, the limited information available does not allow a conclusion to be drawn specifically for xylene (mixed isomers). (1)

CARCINOGENICITY

Xylene: The International Agency for Research on Cancer (IARC) has determined that there is inadequate evidence for the carcinogenicity of xylene in humans. IARC has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3). The American Conference of Governmental Industrial Hygienists (ACGIH) has designated this chemical as not classifiable as a human carcinogen (A4). The US National Toxicology Program (NTP) has not listed this chemical in its report on carcinogens. (1)

Oxidized asphalt: In its 2013 monograph (Volume 103), IARC conducted a review of the potential carcinogenicity of bitumen (the European term for asphalt). One of its conclusions was "occupational exposures to oxidized bitumens and their emissions during roofing" are classified in IARC Group 2A, "probably carcinogenic to humans.". However, due to the product form, exposure to such component is unlikely under normal conditions of use.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Xylene: Xylene (mixed isomers) is considered fetotoxic in humans, based on observations of reduced foetal weight, delayed ossification and persistent behavioural effects in animal studies in the absence of

animal studies in the presence of maternal toxicity. (1)

REPRODUCTIVE TOXICITY

Xylene: The limited information located suggests that xylene (mixed isomers) does not cause reproductive toxicity. Xylenes have been shown to transfer into human breast milk. (1)

MUTAGENICITY

Xylene: Xylene (mixed isomers) is not known to be a mutagen. Negative results have been obtained in a few limited studies in humans. Negative results have been obtained in studies in live animals and in cultured mammalian cells and bacteria, which were carried out with pure isomers of xylene and with mixed isomers containing up to 36% ethylbenzene. (1)

TOXICOLOGICALLY SYNERGISTIC MATERIALS

Xylene: There have been several studies in humans and animals on the interaction of xylenes with drugs, alcohol and other solvents. Xylene has a high potential to interact with other compounds because it increases metabolic enzymes in the liver and decreases metabolic enzymes in the lungs. In general, exposure to related solvents, such as benzene, toluene and ethanol (alcohol) slows the rate of clearance of xylenes from the body, thus enhancing its toxic effects. In rats, exposure to xylene (mixed isomers; unspecified composition) in combination with the solvents trichloroethylene or chlorobenzene has had an additive effect in causing hearing loss, while exposure to xylene (mixed isomers) enhanced the hearing loss caused by n-hexane and decreased the toxicity of n-hexane on peripheral nerves. (1)

POTENTIAL FOR ACCUMULATION

Xylene: The three xylene isomers are readily absorbed by inhalation and ingestion and are widely distributed throughout the body. A small amount may be absorbed through the skin. Xylenes are largely broken down by the liver and most of the absorbed material is rapidly excreted in the urine as breakdown products. Small amounts are eliminated unchanged in the exhaled air. There is low potential for accumulation. (1)

SECTION IV: FIRST-AID MEASURES

If exposed or concerned: Get medical advice.

SKIN CONTACT

Wash with plenty of water. If skin irritation occurs: Get medical advice. Take off immediately all contaminated clothing and wash it before reuse.

EYE CONTACT

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.

INHALATION

Remove person to fresh air and keep comfortable for breathing. Call a poison center if you feel unwell.

SWALLOWING

Immediately call a poison center. Do NOT induce vomiting. Rinse mouth.

SECTION V: FIRE-FIGHTING MEASURES

FLAMMABILITY: Flammable Class 1C (NFPA)

EXPLOSION DATA: Sensitivity to mechanical impact: No
Sensitivity to static charge: Can accumulate static charge by flow.

FLASH POINT: 25°C (ASTM D-93)

AUTO-IGNITION TEMPERATURE: 527°C (xylene)

FLAMMABILITY LIMITS IN AIR: (% in volume) 1 – 7 (xylene)

FIRE AND EXPLOSION HAZARDS

This product and its vapours are easily ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. The product may ignite on contact with strong oxidizing agents. Do not cut, puncture or weld empty containers.

Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Toxic and/or irritating gases or fumes can emanate from empty containers when submitted to high temperatures: CO, CO₂, Aldehydes, ketone, acrolein, halogenated compound. During a fire, carbon monoxide, carbon dioxide, reactive hydrocarbons, low molecular weight aldehydes (e.g. acetaldehyde) and other irritating and toxic vapours, fumes and smoke may be generated.

FIRE FIGHTING INSTRUCTIONS

Isolate area. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Approach fire from upwind and fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from containers because of the high risk of explosion. Stop leak before attempting to put out the fire. If leak cannot be stopped, and if there is no risk to the surrounding area, let the fire burn itself out. Move containers from fire area if this can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

MEANS OF EXTINCTION

Anti-alcohol or universal foam, dry chemical powder, CO₂, sand. Use of water spray when fighting fire may be inefficient because of the low flash point of the product.

SECTION VI: ACCIDENTAL RELEASE MEASURES

RELEASE OR SPILL

Ventilate area. Wear appropriate protective equipment during cleanup. Eliminate all sources of ignition. Shut off source of leak if you can do it without risk. Contain the spill. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Sweep or shovel into containers with lids, use clean non-sparking tools to collect absorbed material. Cover and remove to appropriate well-ventilated area until disposal. Do not touch or walk through spilled material. Wash spill area with soap and water. Prevent entry into waterways, sewers, basements or confined areas. Dispose of the product according to the environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING

This product is flammable and toxic. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash thoroughly after handling. Before handling, it is very important that ventilation controls are operating and protective equipment requirements are being followed. People working with this product would be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Ground transfer containers to avoid static accumulation. Tightly reseal all partially used containers. Do not cut, puncture or weld containers.

STORAGE

Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. Keep storage areas clear of combustible materials. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment near storage area. Inspect all containers to make sure they are properly labelled.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

HANDS: Wear gloves made from polyvinyl alcohol (PVA) or viton.

RESPIRATORY: If the TLV is exceeded, if use is performed in a poorly ventilated confined area, use an approved respirator in accordance with standards.

YES: Wear chemical safety goggles in accordance with standards.

EYES: Eye bath and safety shower.

CONTROL OF VAPOURS: Local exhaust is needed to control vapour and dust level to below recommended limits.

PHYSICAL STATE:

ODOUR AND APPEARANCE: Black paste with strong solvent odour

ODOUR THRESHOLD:

VAPOUR DENSITY (air = 1):

EVAPORATION RATE (Butyl acetate = 1):

BOILING POINT (760 mm Hg):

FREEZING POINT:

SPECIFIC GRAVITY (H₂O = 1):

SOLUBILITY IN WATER (20°C):

VOLATILE ORGANIC COMPOUND (V.O.C.):

Paste

Not available

Heavier than air

0.7 (xylene)

Not available

Not available

1.15 kg/L

Insoluble

225 g/L

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.

CONDITIONS OF REACTIVITY: Avoid excessive heat

INCOMPATIBILITY: Bases, acids and strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: None identified.

HAZARDOUS POLYMERISATION: None

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

Xylene: (1)

LC₅₀ (male rat): 6 350 ppm (4-hour exposure) (unspecified isomers and ethylbenzene)

LD₅₀ (oral, rat): 3 523 mg/kg

Asphalt: Not available.

Effects of Short-Term (Acute) Exposure

EYE IRRITATION

Xylene: Xylene (mixed isomers) is a very mild eye irritant. (1)

Asphalt: No information available.

SKIN IRRITATION

Xylene: Xylene (mixed isomers) is a moderate skin irritant. (1)

Asphalt: No information available.

INHALATION

Xylene: The major effect of xylene inhalation is on the CNS. There is initial excitation followed by depression, drowsiness, incoordination, and unconsciousness at approximately 2 000 ppm. Death at higher concentrations is from respiratory failure due to CNS depression and/or accumulation of fluid in the lungs (pulmonary oedema). (1)

Asphalt:

No information available.

Effects of Long-Term (Chronic) Exposure

INHALATION

Xylene: Rats exposed to 0, 50 or 100 ppm m-xylene for 3 months (6 hours/day, 5 days/week) had significantly increased sensitivity to pain at 50 ppm and impaired rotarod performance at 100 ppm. Reversibility was not assessed. Male rats exposed to 0, 100 or 1 000 ppm m-xylene for 12 weeks (6 hours/day, 5 days/week) had a dose-related impairment of learning when tested in a maze. The impairment was still present 2 months after exposure ended. (1)

CARCINOGENICITY

Xylene: IARC has determined that there is inadequate evidence for carcinogenicity of xylene (mixed isomers) in animals. (1)

Asphalt: No information available.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Xylene: Xylene (mixed isomers) causes developmental toxicity (fetotoxic). Reduced foetal weight, delayed ossification and persistent behavioural effects have been observed in the absence of maternal toxicity. Other developmental effects have been observed in the presence of maternal toxicity. (1)

Asphalt: No information available.

Xylene: The limited information located suggests that xylene (mixed isomers) does not cause reproductive toxicity. (1)

Asphalt: No information available.

MUTAGENICITY

Xylene: Xylene (mixed isomers) is not known to be a mutagen. Negative results have been obtained in studies using live animals and in most studies with cultured mammalian cells and bacteria which were carried out with pure isomers of xylene and with mixed isomers containing up to 36% ethylbenzene. (1)

Asphalt: No information available.

SECTION XII: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS

Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Block off drains and ditches. Provincial and federal regulations may require that environmental and / or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

SECTION XIII: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

This product is listed as hazardous waste. Consult local, state, provincial or territory authorities to know disposal methods. Also listed as hazardous waste by the RCRA (USA); waste disposal as to follow EPA regulations. Do not dispose of waste with normal garbage or sewers systems.

SECTION XIV: TRANSPORT INFORMATION

CLASSIFICATION (TDG - DOT): Class 3

IDENTIFICATION NUMBER: UN 1133

SHIPPING NAME: Adhesive

PACKING GROUP: III

CONTAINERS ARE IN CONFORMITY WITH STANDARDS.

Classification based on Section V of this document

SECTION XV: REGULATORY INFORMATION

DSL: All constituents of this product are included on the Domestic Substances List (DSL - Canada).

TSCA: All constituents of this product are included on the Toxic Substances Control Act Inventory (TSCA - United States).

Prop. 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

GLOSSARY

ASTM:	American Society for Testing and Materials (United States)
CAS:	Chemical Abstract Services
CSA:	Canadian Standardization Association
DOT:	Department of Transportation (United States)
EPA:	Environmental Protection Agency (United States)
GHS	Globally Harmonized System
LD₅₀/LC₅₀:	Less high lethal dose and lethal concentration published
NIOSH:	National Institute for Occupational Safety and Health (United States)
RCRA:	Resource Conservation and Recovery Act (United States)
TDG:	Transportation of Dangerous Goods (Canada)
TLV-TWA:	Threshold Limit Value - Time-Weighted Average

References:

- (1) CHEMINFO (2015) Canadian Centre of Occupational Health and Safety, Hamilton (Ontario) Canada.
- (2) Safety Data Sheet of the supplier.

Code of SDS:

CA U DRU SS FS 028

For more information:

1 800 567-1492

The Safety Data Sheets of SOPREMA Canada are available on Internet at the following site: www.soprema.ca

Justification of the update:

- Triennial update.
- GHS format.
- Addition of oxidized asphalt to the list of ingredients

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Safety Data Sheet

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Issue Date: 11/17/15

Version Number: 46.02
Supersedes Date: 11/16/15

SECTION 1: Identification

1.1. Product identifier

3M™ Fastbond™ Contact Adhesive 30-NF, Neutral

Product Identification Numbers

62-4274-6530-7, 62-4274-6535-6, 62-4274-7530-6, 62-4274-7535-5, 62-4274-8530-5, 62-4274-9530-4

1.2. Recommended use and restrictions on use

Recommended use

water based contact adhesive, Industrial use

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Skin Sensitizer: Category 1.

Reproductive Toxicity: Category 1B.

Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Exclamation mark | Health Hazard |

Pictograms

**Hazard Statements**

May cause an allergic skin reaction.
May damage fertility or the unborn child.

Causes damage to organs:
sensory organs |

Causes damage to organs through prolonged or repeated exposure:
nervous system |
sensory organs |

Precautionary Statements**Prevention:**

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wear protective gloves and eye/face protection.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see Notes to Physician on this label).

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:

This product contains methanol. If there is a reasonable suspicion of methanol poisoning, intravenous (IV) administration with either fomepizole (preferred) or ethanol (if fomepizole is unavailable) should be considered as part of the medical management.

2.3. Hazards not otherwise classified

None.

6% of the mixture consists of ingredients of unknown acute dermal toxicity.
14% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Water	7732-18-5	30 - 60 Trade Secret *
Polychloroprene	9010-98-4	25 - 50 Trade Secret *
Glycerol Esters of Rosin Acids	8050-31-5	5 - 10 Trade Secret *
Rosin, Polymer with Phenol	68083-03-4	3 - 7 Trade Secret *
Methyl Alcohol	67-56-1	1 - 5 Trade Secret *
Zinc Oxide	1314-13-2	1 - 5 Trade Secret *
Toluene	108-88-3	1 - 3 Trade Secret *
2,2'-Methylenebis[6-tert-Butyl-p-Cresol]	119-47-1	0.1 - < 1 Trade Secret *
Rosin	8050-09-7	0.1 - 1 Trade Secret *
Potassium Hydroxide	1310-58-3	< 0.5 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures**4.1. Description of first aid measures****Inhalation:**

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

This product contains methanol. If there is a reasonable suspicion of methanol poisoning, intravenous (IV) administration with either fomepizole (preferred) or ethanol (if fomepizole is unavailable) should be considered as part of the medical management.

SECTION 5: Fire-fighting measures**5.1. Suitable extinguishing media**

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products**Substance**

Formaldehyde

Condition

During Combustion

Carbon monoxide
Carbon dioxide

During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with water. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
Toluene	108-88-3	CMRG	STEL:75 ppm	Skin Notation
Toluene	108-88-3	OSHA	TWA:200 ppm;CEIL:300 ppm	
Potassium Hydroxide	1310-58-3	ACGIH	CEIL:2 mg/m3	
Zinc Oxide	1314-13-2	ACGIH	TWA(respirable fraction):2 mg/m3;STEL(respirable	

Zinc Oxide	1314-13-2	OSHA	fraction): 10 mg/m ³ TWA(as fume): 5 mg/m ³ ; TWA(as total dust): 15 mg/m ³ ; TWA(respirable fraction): 5 mg/m ³	
Methyl Alcohol	67-56-1	ACGIH	TWA: 200 ppm; STEL: 250 ppm	Skin Notation
Methyl Alcohol	67-56-1	OSHA	TWA: 260 mg/m ³ (200 ppm)	
Rosin	8050-09-7	ACGIH	Limit value not established:	Dermal/Respiratory Sensitizer, Cntrl all exposr-low as possib

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended: Polymer laminate

Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

Half facepiece or full facepiece supplied-air respirator

Organic vapor respirators may have short service life.

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:

Liquid

Odor, Color, Grade:	White, slight odor of ammonia.
Odor threshold	No Data Available
pH	10 - 11
Melting point	Not Applicable
Boiling Point	>=64 °C
Flash Point	>=300 °F [Test Method: Pensky-Martens Closed Cup]
Evaporation rate	1 [Ref Std: ETHER=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Vapor Pressure	<=38 mmHg [@ 68 °F]
Vapor Density	1.1 [Ref Std: AIR=1]
Density	1.1 g/ml
Specific Gravity	1.1 [Ref Std: WATER=1]
Solubility in Water	Complete
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	No Data Available
Decomposition temperature	No Data Available
Viscosity	200 - 750 centipoise [@ 73.4 °F]
Hazardous Air Pollutants	<=4.7 % weight [Test Method: Calculated]
Molecular weight	No Data Available
VOC Less H2O & Exempt Solvents	<=80 g/l [Test Method: tested per EPA method 24]
Solids Content	42.7 - 57 %

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Strong acids

Strong oxidizing agents

10.6. Hazardous decomposition products

Substance

None known.

Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be

reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

May be harmful if swallowed.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

May cause blindness.

Prolonged or repeated exposure may cause target organ effects:

Ocular Effects: Signs/symptoms may include blurred or significantly impaired vision.

Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Olfactory Effects: Signs/symptoms may include decreased ability to detect odors and/or complete loss of smell.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE > 50 mg/l

Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
Polychloroprene	Dermal		LD50 estimated to be > 5,000 mg/kg
Polychloroprene	Ingestion	Rat	LD50 > 20,000 mg/kg
Rosin, Polymer with Phenol	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Glycerol Esters of Rosin Acids	Dermal	Rabbit	LD50 > 5,000 mg/kg
Glycerol Esters of Rosin Acids	Ingestion	Rat	LD50 > 2,000 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluène	Inhalation-Vapor (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg
Methyl Alcohol	Dermal		LD50 estimated to be 1,000 - 2,000 mg/kg
Methyl Alcohol	Inhalation-Vapor		LC50 estimated to be 10 - 20 mg/l
Methyl Alcohol	Ingestion		LD50 estimated to be 50 - 300 mg/kg
Zinc Oxide	Dermal		LD50 estimated to be > 5,000 mg/kg
Zinc Oxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.7 mg/l
Zinc Oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Rosin	Dermal	Rabbit	LD50 > 2,500 mg/kg
Rosin	Ingestion	Rat	LD50 7,600 mg/kg
Potassium Hydroxide	Dermal	Rabbit	LD50 > 1,260 mg/kg
Potassium Hydroxide	Ingestion	Rat	LD50 273 mg/kg
2,2'-Methylenebis[6-tert-Butyl-p-Cresol]	Dermal	Rabbit	LD50 > 10,000 mg/kg
2,2'-Methylenebis[6-tert-Butyl-p-Cresol]	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Polychloroprene	Human	No significant irritation
Glycerol Esters of Rosin Acids	Rabbit	Minimal irritation
Toluene	Rabbit	Irritant
Methyl Alcohol	Rabbit	Mild irritant
Zinc Oxide	Human and animal	No significant irritation
Rosin	Rabbit	No significant irritation
Potassium Hydroxide	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Polychloroprene	Professional judgement	No significant irritation
Glycerol Esters of Rosin Acids	Rabbit	Mild irritant
Toluene	Rabbit	Moderate irritant
Methyl Alcohol	Rabbit	Moderate irritant
Zinc Oxide	Rabbit	Mild irritant
Rosin	Rabbit	Mild irritant
Potassium Hydroxide	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Glycerol Esters of Rosin Acids	Guinea pig	Not sensitizing
Toluene	Guinea pig	Not sensitizing
Methyl Alcohol	Guinea	Not sensitizing

Zinc Oxide	pig Guinea pig	Some positive data exist, but the data are not sufficient for classification
Rosin	Guinea pig	Sensitizing

Respiratory Sensitization

Name	Species	Value
Rosin	Human	Some positive data exist, but the data are not sufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Glycerol Esters of Rosin Acids	In Vitro	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
Methyl Alcohol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methyl Alcohol	In vivo	Some positive data exist, but the data are not sufficient for classification
Zinc Oxide	In Vitro	Some positive data exist, but the data are not sufficient for classification
Zinc Oxide	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Methyl Alcohol	Inhalation	Multiple animal species	Not carcinogenic

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Toluene	Inhalation	Some positive female reproductive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse
Methyl Alcohol	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,600 mg/kg/day	21 days
Methyl Alcohol	Ingestion	Toxic to development	Mouse	LOAEL 4,000 mg/kg/day	during organogenesis
Methyl Alcohol	Inhalation	Toxic to development	Mouse	NOAEL 1.3 mg/l	during organogenesis
Zinc Oxide	Ingestion	Some positive	Multiple	NOAEL 125	prematings &

		reproductive/developmental data exist, but the data are not sufficient for classification	animal species	mg/kg/day	during gestation
2,2'-Methylenebis[6-tert-Butyl-p-Cresol]	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 50 mg/kg/day	prematem & during gestation
2,2'-Methylenebis[6-tert-Butyl-p-Cresol]	Ingestion	Toxic to male reproduction	Rat	NOAEL 12.5 mg/kg/day	50 days

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Methyl Alcohol	Inhalation	blindness	Causes damage to organs	Human	NOAEL Not available	occupational exposure
Methyl Alcohol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Methyl Alcohol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 hours
Methyl Alcohol	Ingestion	blindness	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
Methyl Alcohol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Potassium Hydroxide	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Glycerol Esters of Rosin Acids	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 5,000 mg/kg/day	90 days
Glycerol Esters of Rosin Acids	Ingestion	heart skin endocrine system bone, teeth, nails, and/or hair blood bone marrow hematopoietic system immune system muscles nervous system eyes kidney and/or bladder respiratory system	All data are negative	Rat	NOAEL 5,000 mg/kg/day	90 days
Toluene	Inhalation	auditory system nervous system eyes olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Some positive data exist, but the	Rat	NOAEL 1.1	4 weeks

			data are not sufficient for classification		mg/l	
Toluene	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system vascular system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 105 mg/kg/day	4 weeks
Methyl Alcohol	Inhalation	liver	All data are negative	Rat	NOAEL 6.55 mg/l	4 weeks
Methyl Alcohol	Inhalation	respiratory system	All data are negative	Rat	NOAEL 13.1 mg/l	6 weeks
Methyl Alcohol	Ingestion	liver nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	90 days
Zinc Oxide	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	10 days
Zinc Oxide	Ingestion	endocrine system hematopoietic system kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Other	NOAEL 500 mg/kg/day	6 months

Aspiration Hazard

Name	Value
Toluene	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Toluene	108-88-3	Trade Secret 1 - 3
Methyl Alcohol	67-56-1	Trade Secret 1 - 5
Zinc Oxide (ZINC COMPOUNDS)	1314-13-2	1 - 5

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M Fire Barrier 2000+ Premium Silicone Sealant

Product Identification Numbers

98-0400-5299-9, 98-0400-5300-5

1.2. Recommended use and restrictions on use

Recommended use

A FIRE STOPPING SEALANT FOR FIRE RATED WALL AND FLOOR PENETRATION AND JOINTS., FIRE STOP MATERIAL

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

2.2. Label elements

Signal word

Not applicable.

Symbols

Not applicable.

Pictograms

Not applicable.

2.3. Hazards not otherwise classified

None.

60% of the mixture consists of ingredients of unknown acute oral toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Polysiloxane NJTS Reg. No. 04499600-7182	Trade Secret*	30 - 60 Trade Secret *
Calcium Carbonate	471-34-1	30 - 60 Trade Secret *
Dimethyl Siloxane, Dimethylvinylsiloxo-terminated	68083-19-2	5 - 10 Trade Secret *
Methyltrimethoxysilane	1185-55-3	3 - 7 Trade Secret *
Stearic Acid	57-11-4	1 - 5 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide

Carbon dioxide

Condition

During Combustion

During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Keep out of reach of children. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

7.2. Conditions for safe storage including any incompatibilities

Keep container tightly closed.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Methyltrimethoxysilane	1185-55-3	CMRG	TWA: 50 ppm	
Calcium Carbonate	471-34-1	CMRG	TWA: 10 mg/m ³ ; STEL: 20 mg/m ³	
Limestone	471-34-1	OSHA	TWA (as total dust): 15 mg/m ³ ; TWA (respirable fraction): 5 mg/m ³	
STEARATES	57-11-4	ACGIH	TWA: 10 mg/m ³	A4: Not class. as human carcin

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

CMRG: Chemical Manufacturer's Recommended Guidelines

OSHA: United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls**8.2.1. Engineering controls**

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)**Eye/face protection**

None required.

Skin/hand protection

No chemical protective gloves are required.

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

General Physical Form:	Solid
Specific Physical Form:	Paste
Odor, Color, Grade:	Gray silicone sealant paste with alcoholic odor.
Odor threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point	<i>No Data Available</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	No flash point
Evaporation rate	<i>No Data Available</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Specific Gravity	1.34 [Ref Std: WATER=1] [Details: CONDITIONS: @ 25C]
Solubility In Water	<i>No Data Available</i>
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity	<i>No Data Available</i>
VOC Less H2O & Exempt Solvents	31 g/l

SECTION 10: Stability and reactivity**10.1. Reactivity**

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products**Substance****Condition**

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects**Signs and Symptoms of Exposure**

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Contact with the skin during product use is not expected to result in significant irritation.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Calcium Carbonate	Dermal	Rat	LD50 > 2,000 mg/kg
Calcium Carbonate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3.0 mg/l
Calcium Carbonate	Ingestion	Rat	LD50 6,450 mg/kg
Dimethyl Siloxane, Dimethylvinylsiloxy-terminated	Dermal	Rabbit	LD50 > 15,440 mg/kg
Dimethyl Siloxane, Dimethylvinylsiloxy-terminated	Ingestion	Rat	LD50 > 15,440 mg/kg
Stearic Acid	Dermal	Rabbit	LD50 > 2,000 mg/kg

Stearic Acid	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Calcium Carbonate	Rabbit	No significant irritation
Dimethyl Siloxane, Dimethylvinylsiloxo-terminated	Rabbit	No significant irritation
Stearic Acid	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Calcium Carbonate	Rabbit	No significant irritation
Dimethyl Siloxane, Dimethylvinylsiloxo-terminated	Rabbit	Mild irritant
Stearic Acid		Moderate irritant

Skin Sensitization

Name	Species	Value

Respiratory Sensitization

Name	Species	Value

Germ Cell Mutagenicity

Name	Route	Value
Stearic Acid	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Stearic Acid	Ingestion	Rat	Not carcinogenic

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Ingestion	Not toxic to development	Rat	NOAEL 625 mg/kg/day	prematuring & during gestation

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Inhalation	respiratory system	All data are negative	Rat	NOAEL 0.812 mg/l	90 minutes
Stearic Acid	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Stearic Acid	Ingestion	blood	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 weeks

Aspiration Hazard

Name	Value

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Prior to disposal, consult all applicable authorities and regulations to insure proper classification. Dispose of waste product in a permitted industrial waste facility.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

15.2. State Regulations

15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

15.4. International Regulations

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 1 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 1 Flammability: 1 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Material Safety Data Sheet

The Dow Chemical Company

Product Name: GREAT STUFF™ Big Gap Filler Insulating Foam Sealant 12oz HC CAN

Issue Date: 12/10/2012

Print Date: 22 Jan 2013

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

GREAT STUFF™ Big Gap Filler Insulating Foam Sealant 12oz HC CAN

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
United States

Customer Information Number:

800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

989-636-4400

Local Emergency Contact:

989-636-4400

2. Hazards Identification

Emergency Overview

Color: Yellow

Physical State: Foam

Odor: Mild

Hazards of product:

DANGER! Flammable gas - May cause flash fire. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause eye irritation. May cause skin irritation. Vapor reduces oxygen available for breathing. May cause anesthetic effects. May cause respiratory tract irritation. Vapors may travel a long distance; ignition and/or flash back may occur. Evacuate area. Keep upwind of spill. Stay out of low areas. Aerosol cans exposed to fire can rupture becoming flaming projectiles. Elevated temperatures can cause hazardous polymerization. Toxic fumes may be released in fire situations. Contents under pressure. Avoid temperatures above 49°C (120.2°F)

OSHA Hazard Communication Standard

®(TM)*Trademark

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause eye irritation. May cause slight temporary corneal injury.

Skin Contact: Prolonged contact may cause moderate skin irritation with local redness. Material may stick to skin causing irritation upon removal. May stain skin.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Skin Sensitization: Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Inhalation: In confined or poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. May cause central nervous system depression. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Decreased lung function has been associated with overexposure to isocyanates.

Respiratory Sensitization: May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.

Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.

Effects of Repeated Exposure: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Contains component(s) which have been reported to cause effects on the following organs in animals: Kidney. Liver.

Cancer Information: Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Birth Defects/Developmental Effects: In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

3. Composition Information

Component	CAS #	Amount
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha.'-1,2,3-propanetriyltris[.omega.-hydroxypoly	57029-46-6	>= 30.0 - <= 60.0 %
Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer	53862-89-8	>= 10.0 - <= 30.0 %
Tris(1-chloro-2-propyl) phosphate	13674-84-5	>= 5.0 - <= 10.0 %
Paraffin waxes and Hydrocarbon waxes, chlorinated	63449-39-8	>= 5.0 - <= 10.0 %
Isobutane	75-28-5	>= 5.0 - <= 10.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %
4,4'-Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - <= 10.0 %

Note: CAS 101-68-8 is an MDI isomer that is part of CAS 9016-87-9.

4. First-aid measures

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin Contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Although cholinesterase depression has been reported with this material, it is not of benefit in determining exposure and need not be considered in the treatment of persons exposed to the material. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome). Repeated excessive exposure may aggravate preexisting lung disease.

5. Fire Fighting Measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Extinguishing Media to Avoid: Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Isocyanates. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Hydrogen cyanide.

Unusual Fire and Explosion Hazards: Contains flammable propellant. Aerosol cans exposed to fire can rupture and become flaming projectiles. Propellant release may result in a fireball. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Dense smoke is produced when product burns.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Confined space entry procedures must be followed before entering the area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Isolate area until gas has dispersed. Use non-sparking tools in cleanup operations. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Collect in suitable and properly labeled containers. Absorb with materials such as: Clay. Dirt. Milsorb®. Sand. Sawdust. Vermiculite. See Section 10 for more specific information. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. Keep out of reach of children. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Contents under pressure. Do not puncture or incinerate container. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Do not enter confined spaces unless adequately ventilated. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in a dry place. See Section 10 for more specific information.

Shelf life: Use within 12 Months Do not store above: 49 °C

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
4,4'-Methylenediphenyl diisocyanate	ACGIH	TWA	0.005 ppm
	OSHA Table Z-1	Ceiling	0.2 mg/m3 0.02 ppm
Methyl ether	AIHA WEEL	TWA	1,880 mg/m3 1,000 ppm
Isobutane	ACGIH	TWA	1,000 ppm
Propane	OSHA Table Z-1	PEL	1,800 mg/m3 1,000 ppm
	ACGIH	TWA	1,000 ppm

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields).

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber, Chlorinated polyethylene, Polyethylene, Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Neoprene, Nitrile/butadiene rubber ("nitrile" or "NBR"), Viton, Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure. Lethal concentrations may exist in areas with poor ventilation.

9. Physical and Chemical Properties

Appearance	
Physical State	Foam
Color	Yellow
Odor	Mild
Odor Threshold	No test data available
pH	<i>Not applicable</i>
Melting Point	No test data available
Freezing Point	No test data available
Boiling Point (760 mmHg)	Not applicable.
Flash Point - Closed Cup	-104 °C (-155 °F) <i>Estimated.</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Flammable gas.
Flammable Limits in Air	Lower: No test data available Upper: No test data available
Vapor Pressure	1,151 kPa @ 55 °C <i>Calculated</i>
Vapor Density (air = 1)	No test data available
Specific Gravity (H2O = 1)	1.06 <i>Estimated.</i>
Solubility in water (by weight)	Insoluble
Partition coefficient, n-octanol/water (log Pow)	Reacts with water.
Autoignition Temperature	No test data available
Decomposition Temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	No

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Stable under recommended storage conditions. See Storage, Section 7. Unstable at elevated temperatures.

Possibility of hazardous reactions

Can occur. Elevated temperatures can cause hazardous polymerization.

Conditions to Avoid: Avoid temperatures above 116 °C (241 °F). Elevated temperatures can cause container to vent and/or rupture. Exposure to elevated temperatures can cause product to decompose.

Incompatible Materials: Avoid contact with: Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Strong oxidizers. Products based on diisocyanates like TDI and MDI react with many materials to release heat. The reaction rate increases with temperature as well as with increased contact; these reactions can become violent. Contact is increased by stirring or if the other material acts as a solvent. Products based on diisocyanates such as TDI and MDI are not soluble in water and will sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials.
Toxic gases are released during decomposition.

11. Toxicological Information

Acute Toxicity

Ingestion

As product: Single dose oral LD50 has not been determined.

Estimated. LD50, rat > 2,000 mg/kg

Dermal

As product: The dermal LD50 has not been determined.

Estimated. LD50, rabbit > 2,000 mg/kg

Inhalation

As product: The LC50 has not been determined.

Eye damage/eye irritation

May cause eye irritation. May cause slight temporary corneal injury.

Skin corrosion/irritation

Prolonged contact may cause moderate skin irritation with local redness. Material may stick to skin causing irritation upon removal. May stain skin.

Sensitization

Skin

Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Respiratory

May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Repeated Dose Toxicity

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Contains component(s) which have been reported to cause effects on the following organs in animals: Kidney. Liver.

Chronic Toxicity and Carcinogenicity

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Developmental Toxicity

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

Reproductive Toxicity

No relevant data found.

Genetic Toxicology

In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

12. Ecological Information

Toxicity

Data for Component: Diphenylmethane Diisocyanate, isomers and homologues

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 > 100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

|| Based on information for a similar material: LC50, Danio rerio (zebra fish), static test, 96 h: > 1,000 mg/l

Aquatic Invertebrate Acute Toxicity

|| Based on information for a similar material: EC50, Daphnia magna (Water flea), static test, 24 h: > 1,000 mg/l

Aquatic Plant Toxicity

|| Based on information for a similar material: NOEC, Desmodesmus subspicatus (green algae), static test, Growth rate inhibition, 72 h: 1,640 mg/l

Toxicity to Micro-organisms

|| Based on information for a similar material: EC50; activated sludge, static test, 3 h: > 100 mg/l

Toxicity to Soil Dwelling Organisms

|| EC50, Eisenia fetida (earthworms), 14 d: > 1,000 mg/kg

Data for Component: **Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.,.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly**

|| Not expected to be acutely toxic to aquatic organisms.

Data for Component: **Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

|| Not expected to be acutely toxic to aquatic organisms.

Data for Component: **Tris(1-chloro-2-propyl) phosphate**

|| Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

|| LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 h: 84 mg/l

Aquatic Invertebrate Acute Toxicity

|| EC50, Daphnia magna (Water flea), 48 h, immobilization: 131 mg/l

Aquatic Plant Toxicity

|| ErC50, Pseudokirchneriella subcapitata (green algae), static test, Growth rate inhibition, 96 h: 82 mg/l

Toxicity to Micro-organisms

|| EC50, OECD 209 Test; activated sludge, Respiration inhibition, 3 h: 784 mg/l

Aquatic Invertebrates Chronic Toxicity Value

|| Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, NOEC: 32 mg/l

Data for Component: **Paraffin waxes and Hydrocarbon waxes, chlorinated**

|| Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

Fish Acute & Prolonged Toxicity

|| LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 h: > 100 mg/l

Aquatic Invertebrate Acute Toxicity

|| EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 0.037 mg/l

Data for Component: **Isobutane**

|| No relevant data found.

Data for Component: **Methyl ether**

|| Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

|| LC50, Poecilia reticulata (guppy), semi-static test, 96 h: > 4,000 mg/l

Aquatic Invertebrate Acute Toxicity

|| LC50, Daphnia magna (Water flea), 48 h, immobilization: > 4,000 mg/l

Data for Component: **Propane**

|| No relevant data found.

Data for Component: **4,4'-Methylenediphenyl diisocyanate**

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

Based on information for a similar material: LC50, Danio rerio (zebra fish), static test, 96 h: > 1,000 mg/l

Aquatic Invertebrate Acute Toxicity

Based on information for a similar material: EC50, Daphnia magna (Water flea), static test, 24 h: > 1,000 mg/l

Aquatic Plant Toxicity

Based on information for a similar material: NOEC, Desmodesmus subspicatus (green algae), static test, Growth rate inhibition, 72 h: 1,640 mg/l

Toxicity to Micro-organisms

Based on information for a similar material: EC50; activated sludge, static test, 3 h: > 100 mg/l

Toxicity to Soil Dwelling Organisms

EC50, Eisenia fetida (earthworms), 14 d: > 1,000 mg/kg

Persistence and Degradability

Data for Component: Diphenylmethane Diisocyanate, isomers and homologues

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

OECD Biodegradation Tests: Based on information for a similar material:

Biodegradation	Exposure Time	Method	10 Day Window
0 %	28 d	OECD 302C Test	Not applicable

Data for Component: Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.,.alpha."-1,2,3-propanetriyl[tris].omega.-hydroxypoly

Expected to degrade only slowly in the environment.

Data for Component: Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Expected to degrade only slowly in the environment.

Data for Component: Tris(1-chloro-2-propyl) phosphate

Material is expected to biodegrade only very slowly (in the environment). Falls to pass OECD/EEC tests for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
14 %	28 d	OECD 301E Test	fail
95 %	64 d	OECD 302A Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
4.47E-11 cm ³ /s	0.24 d	Estimated.

Theoretical Oxygen Demand: 1.17 mg/mg

Data for Component: Paraffin waxes and Hydrocarbon waxes, chlorinated

Expected to degrade only slowly in the environment.

Theoretical Oxygen Demand: 2.89 mg/mg

Data for Component: Isobutane

Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.44E-12 cm ³ /s	4.4 d	Estimated.

Theoretical Oxygen Demand: 3.58 mg/mg

Data for Component: **Methyl ether**

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
5 %	28 d	OECD 301A Test	fail

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.66E-12 cm ³ /s	6.4 d	Estimated.

Theoretical Oxygen Demand: 2.08 mg/mg

Data for Component: **Propane**

No relevant data found.

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.27E-12 cm ³ /s	8.4 d	Estimated.

Theoretical Oxygen Demand: 3.64 mg/mg

Data for Component: **4,4' -Methylenediphenyl diisocyanate**

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

OECD Biodegradation Tests: Based on information for a similar material:

Biodegradation	Exposure Time	Method	10 Day Window
0 %	28 d	OECD 302C Test	Not applicable

Bioaccumulative potential

Data for Component: **Diphenylmethane Diisocyanate, isomers and homologues**

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.,.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly**

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Tris(1-chloro-2-propyl) phosphate**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 2.59 Measured

Bioconcentration Factor (BCF): 0.8 - 4.6; Cyprinus carpio (Carp); Measured

Data for Component: **Paraffin waxes and Hydrocarbon waxes, chlorinated**

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).

Partition coefficient, n-octanol/water (log Pow): 7.4 Estimated.

Data for Component: **Isobutane**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 2.76 Measured

Data for Component: **Methyl ether**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 0.10 Measured

Data for Component: **Propane**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 2.36 Measured

Data for Component: **4,4' -Methylenediphenyl diisocyanate**

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Mobility in soil

Data for Component: **Diphenylmethane Diisocyanate, isomers and homologues**

Mobility in soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.,.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly**

Mobility in soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Mobility in soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: **Tris(1-chloro-2-propyl) phosphate**

Mobility in soil: Potential for mobility in soil is slight (Koc between 2000 and 5000).
Partition coefficient, soil organic carbon/water (Koc): 1,300 Estimated.
Henry's Law Constant (H): < 1.35E-05 atm*m3/mole; 25 °C Estimated.

Data for Component: **Paraffin waxes and Hydrocarbon waxes, chlorinated**

Mobility in soil: Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process., Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient, soil organic carbon/water (Koc): > 5,000 Estimated.
Henry's Law Constant (H): < 1.0E-07 atm*m3/mole; 25 °C Estimated.

Data for Component: **Isobutane**

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 35 Estimated.
Henry's Law Constant (H): 1.19E+00 atm*m3/mole; 25 °C Measured

Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
100 %	0 %	0 %	0 %	0 %

Data for Component: **Methyl ether**

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 1.29 - 14 Estimated.
Henry's Law Constant (H): 9.78E-04 atm*m3/mole; 25 °C Measured

Data for Component: **Propane**

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 24 - 460 Estimated.
Henry's Law Constant (H): 7.07E-01 atm*m3/mole; 25 °C Measured

Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
100 %	0 %	0 %	0 %	0 %

Data for Component: **4,4' -Methylenediphenyl diisocyanate**

Mobility in soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED

PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. Transport Information

DOT Non-Bulk

CONSUMER COMMODITY RECLASSIFIED AS ORM-D MATERIAL

DOT Bulk

NOT AVAILABLE IN BULK CONTAINERS

IMDG

Proper Shipping Name: AEROSOLS

Hazard Class: 2.1 ID Number: UN1950

EMS Number: F-D,S-U

Marine pollutant.: Yes

LIMITED QUANTITY

ICAO/IATA

Proper Shipping Name: AEROSOLS, FLAMMABLE

Hazard Class: 2.1 ID Number: UN1950 Cargo Packing Instruction: 203

Passenger Packing Instruction: 203

LIMITED QUANTITY

Additional Information

MARINE POLLUTANT

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard Yes

Delayed (Chronic) Health Hazard Yes

Fire Hazard Yes

Reactive Hazard No

Sudden Release of Pressure Hazard No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - <= 10.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - <= 10.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %
Isobutane	75-28-5	>= 5.0 - <= 10.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

This product contains the following substances which are subject to CERCLA Section 103 reporting requirements and which are listed in 40 CFR 302.4.

Component	CAS #	Amount
4,4' -Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - <= 10.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 10.0 - <= 30.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %
Isobutane	75-28-5	>= 5.0 - <= 10.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Recommended Uses and Restrictions

Identified uses

Polyurethane foam.

Revision

Identification Number: 63952 / 0000 / Issue Date 12/10/2012 / Version: 3.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

Safety Data Sheet

GREENchoice Smoke & Sound Sealant

Section 1. Identification

GHS product identifier : GREENchoice Smoke & Sound Sealant
Product type : Liquid.
CAS # : mixture
Address : Franklin International
2020 Bruck Street
Columbus OH 43207
Contact person : Franklin Technical Services
Telephone : (800) 877-4583
In case of emergency : Franklin Security
(614) 445-1300
Reference number : 8001
Product code : 2892
Date of revision : 6/5/2015.
Print date : 6/5/2015.
Chemtrec (24 Hour) : (800) 424 - 9300
Chemtrec International : (703) 527 - 3887
Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : ACUTE TOXICITY (inhalation) - Category 4
GHS label elements
Hazard pictograms : 
Signal word : Warning
Hazard statements : Harmful if inhaled.
Precautionary statements
General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Prevention : Use only outdoors or in a well-ventilated area. Avoid breathing vapor.
Response : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Hazardous ingredients

United States

Name	CAS number	%
ethanediol	107-21-1	0.1 - 0.5

Canada

Name	CAS number	%
ethanediol	107-21-1	0.1 - 0.5

Mexico

Name	CAS number	UN number	%	IDLH	Classification			
					H	F	R	Special
No hazardous ingredient								

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Harmful if inhaled.

Section 4. First aid measures

- Skin contact** : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media : None known.
Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products : No specific data.
Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 5 to 38°C (41 to 100.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

United States

Occupational exposure limits

Ingredient name	Exposure limits
ethanediol	OSHA PEL 1989 (United States, 3/1989). CEIL: 50 ppm CEIL: 125 mg/m³ ACGIH TLV (United States, 4/2014). C: 100 mg/m³ Form: Aerosol

Canada

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			Notations
Ingredient	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	
ethanediol	US ACGIH 4/2014	-	-	-	-	-	-	-	100	-	[a]
	AB 4/2009	-	-	-	-	-	-	-	100	-	[3] [b]
	BC 4/2014	-	-	-	-	-	-	-	100	-	[a]
		-	10	-	-	20	-	-	-	-	[c]
		-	-	-	-	-	-	50	-	-	[d]
	ON 1/2013	-	-	-	-	-	-	-	100	-	[b]
	QC 1/2014	-	-	-	50	127	-	-	-	-	[e]

Section 8. Exposure controls/personal protection

[3]Skin sensitization

Form: [a]Aerosol [b]aerosol [c]Particulate [d]Vapour [e]vapour and mist

Mexico

Occupational exposure limits

Ingredient	Exposure limits
No exposure limit value known.	

Consult local authorities for acceptable exposure limits.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid. [Paste.]
Color	: White.
Odor	: Characteristic.
Odor threshold	: Not available.
pH	: 7 to 8
Melting point	: Not available.
Boiling point	: 100°C (212°F)
Flash point	: Closed cup: >93.333°C (>200°F) [Setaflash.]
Evaporation rate	: >1 (butyl acetate = 1)
VOC (less water, less exempt solvents)	: 40.82 g/l
Relative density	: 1.52423

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ethanediol	LC50 Inhalation Vapor LD50 Oral	Rat Rat	10.92 mg/l 4700 mg/kg	4 hours -

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
ethanediol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Eyes - Mild irritant	Eyes - Mild irritant	Rabbit	-	1 hours 100 milligrams	-
Eyes - Moderate irritant	Eyes - Moderate irritant	Rabbit	-	6 hours 1440 milligrams	-
Skin - Mild Irritant	Skin - Mild irritant	Rabbit	-	555 milligrams	-

Conclusion/Summary

Skin	: Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Eyes	: This product may irritate eyes upon contact.
Respiratory	: Inhalation of oil mist or vapors at elevated temperatures may cause respiratory irritation.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
ethanediol	Category 2 Category 3	Oral Not applicable.	kidneys Narcotic effects

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Inhalation.
Routes of entry not anticipated: Dermal.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : Harmful if inhaled.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
ethanediol	Acute EC50 10940 mg/l	Algae - Selenastrum capricornutum	96 hours
	Acute LC50 13140000 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 41000000 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 8050000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 10000 mg/l	Algae - Selenastrum capricornutum	96 hours

Conclusion/Summary : Not available.

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
ethanediol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
ethanediol	-1.36	10	low

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR:** Nonylphenol, branched, ethoxylated; Poly(oxy-1,2-ethanediyl), α -[1,1,3,3-tetramethylbutyl)phenyl]- ω -hydroxy-
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Section 15. Regulatory information

Clean Air Act Section 602 : Not listed
 Class II Substances

SARA 302/304**Composition/information on ingredients**

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
ethanediol	0.1 - 0.5	No.	No.	No.	Yes.	Yes.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

Not available.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Not applicable.				

Canada**Canadian lists**

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

Canada inventory : Not determined.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Mexico

Classification :

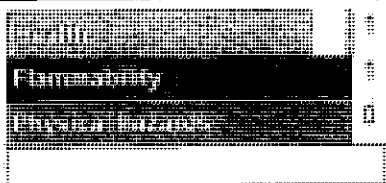
**International regulations**

Section 15. Regulatory information

International lists	: Australia inventory (AICS): At least one component is not listed. China inventory (IECSC): Not determined. Japan inventory: Not determined. Korea inventory: Not determined. Malaysia Inventory (EHS Register): Not determined. New Zealand Inventory of Chemicals (NZIoC): Not determined. Philippines inventory (PICCS): Not determined. Taiwan inventory (CSNN): Not determined.
Europe	: Not determined.
Chemical Weapons Convention List Schedule I Chemicals	: Not listed
Chemical Weapons Convention List Schedule II Chemicals	: Not listed
Chemical Weapons Convention List Schedule III Chemicals	: Not listed

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing	: 6/5/2015.
Date of issue/Date of revision	: 6/5/2015.

Section 16. Other information**Date of previous issue** : 5/26/2015.**Version** : 4.1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.☒ Indicates information that has changed from previously issued version.**Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

High Temperature Adhesive

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- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Methods and materials for containment and cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
- Conditions for safe storage : Store at room temperature.
- Materials to avoid : No materials to be especially mentioned.
- Packaging material : Unsuitable material: Aluminium

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
limestone (Natural)	1317-65-3	TWA (Respirable)	5 mg/m ³	NIOSH REL
		TWA (total)	10 mg/m ³	NIOSH REL
		TWA (Respirable)	5 mg/m ³	NIOSH REL
		TWA (total)	10 mg/m ³	NIOSH REL
		TWA (total dust)	15 mg/m ³	OSHA
		TWA (respirable fraction)	5 mg/m ³	OSHA
		TWA (Total dust)	15 mg/m ³	OSHA
		TWA (respirable dust fraction)	5 mg/m ³	OSHA
		TWA	5 mg/m ³	NIOSH REL

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Print Date 07/30/2015

	(Respirable)		
	TWA (total)	10 mg/m3	NIOSH REL

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Hand protection
Remarks : For prolonged or repeated contact use protective gloves.
- Eye protection : Safety glasses
- Skin and body protection : If used and stored as directed, no special protective equipment is necessary.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Written instructions for handling must be available at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : light yellow
- Odour : slight
- Odour Threshold : No data available
- pH : 10.7
: Not applicable
- Boiling point/boiling range : 212 °F
- Flash point : No data available
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Upper explosion limit : No data available
- Lower explosion limit : No data available
- Vapour pressure : No data available
- Relative vapour density : No data available
- Relative density : 1.3
- Solubility(ies)
Water solubility : completely miscible

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Print Date 07/30/2015

Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: 7.2 Pas
Viscosity, kinematic	: 7,200 mm ² /s

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: Stable under recommended storage conditions. No hazards to be specially mentioned.
Conditions to avoid	: No data available

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity****Components:****limestone (Natural):**

Acute oral toxicity : LD50 (Rat): > 6,450 mg/kg

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Further information**Product:**

Remarks: No data available

High Temperature Adhesive

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation

40 CFR Protection of Environment; Part 82 Protection of
Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured with a
Class I or Class II ODS as defined by the U.S. Clean Air Act
Section 602 (40 CFR 82, Subpl. A, App.A + B).Additional ecological
information

: No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Contaminated packaging

: Empty containers should be taken to an approved waste
handling site for recycling or disposal.
Packaging that can not be reused after cleaning must be
disposed or recycled in accordance with all federal, national
and local regulations.

SECTION 14. TRANSPORT INFORMATION**International transport regulations**

These products are not classified as dangerous goods according to international transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA list

: Not relevant

Not relevant

High Temperature Adhesive

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EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.

: limestone (Natural)

SECTION 16. OTHER INFORMATION**Further information**

Revision Date : 01/15/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



SAFETY DATA SHEET

Identification

Product identifier **HYDROCAL® White Gypsum Cement**

Other means of identification

SDS number 52000000092

Synonyms Gypsum Cement

Recommended use Base.

Recommended restrictions Use in accordance with manufacturer's recommendations.

Manufacturer/Importer/Supplier/Distributor information

Company name United States Gypsum Company

Address 550 West Adams Street
Chicago, Illinois 60661-3637

Telephone 1-800-874-4968

Website www.usg.com

Emergency phone number 1-800-507-8899

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement None.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Get medical attention/advice if you feel unwell.

Storage Store as indicated in Section 7.

Disposal Dispose of in accordance with local, state, and federal regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1)	26499-65-0	> 95

Composition comments All concentrations are in percent by weight unless ingredient is a gas.

4. First-aid measures

Inhalation Dust irritates the respiratory system, and may cause coughing and difficulties in breathing. Move injured person into fresh air and keep person calm under observation. Get medical attention if symptoms persist.

Skin contact Contact with dust: Rinse area with plenty of water. Get medical attention if irritation develops or persists.

Eye contact Dust in the eyes: Do not rub eyes. Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion Plaster of Paris hardens and if ingested may result in stomach and intestinal blockage. Drinking gelatin solutions or large volumes of water may delay setting.

Most important symptoms/effects, acute and delayed

Under normal conditions of intended use, this product is not expected to be a health risk. Dust may irritate throat and respiratory system and cause coughing.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

Ensure that medical personnel are aware of the material(s) involved.

5. Fire-fighting measures

Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media

Not applicable.

Specific hazards arising from the chemical

Not a fire hazard.

Special protective equipment and precautions for firefighters

Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions

Use standard firefighting procedures and consider the hazards of other involved materials.

Specific methods

Cool material exposed to heat with water spray and remove it if no risk is involved.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

See Section 8 of the SDS for Personal Protective Equipment.

Methods and materials for containment and cleaning up

Vacuum up the spilled material. Vacuums used for this purpose should be equipped with HEPA filters. Containers must be labeled. Collect in approved containers and seal securely. For waste disposal, see Section 13 of the SDS.

Environmental precautions

Avoid discharge to drains, sewers, and other water systems.

7. Handling and storage

Precautions for safe handling

Minimize dust production when mixing, or opening and closing bags. Avoid inhalation of dust. Wear appropriate personal protective equipment. Wash hands after handling. Observe good industrial hygiene practices and use appropriate lifting techniques.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated place. Store away from incompatible materials. Avoid contact with acids, water, and moisture.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)	TWA	10 mg/m3	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)	TWA	5 mg/m3	Respirable.

Components	Type	Value	Form
		10 mg/m ³	Total
Biological limit values	No biological exposure limits noted for the ingredient(s).		
Appropriate engineering controls	Provide sufficient ventilation for operations causing dust formation. Observe occupational exposure limits and minimize the risk of exposure.		
Individual protection measures, such as personal protective equipment			
Eye/face protection	Wear approved safety goggles.		
Skin protection			
Hand protection	It is a good industrial hygiene practice to minimize skin contact. For prolonged or repeated skin contact use suitable protective gloves.		
Other	Normal work clothing (long sleeved shirts and long pants) is recommended.		
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.		
Thermal hazards	None.		
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment separately from regular wash. Observe any medical surveillance requirements.		

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Powder.
Color	White to off-white.
Odor	Low to no odor.
Odor threshold	Not applicable.
pH	6 - 8
Melting point/freezing point	Not applicable. Not applicable.
Initial boiling point and boiling range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit - upper (%)	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	2.96 (H ₂ O=1)
Solubility(ies)	
Solubility (water)	0.15 - 0.4 g/100 g (H ₂ O)
Partition coefficient (octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.

Decomposition temperature	2642 °F (1450 °C)
Viscosity	Not applicable.
Other information	
Bulk density	55 - 70 lb/ft³
Particle size	Varies.
VOC (Weight %)	0 %

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	When mixed with water this product can become very hot. Encasing or making moulds of any body part can cause serious burns that may require surgical removal of affected tissue and even amputation of encased body part.
Incompatible materials	Acids. Exposure to water and acids must be supervised because the reactions are vigorous and produce large amounts of heat.
Hazardous decomposition products	Calcium oxides. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion may cause irritation and stomach discomfort.
Inhalation	Airborne dust may irritate throat and upper respiratory system causing coughing.
Skin contact	Under normal conditions of intended use, this product does not pose a skin hazard.
Eye contact	Direct contact with airborne particulates may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics	Dust may irritate eyes and mucous membranes of the nose, throat and upper respiratory system causing sneezing and/or coughing.

Information on toxicological effects

Acute toxicity	Not expected to be a hazard under normal conditions of intended use.
Skin corrosion/irritation	Not a skin irritant.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not expected to cause respiratory sensitization based on non-skin sensitization history.
Skin sensitization	Not a skin sensitizer. Plaster of Paris has displayed little sensitization potential.
Germ cell mutagenicity	No evidence of mutagenicity found in Ames bacterial tests.
Carcinogenicity	This material is not classified as a carcinogen by IARC, ACGIH, NTP or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	Not expected to be a reproductive hazard.
Specific target organ toxicity - single exposure	No data available, but none expected.
Specific target organ toxicity - repeated exposure	No data available, but none expected.
Aspiration hazard	Due to the physical form of the product it is not an aspiration hazard.
Chronic effects	No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) > 1970 mg/l, 96 hours
Persistence and degradability	Calcium sulfate dissolves in water forming calcium and sulfate ions.	
Bioaccumulative potential	Bioaccumulation is not expected.	
Mobility in soil	No data available.	
Other adverse effects	None expected.	

13. Disposal considerations

Disposal instructions	Dispose in accordance with applicable federal, state, and local regulations. Recycle responsibly.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in accordance with local regulations.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable. This product is a solid. Therefore, bulk transport is governed by IMSBC code.

15. Regulatory information

federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200 (OSHA) and 8 CCR § 5194 (Cal/OSHA).

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

- Immediate Hazard - No
- Delayed Hazard - No
- Fire Hazard - No
- Pressure Hazard - No
- Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)

US. New Jersey Worker and Community Right-to-Know Act

Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)

US. Pennsylvania Worker and Community Right-to-Know Law

Plaster of Paris (Calcium Sulfate Hemihydrate CAS 10034-76-1) (CAS 26499-65-0)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 06-August-2014

Revision date -

Version # 01

Further information Plaster of Paris: Is classified as a hazardous substance but is generally considered a safe material for routine use. When plaster of Paris is used responsibly it is not considered as a dangerous material. However, when mixed with water this product can become very hot. DO NOT attempt to make a cast enclosing any part of the body. Encasing any body part can cause serious burns and even amputation of the encased body part.

NFPA Ratings:

Health: 1

Flammability: 0

Physical hazard: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

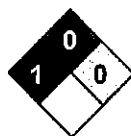
HMIS® ratings

Health: 0

Flammability: 0

Physical hazard: 0

NFPA ratings



Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



Industrial Insulation Group

A Celisite/Johns Manville Joint Venture

Date: 9/5/2008
MSDS ID: 20508
Rev: 1.0.3
Replaces: 10/27/2005

Material Safety Data Sheet

Material Name: Insulation Coating

Section 1— Chemical Product and Company Identification

Product Name: Insulkote® ET
CAS# Mixture/None Assigned
Generic Name: Weather Coating
Formula: Mixture
Chemical Name: Mixture

Manufacturer Information

Industrial Insulation Group
2100 Line Street
Brunswick, GA 31520

Phone number for Health and Safety Information: 970.858.6211 (M-F, 7:00a.m. to 4:00p.m., Mountain Time)

Trade Name: Insulkote ET

Section 2 — Composition and Information on Ingredients

CAS #	Component	Percent	OSHA	ACGIH	NIOSH	UNITS
			PEL	TLV	REL	
7732-18-5	Water	<55	NE	NE	NE	
8052-42-4	Asphalt	<50	NE	0.5	NE	mg/M ³
1302-78-9	Aluminum Silicate	<10	NE	NE	NE	mg/M ³

NE = Not Established

ACGIH TLVs are 2006 values. OSHA PELs are those in effect on the date of preparation of this MSDS. The listed PELs, TVLs and RELs are time weighted average exposure limits.

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following:
Nuisance particulates not otherwise regulated.

Section 3 — Hazards Identification

Emergency Overview

APPEARANCE AND ODOR: Brown paste with slight hydrocarbon odor.

Under normal conditions of use, this product is not expected to create any unusual emergency hazards.

Skin irritation may be treated by gently washing affected area with soap and warm water.

Eye irritation may be treated by flushing eyes with large amounts of water. If irritation persists, contact a physician.

In the event of fire, use normal fire fighting procedures to prevent inhalation of smoke and gases

HMIS Rating: Health: 1, Fire: 0, Reactivity 0, Other: 0

WHMIS Class: Insulkote ET is not a WHMIS controlled product

Potential Health Effects

Summary

Inhalation of dust from this product is not likely to occur due to intended use and the product form.

Excessive skin and eye contact may cause irritation, and dryness.

Studies of workers exposed to asphalt fume have been classified as providing inadequate evidence of carcinogenicity.

Asphalt fume condensate skin painting studies on animals have shown tumor development.

Inhalation

Irritation of the upper respiratory tract (scratchy throat), coughing, and congestion may occur in extreme exposures.

Skin

Temporary irritation (itching) or redness may occur.

Absorption

Not applicable

Ingestion

This product is not intended to be ingested or eaten under normal conditions of use. If ingested, it may cause temporary irritation to the gastrointestinal (GI) tract, especially the stomach.

Eyes

Temporary irritation (itching) or redness may occur.

Target Organs

Upper respiratory passages, skin, and eyes.

Primary Routes of Entry (Exposure)

Inhalation, skin, and eye contact.

Medical Conditions Aggravated by Exposure

Pre-existing chronic respiratory, skin, or eye diseases or conditions.

Section 4 — First Aid Measures**First Aid: Inhalation**

Remove to fresh air. Drink water to clear throat. Blow nose to clear nasal passages. Administer artificial respiration or oxygen as necessary.

First Aid: Skin

Wash gently with soap and warm water to remove dust. Wash hands before eating or using the restroom.

First Aid: Ingestion

Product is not intended to be ingested or eaten. If this product is ingested, irritation of the gastrointestinal (GI) tract may occur, and should be treated symptomatically. Rinse mouth with water to remove fibers, and drink plenty of water to help reduce the irritation. No chronic effects are expected following ingestion.

First Aid: Eyes

Do not rub or scratch your eyes. Chemicals contained in this product are severe irritants. Flush eyes with large amounts of water for 5-15 minutes. If irritation persists, contact a medical professional.

First Aid: Notes to Physician

This product is a water based emulsion and is not expected to produce any chronic health effects from acute exposures. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.

Section 5 — Fire Fighting Measures

Flash Point: Not applicable
Upper Flammable Limit (UFL): Not applicable
Auto Ignition: Not determined
Rate of Burning: Not applicable

Method Used: Not applicable
Lower Flammable Limit (LFL): Not applicable
Flammability Classification: Non combustible

General Fire Hazards

Petroleum based compounds can float on water. Do not enter any enclosed or confined fire space without proper protective equipment, including self contained breathing apparatus.

Hazardous Combustion Products

Irritating and toxic gases or fumes may be released during a fire.

Extinguishing Media

DO NOT USE WATER. Carbon dioxide (CO₂), foam, water fog, dry chemical. Water should be used only to cool other materials that are in or near the fire.

Fire Fighting Equipment/Instructions

Firefighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.

Section 6 — Accidental Release Measures**Containment Procedures**

Take up with sand or other non-combustible, absorbent material. Clean spills in a well-ventilated area and shovel absorbed material into containers. Prevent spilled material from entering sewers or water sources.

exposures.

Clean-Up Procedures

Wastes are not hazardous as defined by the RCRA (40 CFR 261). Comply with state and local regulations for disposal of these products. If you are unsure of the regulations, contact your local Public Health Department, or the local office of the EPA.

Section 7 — Handling and Storage

Handling Procedures

Use protective equipment as described in Section 2 of this material safety data sheet when handling uncontained material. Good housekeeping practices should be used to prevent generation and accumulation of dusts. After handling product, wash face and hands before eating, drinking, or smoking.

Storage Procedures

Warehouse storage should be in accordance with package directions, if any. Material should be kept dry, and protected from the elements.

Section 8 — Exposure Control and Personal Protection

Personal Protective Equipment

Protective equipment should be used as necessary to prevent irritation of the throat, eyes, and skin, and to keep exposures below the applicable exposure limits identified in Section 2

Personal Protective Equipment: Eyes/Face

Safety glasses with side shields are recommended to keep dust out of the eyes.

Personal Protective Equipment: Skin

Leather or cotton gloves should be worn to prevent skin contact and irritation. Barrier creams may also be used to reduce skin contact and irritation.

Personal Protective Equipment: Respiratory

A respirator should be used if ventilation is unavailable, or is inadequate for keeping dust and fiber levels below the applicable exposure limits. In those cases, use a NIOSH-certified disposable or reusable particulate respirator with an efficiency rating of N95 or higher (under 42 CFR 84) when working with this product. For exposures up to five times the established exposure limits use a quarter-mask respirator, rated N95 or higher; and for exposures up to ten times the established exposure limits use a half-mask respirator (e.g., MSA's DM-11, Racal's Delta N95, 3M's 8210), rated N95 or higher.

Operations such as sawing, blowing, tear out, and spraying may generate airborne fiber concentrations requiring a higher level of respiratory protection. For exposures up to 50 times the established exposure limits use a full-face respirator, rated N99 or higher.

Ventilation

In fixed manufacturing settings, local exhaust ventilation should be provided at areas of cutting to remove airborne dust and fibers. General dilution ventilation should be provided as necessary to keep airborne dust and fibers below the applicable exposure limits and guidelines. The need for ventilation systems should be evaluated by a professional industrial hygienist, while the design of specific ventilation systems should be conducted by a professional engineer.

Personal Protective Equipment: General

Loose-fitting, long-sleeved clothing should be worn to protect the skin from irritation. Exposed skin areas should be washed with soap and warm water after handling.

Section 9 — Physical & Chemical Properties

Appearance:	Brown paste	pH:	7-10
Odor:	Hydrocarbon	Vapor Density:	Not applicable
Physical State:	Solid	Melting Point:	Not applicable
Vapor Pressure:	60mm Hg at 100°F	Specific Gravity:	>1
Boiling Point:	212°F	Freezing Point:	Not applicable
Solubility (H2O):	Miscible	Evaporation Rate:	Not applicable
Viscosity:	Not determined	Percent Volatile:	<55% (H ₂ O)
VOC:	<55%		

Section 10 — Chemical Stability & Reactivity Information

Chemical Stability

This is a stable material. This product is not reactive.

Incompatibility

Material is incompatible with strong oxidizers.

Hazardous Decomposition

Carbon monoxide, carbon dioxide, oxides of sulfur, water vapor, and miscellaneous hydrocarbons may be released under fire conditions.

Hazardous Polymerization

Will not occur.

Section 11 — Toxicological Information

Acute Toxicity

A: General Product Information

The primary acute health effects of this product include mechanical irritation of the skin and eyes and skin dryness as a result of contact with fumes and dust.

B: Component Analysis - LD50/LC50

No LD50/LC50's are available for this product or its components.

Carcinogenicity

A: General Product Information

OSHA, NTP, IARC, and ACGIH have not classified this product in its entirety as a carcinogen.

B: Component Carcinogenicity

Asphalt (8052-42-4)

ACGIH: A4 - Not Classifiable as a Human Carcinogen (Benzene-soluble aerosol)

IARC: Supplement 7, 1987; Monograph 35, 1985; (extracts of steam and air refined bitumens) (Group 2B (possibly carcinogenic to humans))

Chronic Toxicity

Asphalt: In 1994, IARC reconfirmed its earlier assessment that studies of workers exposed to asphalt provide inadequate evidence of carcinogenicity. IARC had previously classified asphalt as a Group 3 substance. Animal studies in which high concentrations of asphalt fumes were breathed for extended periods of time did not indicate any cancer effects. Bronchitis and pneumonitis were observed. Two studies where condensed fractions of certain asphalt fume condensates were repeatedly applied to the skin of laboratory animals reported the induction of skin cancers. The asphalt fume condensates collected for these studies were subjected to extremely high temperatures (316°C/601°F) and were heated for seven to ten hours while being continually stirred. This is not typical of any asphalt application. Trace amounts of polynuclear aromatic hydrocarbons (PAHs) may be present in some asphalts and can be generated upon excessive heating, which results in thermal cracking of the asphalt compounds. Some of these PAHs have been identified as having potential carcinogenic and reproductive health effects.

Section 12 — Ecological Information

Ecotoxicity

A: General Product Information

No data available for this product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Section 13 — Disposal Considerations

US EPA Waste Number & Descriptions

A: General Product Information

This product, as supplied, is not regulated as a hazardous waste by the EPA under RCRA regulations. Comply with state and local regulations for disposal. If you are unsure of the regulations, contact your local Public Health Department, or the local office of the EPA.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Section 14 — Transport Information

US DOT Information

Shipping Name: This product is not classified a hazardous material for transport.

Section 15 — Regulatory Information

US Federal Regulations

A: General Product Information

No information on this product as a whole.

B: Component Analysis

This material contains one chemical required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4); Potassium Dichromate (7778-50-9), CERCLA; Final RQ=10 pounds (4.54 kg)

State Regulations

A: General Product Information

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): WARNING! This product contains a chemical known to the state of California to cause cancer.

Other Regulatory Information

A: General Product Information

No information available for the product.

B: TSCA Status

This product and its components are listed on the TSCA 8(b) inventory.

International Regulations

Canada Workplace Hazardous Materials Information System (WHMIS)

WHMIS Classification: D2B— Irritant

Component Analysis - WHMIS IDL

This product and its components are not listed in the WHMIS IDL

Section 16 — Other Information

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Key/Legend:

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; NFPA = National Fire Protection Association; HMIS = Hazardous Material Identification System; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act; DSL = Canadian Domestic Substance List; EINECS = European Inventory of New and Existing Chemical Substances; WHMIS = Workplace Hazardous Materials Information System; CAA = Clean Air Act; CHPA = Canadian Hazardous Product Act; IDL = Canadian Hazardous Disclosure List

Revision Summary:

This is a revised MSDS which replaces version 1.0.2 with a new date. Get this and other MSDS forms electronically via Internet: <http://www.iig-llc.com> or by calling 800-866-3234.

As of the date of preparation of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state law(s). However, no warranty or representation with respect to such information is intended or given.

Prepared by IIG Technical Services

IMPORTANT SAFETY NOTICE: The information in this MSDS relates only to the specific material described herein and does not relate to use in combination with any other material or substance or in any process. Because of the use of this information and the conditions of use of this product are not within the control of Industrial Insulation Group, it is the users obligation to determine the conditions of safe use of this product. Users of this product should study this MSDS and become aware of the product hazards and safety information before using this product. Users should also notify their employees, agents, and contractors regarding information contained in this MSDS and any product hazards and safety information in order to provide for safe use of this product.

SAFETY DATA SHEET

SECTION 1 — IDENTIFICATION

Manufacturer's name and address:



K-FLEX USA

K-FLEX USA
100 Nomaco Drive
Youngsville, NC 27596
USA

Supplier's name and address:

Refer to Manufacturer

Information Telephone No.	:	(800) 765-6475	
Website Address	:	http://www.kflexusa.com	
24 Hr Emergency Telephone #	:	CHEM-TREC: 1-800-424-9300	
Product Identifier	:	KFLEX® 373 Adhesive	
Chemical Name	:	N/Ap	Chemical Family : Mixture
Chemical Formula	:	N/Ap	Trade Name/Synonyms : K-FLEX 373
Molecular Weight	:	N/Ap	Material Use : Neoprene contact adhesive.

SECTION 2 — HAZARDS IDENTIFICATION

GHS Classification per 29CFR 1910 (OSHA Hazard Communication Standard)

Flammable liquids; Category 2
Aspiration hazard; Category 1
Skin corrosion/irritation; Category 2
Serious eye damage/eye irritation; Category 2A
Sensitization, Skin; Category 1
Specific target organ toxicity, single exposure; Narcotic effects; Category 3
Reproductive toxicity; Category 2
Specific target organ toxicity, repeated exposure; Category 2
Hazardous to the aquatic environment, long-term hazard, Category 2

WHMIS Classification

Class B2 — Flammable Liquid;
Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material);
Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

GHS Pictograms



Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
May be fatal if swallowed and enters airways.
Causes skin and serious eye irritation.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.
Suspected of damaging fertility or the unborn child.
May cause damage to organs <Central nervous system, kidneys, liver>
through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects.

Precautionary Statements

Obtain special instructions before use. (See Section 7.) Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/.../equipment. Use only non-sparking tools. Take precautionary measures against static discharge. In case of fire: Use fire extinguishers suitable for Classes B, C, or E for extinction. Do not breathe vapors. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection. Wash hands and exposed skin thoroughly after handling. Wash contaminated clothing before reuse. Avoid release to the environment. Collect spillage. Hazardous to the aquatic environment. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents / container in accordance with federal, state, and local laws. Do not allow product to enter drains.

Hazards Not Otherwise Classified

Vapor may cause flash fire! May be an aspiration hazard.

% With Unknown Acute Toxicity : 6% by weight of this product is comprised of ingredients with unknown acute toxicity.

HMIS Rating

: * - Chronic Hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
Health: *2 Flammability 3 Reactivity 0

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (by weight)
Acetone	67-64-1	30.00 – 60.00
Hexanes	110-54-3	10.00 – 30.00
Toluene	108-88-3	10.00 – 30.00
Phenolic resin	25085-50-1	5.00 – 10.00

The exact percentages of the ingredients have been withheld by the manufacturer as trade secrets.

SECTION 4 – FIRST AID MEASURES

- General** : IF exposed or concerned: Get medical advice/attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: call a doctor/physician.
- Skin contact** : Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice.
- Eye contact** : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
- Ingestion** : Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.
- Notes for Physician** : Treat symptomatically.
- Signs and symptoms of short-term (acute) exposure**
- Inhalation* : May cause irritation to the nose, throat, and respiratory tract. Inhalation of high concentrations may cause CNS effects such as nausea, headache, dizziness, fatigue, unconsciousness, and coma. May cause motor incoordination and speech abnormalities. Breathing high concentrations of this material, for example in an enclosed space or by intentional abuse, can cause irregular heartbeats which can cause death.

- Skin** : May cause moderate skin irritation. Product may be absorbed through the skin, producing effects similar to inhalation or ingestion. Allergic skin reaction: Symptoms may include redness, swelling, blistering, and itching.
- Eyes** : Direct contact will cause moderate to severe irritation to the eyes. Symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Ingestion** : May cause irritation to the mouth, throat, and stomach. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea. This material can get into the lungs (aspiration) during swallowing or vomiting. Small amounts in the lungs can cause chemical pneumonitis, possibly leading to chronic lung dysfunction or death.

Effects of long-term (chronic) exposure

- : Chronic exposure may cause drying, cracking, and defatting of the skin. Chronic effects of ingestion and subsequent aspiration into the lungs may cause pneumatocele (lung cavity) formation and chronic lung dysfunction. Prolonged occupational overexposure to solvents may cause irreversible brain and nervous system damage (sometimes referred to as "Solvent or Painter's Syndrome"). Intentional misuse by intentionally concentrating and inhaling the vapors from this product may be harmful or fatal. Toluene, a component of this product, may cause harm to the human fetus, based on tests with laboratory animals. Long term overexposure to Toluene has been associated with peripheral neuropathy (damage to the nerves of the hands and feet), liver effects, kidney effects, impaired color vision and hearing damage.

Indication of need for immediate medical attention or special treatment

- : Difficulty breathing persists after removing the person to fresh air.
Any exposure to the eye which causes irritation.
Ingestion.

SECTION 5 – FIRE FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide, dry chemical powder, appropriate foam or water fog.

Unsuitable extinguishing media : water jet

Hazardous combustion products : Carbon oxides; Hydrocarbons; Aldehydes; Hydrogen chloride gas; other unidentified organic compounds.

Special fire-fighting procedures/equipment

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. After fires have been extinguished, carefully clean all equipment and surfaces exposed to fumes.

Environmental precautions : Avoid release to the environment. Collect spillage. Hazardous to the aquatic environment. Do not allow material to enter drains or contaminate ground water system.

Fire hazards/conditions of flammability

- : Highly flammable liquid. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapors may be heavier than air and may collect in confined and low-lying areas. Vapor can travel considerable distance and flashback to a source of ignition. Material will float on water and can be re-ignited at the water's surface. Static discharge may ignite this product's vapors.

Flammability classification (OSHA 29 CFR 1910.1200)

- : Flammable Liquid, Category 2.

Flammability classification (WHMIS)

- : Flammable Liquid Class B2.

Flammability classification (NFPA)

- : Flammable Liquid Class 1B.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Restrict access to area until completion of clean-up. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to Section 8 on this Safety Data Sheet, EXPOSURE CONTROLS / PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.
- Environmental precautions** : Avoid release to the environment. Collect spillage. Hazardous to the aquatic environment. Do not allow product to enter waterways. Do not allow material to contaminate ground water system.
- Spill response / clean-up** : Ventilate area of release. Eliminate all ignition sources. Stop spill or leak at source if safely possible. Use non-sparking tools to contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g., sand), then place absorbent material into a container for later disposal (see Section 13). Do not flush into surface water or sanitary sewer system. Notify the appropriate authorities as required.
- Incompatible materials** : See Section 10.
- Special spill response procedures** : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).
US CERCLA Reportable quantity (RQ): Hexane (5000 lbs / 2270 kg); Acetone (5000 lbs / 2270 kg); Toluene (1000 lbs / 454 kg).

SECTION 7 – HANDLING AND STORAGE

- Special Instructions** : HIGHLY FLAMMABLE LIQUID AND VAPOR. May cause flash fire. Keep away from fire, sources of heat, or sources of electrical discharges. Aspiration Hazard – may enter lungs and cause damage. If ingested, do not induce vomiting. Inhaling fumes may cause dizziness, drowsiness, nausea, headaches, and/or other Central Nervous System (CNS) symptoms. Contains a material that may cause peripheral nervous system damage. Breathing high concentrations can cause irregular heartbeats which may be fatal. Developmental hazard - Contains Toluene, which may cause birth defects or other reproductive harm. Avoid breathing vapors.
- Safe handling procedures** : Wear chemically resistant protective equipment during handling. Use in a well-ventilated area. Training the workers on the potential health hazards associated with product vapor is important. Do not breathe vapors. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Keep away from oxidizing materials. Keep containers tightly closed when not in use. Wash hands and exposed skin thoroughly after handling. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid).
- Storage requirements** : Store in a cool, dry, well-ventilated area. No smoking in the area. Do not store near any incompatible materials (see Section 10). Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Protect against physical damage.
- Incompatible materials** : See Section 10.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Permissible exposure levels** : No exposure limits have been established for the product itself. Below are exposure limits for the components in the product.

Ingredients	CAS #	ACGIH TLV		OSHA PEL	
		TWA	STEL	PEL	STEL
Acetone	67-64-1	500 ppm	750 ppm	1000 ppm TWA 2400 mg/m ³ TWA	N/Av
Hexanes	110-54-3	50 ppm	N/Av	500 ppm 1800 mg/m ³	N/Av
Toluene	108-88-3	20 ppm	N/Av	200 ppm	300 ppm (10 min)
p-tert-Butylphenol formaldehyde resin	25085-50-1	N/Av	N/Av	N/Av	N/Av

Ventilation and engineering measures

: Use with adequate ventilation. Provide adequate cross air circulation. Use explosion-proof general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. If the TLV is exceeded, wear a NIOSH/MSHA-approved respirator with organic vapor cartridges.

Skin protection

: Impervious gloves must be worn when using this product. Glove materials such as nitrile rubber or Viton (fluorocarbon rubber) are recommended. Advice should be sought from glove suppliers regarding the glove's breakthrough time for the ingredients listed in Section 3.

Eye / face protection

: Chemical goggles are recommended. A full face shield may also be necessary.

Other protective equipment

: Full chemical-resistant protective clothing should be used whenever splashing is anticipated. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

: Avoid contact with eyes, skin and clothing. Do not breathe vapors. Do not eat, drink or smoke when using this product. Clean all equipment and clothing, and shower with mild soap and water at end of each work shift.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid	Appearance	: blue liquid.
Odor	: Characteristic solvent odor		
Odor threshold	: N/Av	pH	: N/Av
Specific gravity	: 0.83	Boiling point	: > 133°F (>56.5°C)
Coefficient of water/oil distribution	: N/Av	Melting/Freezing point	: N/Av
Solubility in water	: negligible	Vapor pressure (mm Hg @ 20°C / 68°F)	: 180
Evaporation rate (n-Butyl acetate = 1)	: N/Av	Vapor density (Air = 1)	: N/Av
Volatiles (% by weight)	: 80 – 82	General information	: N/Av
Volatile organic compounds (VOCs)	: 615 g/L (Calculated, SCAQMD Rule 1168)		
Particle size	: N/Av	Flammability classification (GHS)	: Flammable Liquid Cat. 2
Flash point	: -15°F (-26°C)	Lower flammable limit (% by vol)	: Not available
Flash point method	: Setflash closed	Upper flammable limit (% by vol)	: Not available
Auto-ignition temperature	: N/Av	Decomposition temperature	: Not available
Viscosity	: Not available	Oxidizing properties	: Not available
Explosion data: Sensitivity to mechanical impact / static discharge			
	: Static discharge could ignite the vapors of this product. Not expected to be sensitive to mechanical impact.		

SECTION 10 – REACTIVITY AND STABILITY INFORMATION

Stability and reactivity	: Stable under the recommended storage and handling conditions prescribed.
Hazardous polymerization	: Hazardous polymerization does not occur.

- Conditions to avoid** : Keep this product away from heat, sparks, flame, and other sources of ignition (e.g., pilot lights, electric motors, static electricity).
- Materials to avoid and incompatibility** : Strong oxidizing agents; Reducing agents; Acids, Bases.
- Hazardous decomposition products** : None known, refer to hazardous combustion products in Section 5.

SECTION 11 – TOXICOLOGICAL INFORMATION

- Target organs** : Central Nervous System (CNS); Eyes; Skin; Kidneys; Lungs; Liver; Heart.
- Routes of Exposure** : *Inhalation*: YES *Skin Absorption*: YES *Skin and Eyes*: YES *Ingestion*: YES
- Toxicological data** : See below for individual ingredient acute toxicity data.

Ingredients		LC50 (4 hr)	LD50	
		Inhalation, rat, mg/L	Oral, rat, mg/kg	Dermal, rabbit, mg/kg
Acetone	67-64-1	50.1	5800	20000
Hexane	110-54-3	31.86	16000	> 2000
Toluene	108-88-3	28.1	5580	> 5000
p-tert-Butylphenol formaldehyde resin	25085-50-1	N/Av	N/Av	N/Av

Calculated Acute Toxicity Estimates for the Product

- Inhalation* : > 35 mg/L
- Oral* : > 8000 mg/kg
- Dermal* : > 5000 mg/kg

- Carcinogenic status** : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
- Reproductive effects** : Contains Toluene. Toluene may cause fetotoxic effects at doses which are not maternally toxic, based on animal data.

Germ Cell Mutagenicity

Mutagenicity Test	Acetone	Hexane	Toluene
Ames Test	N/Av	Negative	N/Av
Dominant Lethal Assay, mouse, male Exposure: Inhalation 6h/d, 5 d/wk for 8 wks	N/Av	Negative	Negative
Mammalian cell gene mutation assay, mouse lymphoma cells	N/Av	N/Av	Negative
Chromosome aberration assay in vivo, rat bone marrow, Intraperitoneal	N/Av	N/Av	Negative
Germ Cell Mutagenicity Assessment	N/Av	Not Mutagenic	Not Mutagenic

- Epidemiology** : Not available.
- Sensitization to material** : This product contains a component known to cause allergic skin sensitization reactions.
- Synergistic materials** : N/Av
- Irritancy** : Severe eye irritant. Moderate irritant for respiratory system and skin.
- Other important hazards** : See Section 2 for additional information.

SECTION 12 – ECOLOGICAL INFORMATION

- Environmental effects** : The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.
- Important environmental characteristics**

Ecotoxicological	: No data is available on the product itself.
Ecotoxicity	: No data is available on the product itself. : Both Toluene and Hexane have been assessed to be toxic to aquatic life. Hexane has been assessed to be toxic to aquatic life with long lasting effects. Acetone is not expected to be toxic to aquatic life. Acetone's LC50/96-hour test results are > 100 mg/L.
Component	: Toluene
Toxicity to fish	: 96 h LC50 (Oncorhynchus kisutch (coho salmon)): 5.5 mg/L
Toxicity to invertebrates	: 48 h EC50 (Ceriodaphnia dubia): 3.78 mg/L
Toxicity to algae	: 3 h EC50 (Chlorella vulgaris (Fresh water algae)): 134 mg/L
Toxicity to bacteria	: 24 h IC50 (Bacteria): 84 mg/L
Component	: Hexane
Toxicity to fish	: 96 h LC50 (Pimephales promelas (fathead minnow)): 2.5 mg/L
Toxicity to invertebrates	: 48 h EC50 (Daphnia magna (water flea)): 2.1 mg/L
Toxicity to algae	: 72 h EbL50 (Pseudokirchneriella subcapitata (green algae)): 26 mg/L
Biodegradability	: Acetone : N/Av Readily biodegradable Hexane : 83 % Readily biodegradable Toluene : 100% Readily biodegradable
Bioaccumulative potential	: Acetone : Not expected to bioaccumulate. Hexane : log Pow: 3.90 – 4.11 Toluene : log Pow: 2.73
Mobility in soil	: No data available.
PBT and vPvB assessment	: No data available.
Other adverse effects	: No data available.

SECTION 13 – DISPOSAL CONSIDERATION

Handling for disposal	: Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapor) and can be dangerous. Do not cut, weld, drill or grind on or near this container.
Methods of disposal	: Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
RCRA	: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 – TRANSPORTATION INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
TDG Additional Information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to TDG Part 1: 1.11, 1.17, 1.33; and Schedule 1.				
49 CFR/DOT	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
49 CFR/DOT Additional Information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to 49 CFR 173.150(b) and Special Provision 149.				

SECTION 15 – REGULATORY INFORMATION

Canadian Information:

Canadian WHMIS Classification: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Controlled Products Regulations (CPR). Refer to Section 2 for a WHMIS Classification for this product.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Canadian Environmental Protection Act (CEPA) Information: All ingredients listed appear on the Domestic Substances List (DSL). The following components are listed on the Canadian Ingredient Disclosure List (IDL): Acetone, Hexane, Toluene.

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): Hexane (5000 lbs / 2270 kg); Acetone (5000 lbs / 2270 kg); Toluene (1000 lbs / 454 kg).

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes:

Acute hazard

Chronic hazard.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above de minimus concentrations. This product contains: Hexane; Toluene.

U.S. State Right To Know Laws

California Proposition 65: Warning! This product contains a chemical known to the State of California to cause developmental harm. This product contains: Toluene.

Other State Right to Know Laws:

On State RTK List?	CAS No.	CA	MA	MN	NJ	NY	PA	RI
Acetone	67-64-1	YES	YES	YES	YES	YES	YES	YES
Hexane	110-54-3	YES	YES	YES	YES	YES	YES	YES
Toluene	108-88-3	YES	YES	YES	YES	YES	YES	YES

SECTION 16 - OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CNS: Central Nervous System
DOT: Department of Transportation
DSL: Domestic Substances List
EPA: Environmental Protection Agency
GHS: Globally Harmonized System
IARC: International Agency for Research on Cancer
IDL: Ingredient Disclosure List
Inh: Inhalation
N/Av: Not Available
N/Ap: Not Applicable
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
SARA: Superfund Amendments and Reauthorization Act

STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Disclaimer of Liability

The Information presented herein is supplied as a guide to those who handle or use this product and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive. The manner and conditions of use and handling may involve other and additional considerations. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.

No warranty of any kind is given or implied. K-FLEX USA will not be liable for any damages, losses, injuries or consequential damages which may result from the use or reliance on any information contained herein. This Safety Data Sheet is valid for three (3) years.

Prepared By:

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Visit our Website at

: <http://www.kflexusa.com>

Revision date:

: 19-Nov-2014

End of Document



SECTION 1 – IDENTIFICATION

Product Name: PITTCOTE® 404 COATING

Manufacturer/Supplier:

Pittsburgh Coming Corporation

800 Presque Isle Drive

Pittsburgh, PA 15239

Information Number: 724-327-6100

CHEMTREC: 800/424-9300

Generic Name: Acrylic latex mastic

Use: PITTCOTE® 404 coating is a highly flexible, acrylic latex coating used with FOAMGLAS® insulation where a superior weather barrier coating is required.

Chemical Family: Mixture

General Comments: General information and emergency information available 8:00 AM – 5:00 PM Monday through Friday.

CHEMTREC telephone number is to be used only in the event of chemical transportation emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to technical service.

SECTION 2 – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION: Potential Irritant

SIGNAL WORD: **WARNING**

HAZARD STATEMENT: May cause mild skin irritation
Can cause mild eye irritation
Wear eye protection, protective clothing, and protective gloves.
Avoid breathing sprayed material mists! Use an approved dust or particulate air filter when in close proximity of spraying of coating!



HAZARDOUS POLYMERIZATION: Will Not Occur

ROUTES OF EXPOSURE: Inhalation, Skin, Eyes, and Ingestion.

IMMEDIATE EFFECTS:

INHALATION: May cause mild irritation to mucus membranes and respiratory tract in poorly ventilated areas.

SKIN CONTACT: Repeated or prolonged contact with emulsion may cause mild skin irritation.

EYE CONTACT: Direct contact with eyes may cause mild irritation

INGESTION: Due to nature of product ingestion is not likely. If ingested, see physician

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

ACUTE: Inhalation – may cause respiratory, eye, or nose irritation tract in poorly ventilated areas.

CHRONIC: Inhalation – May cause mild irritation to mucus membranes and respiratory tract in poorly ventilated areas.

CARCINOGENICITY: There are no components in this product that are listed as a carcinogen by NTP, IARC, ACGIH or OSHA.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	App. % by Wt.	CAS #
Acrylic polymer emulsion	38 - 41	Proprietary
Alumina trihydrate	31 - 33	21645-51-2
Water	12-14	7732-18-5
Calcium Carbonate	3 - 8	1317-65-3

SECTION 4 – FIRST AID MEASURES

GENERAL ADVICE: Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. If PITTCOTE® 404 coating comes into contact with skin or hair, wash coating from area immediately. If skin irritation occurs, apply non-irritating skin cream and see physician if irritation continues for more than 2 days.

INHALATION: Remove victim to fresh air. If irritation develops, get medical attention.

SKIN CONTACT: Wash skin with soap and water. If irritation develops, get medical attention

EYE CONTACT: Remove contact lenses. Flush eyes with large amounts of water, preferably lukewarm water, for at least 15 minutes. Avoid rubbing eyes. Get medical attention.

INGESTION: Due to nature of product ingestion is not likely. If oral contact occurs, do not swallow. If swallowed, see physician immediately. Rinse mouth until free of contaminating material. Drink water 16 oz. of water to dilute swallowed material.

SECTION 5 – FIRE FIGHTING MEASURES

This material is 40% water and is not likely to cause or contribute to a fire while wet. When dry, PITTCOTE® 404 coating is fire retardant and is not likely to greatly contribute to a fire. If the material does burn, use normal fire-fighting methods, water and carbon dioxide to control fire.

SUITABLE EXTINGUISHING MEDIA: Water, Foam, Carbon Dioxide, or dry chemical.

EXPLOSION DATA:

SENSITIVITY TO MECHANICAL IMPACT: NA
SENSITIVITY TO STATIC DISCHARGE: NA

**UNUSUAL FIRE AND EXPLOSION
HAZARDS:**

None

**HAZARDOUS COMBUSTION
PRODUCTS:**

Combustion may produce carbon monoxide, carbon dioxide and small amounts of hydrogen chloride.

SPECIAL FIRE FIGHTING MEASURES:

Wear self-contained breathing apparatus and protective clothing.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

**PRECAUTIONS FOR
PERSONNEL:**

Ventilate area if necessary. Wear proper protective clothing including gloves. Wear personal protective equipment. Refer to recommendations in section 8. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling and before eating or drinking.

**ENVIRONMENTAL
PRECAUTIONS:**

Prevent material from entering sewers or waterways. Dike and cover spill with sand, earth, vermiculite or other non-combustible absorbent. Place material in water-resistant container.

**PROCESS FOR
CLEANING:**

Clean up residual material before it dries with soap and water.

**WASTE DISPOSAL
METHOD:**

Dispose of in accordance with local, state and federal regulations.

**REGULATORY
REQUIREMENTS:**

Follow applicable OSHA regulations (29 CFR 1910.120).

SECTION 7 – HANDLING AND STORAGE

HANDLING: Use rubber gloves and protective glasses to protect against prolonged skin exposure and splashing into eyes. Wear particulate matter mask when spraying or when in close proximity to spray area.

STORAGE: Store above 32°F (0°C). Do not allow this material to freeze while in a liquid state. Freezing will damage the polymer emulsion and may make it unusable for its intended purpose. This material will begin to freeze at 31°F (-5.6°C). Do not store in steel drums for more than 3 years without examining the container for corrosion. Corrosion may cause a weakness in the steel container or a leak of the material through the container. If a leak is found, stop leak and transfer to a new container.

KEEP AWAY FROM CHILDREN

SECTION 8 – EXPOSURE RESTRICTIONS AND PERSONAL PROTECTION
EXPOSURE LIMITS

Ingredient	App. % by Vol.	TLV	NIOSH REL TWA	PEL	CAS #
Acrylic polymer emulsion	38 - 41	NE	NE	NE	Proprietary
Alumina trihydrate	31 - 33	2 mg(Al)/m ³	NE	10 mg/m ³ (TD)	21645-51-2
Water	12-14	NE	NE	NE	7732-18-5
Calcium Carbonate	3 - 8	10 mg/m ³ (ND)	UN	15 mg/m ³ (TD) 5 mg/m ³ (RF)	1317-65-3

EXPOSURE GUIDELINES: Toxicity is of this material low, although there are no tests determining or quantifying the level of toxicity of this material. The conclusion of low toxicity is determined by studying the ingredients, their toxicity and amount used in this formula.

ENGINEERING CONTROLS: Local exhaust if needed.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Wear protective Chemical goggles or safety glasses

SKIN PROTECTION: Wear proper protective clothing and equipment including gloves.

**RESPIRATORY
PROTECTION:** a particulate matter mask when spraying or when in close proximity to spray area.

**ENVIRONMENTAL EXPOSURE
CONTROL:**

Provide exhaust ventilation or other engineering controls while spraying, to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits indicated.

WORK/HYGIENIC PRACTICES: Avoid contact with eyes and skin. Wash thoroughly after handling and before eating or drinking.

SPECIAL PRECAUTIONS: Follow protective controls listed in the Exposure Guidelines above when handling these products.

SECTION 9 – PHYSICAL PROPERTIES

Appearance:	Thick white liquid	Flash Point : °C (°F) TCC	NA
Odor:	Mild ammonia odor with mild sweet odors.	Ignition Temperature: °C (°F)	NE
Odor Threshold:	UN	Evaporation Rate (BuAC=1)	2.4
pH	7.5 - 8.5	Flammability:	Non-Flammable
Melting Point/Freezing Point: °C (°F)	-5.6° (31) liquid	Flammable Limits: LEL	NE
		UEL	NE
Boiling Point: °C (°F)	100 (212)	Vapor Pressure: (mm Hg @ 20°C, 68°F)	UN
Solubility in Water:	Dispersible	Vapor Density: (Air = 1)	Lighter than Air
Partition Coefficient: n-octanol/water:	UN	Specific Gravity: (H ₂ O = 1):	1.35 – 1.38 @ 25°C (77°F)
Viscosity	UN	Density: lbs./gal	11.2 – 11.4
VOC: g/l (lbs./gal)	≤ 5 (≤0.04)	Evaporation Rate: (BuAC=1)	Same as Water
		Percent Volatile By Volume: (%)	45

SECTION 10 – STABILITY AND REACTIVITY

REACTIVITY:	Stable
STABILITY:	Stable at standard temperature and pressure.
POSSIBILITY OF HAZARDOUS REACTIONS:	Hazardous polymerization will not occur.
CONDITIONS TO AVOID:	Temperatures below 0°C (32°F) or above 100°C (212°F)
MATERIALS TO AVOID:	None known
DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide and hydrochloric acid may be released or formed as this product burns and decomposes.

SECTION 11 – TOXICOLOGICAL INFORMATION

CAS #	INGREDIENT	DERMAL LD50		INHALATION LD50	ORAL LD50
Proprietary	Acrylic polymer emulsion	UN		UN	UN
21645-51-2	Alumina trihydrate	UN		UN	UN
7732-18-5	Water	UN		UN	UN
1317-65-3	Calcium Carbonate	UN		UN	UN

CAS #	INGREDIENT	CARCINOGENICITY ACGIH IARC		TERATOGENICITY	MUTAGENICITY
Proprietary	Acrylic polymer emulsion	NE	NE	NE	NE
21645-51-2	Alumina trihydrate	UN	UN	UN	UN
7732-18-5	Water	No	No	No	No
1317-65-3	Calcium Carbonate	UN	UN	UN	UN

This product contains no material in sufficient quantity to qualify as a health hazard or toxicological hazard.

SECTION 12 – ECOLOGICAL INFORMATION

BIODEGRADATION: NA.
BIOACCUMULATION: NA
AQUATIC TOXICITY: NA

OTHER INFORMATION: This material does not constitute a negative ecological or environmental problem as a dry product. As a liquid, this material is a low toxicity contaminant to bodies of water with which it has contact. Allow empty containers to dry.

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Liquid material may be mixed with absorbent medium such as cat litter or calcium carbonate or saw dust to congeal and dry emulsion before disposal. Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations. EPA Hazardous Waste Number: D001 (Ignitability).

SECTION 14 – TRANSPORT INFORMATION

SPECIAL SHIPPING INFORMATION: Latex paints are not considered a hazardous material and are not subject to a hazard classification for shipping or transportation.

DOT SHIPPING CLASS: Not Regulated
TDG Not Regulated
IATA Not Regulated

SECTION 15 – REGULATORY INFORMATION

US Regulatory Information

OSHA 29 CFR 1910-1200 None
TSCA All components of this product are listed on TSCA Inventory

SARA Title III:

 SARA SECTION 302: None
 SARA SECTION 304: NA
 SARA (311,312) HAZARD CLASS: Non-Hazardous
 SARA (313) CHEMICALS: None

CERCLA: None
RCRA: Refer to section 13
CPSC CLASSIFICATION: NA

HMIS: FLAMMABILITY: 0 REACTIVITY: 0 HEALTH: 1

NFPA: FLAMMABILITY: 0 REACTIVITY: 0 HEALTH: 1

WHMIS CLASSIFICATION: Non-Hazardous

CALIFORNIA PROPOSITION 65:

- ☐ A. This product contains a chemical known to the State of CA to cause birth defects or other reproductive harm.
- ☐ B. This product contains a chemical known to the State of CA to cause cancer.
- ☐ C. This product contains a chemical known to the State of CA to cause cancer and birth defects or other reproductive harm.

SECTION 16 – OTHER INFORMATION

Prepared in accordance with 29 CFR 1910.1200

This Product has been classified in accordance with the hazard criteria of the Controlled Products

NA = not applicable

NE = not established

UN = unavailable

CL = Ceiling Limit

NEGL = Negligible

PROP. = Proprietary

"THE DATA INCLUDED HEREIN ARE PRESENTED IN ACCORDANCE WITH THE VARIOUS ENVIRONMENT, HEALTH AND SAFETY REGULATIONS. IT IS THE RESPONSIBILITY OF A RECIPIENT OF THIS DATA TO REMAIN CURRENTLY INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS OWN PROGRAM AND TO COMPLY WITH ALL NATIONAL, FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS APPLICABLE TO SAFETY, OCCUPATIONAL HEALTH, RIGHT-TO-KNOW AND ENVIRONMENTAL PROTECTION."

WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE, PITTSBURGH CORNING MAKES NO WARRANTY WITH RESPECT THERETO, AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

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SAFETY DATA SHEET, revised Dec 1, 2014

A-300CL PVC Adhesive Clear**1. PRODUCT AND COMPANY INFORMATION**

Trade name PVC Adhesive Clear
Product codes ZGA-300CL, A300CL
Chemical family Resin solution
Intended use Adhesive for welding of PVC
Company Colorado Paint (a Swarco Company)
4747 Holly Street
Denver, CO 80216; U. S. A.
Telephone +1 303-388-9265
Web site www.swarco.com/americas
Emergency (Chemtrec; 24 h) 1-800-424-9300 (U. S. A. and Canada)

2. HAZARD IDENTIFICATION**Emergency Overview****OSHA Hazards**

Flammable Liquid, Target Organ Effect, Irritant

Target Organs

Central nervous system, Liver, Kidney.

GHS Classification

Flammable liquids (Category 2)

Acute toxicity, Oral (Category 4)

Acute toxicity, Inhalation (Category 5)

Skin irritation (Category 2)

Eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictograms:

Signal word: Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H302 + H333 Harmful if swallowed or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 + H336 May cause respiratory irritation, dizziness, and drowsiness.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

A-300CL PVC Adhesive Clear**HMIS and NFPA Classification:**

	HMIS	NFPA Hazard
Health	2	2
Chronic health hazard	*	--
Flammability	3	3
Reactivity / Physical hazard	--	0
Physical hazard	3	--

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

3. COMPOSITION

Name	Synonym	CAS	EINECS	Index	Concentration
Tetrahydrofuran	THF, Oxolane	109-99-9	203-726-8	603-025-00-0	40-55%
Poly(vinyl chloride) resin	Modified PVC polymer	Proprietary mixture	n/a	n/a	20-35%
Methyl Ethyl Ketone	Butanone-2	78-93-3	201-159-0	606-021-00-7	1-5%

4. FIRST AID MEASURES**General advice**

Consult a physician. Show this Material Safety Data Sheet to the attending doctor.

If inhaled

Move person to fresh air. If not breathing, give artificial respiration. Obtain proper medical attention.

If on skin

Wash off with soap and water. Consult a physician if needed.

In case of an eye contact

Rinse thoroughly with plenty of water for at least 15 minutes. Seek medical attention.

If swallowed

Do not induce vomiting. Rinse mouth with water. Seek immediate medical attention.

Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

5. FIRE FIGHTING MEASURES**Suitable extinguishing media**

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide.

For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire fighters

Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NO_x), chlorinated compounds.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate unnecessary personnel to safe areas. Beware of vapors accumulating to form explosive concentrations.

SAFETY DATA SHEET, revised Dec 1, 2014

A-300CL PVC Adhesive Clear**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with electrically protected equipment and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition – NO SMOKING. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature is 10-25 °C.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**Occupational exposure limits**

Name	CAS	OSHA TLV ⁽¹⁾	ACGIH TLV ⁽²⁾	NIOSH PEL ⁽³⁾	OSHA STEL ⁽⁴⁾	EU ⁽⁵⁾
Methyl ethyl ketone	78-93-3	590	590	590	885	600
Upper Respiratory Tract irritation. Central Nervous System and Peripheral Nervous System impairment. Substance for which there is a Biological Exposure Index.						
Poly(Vinyl chloride) resin	Proprietary mixture	n/a	n/a	n/a	n/a	n/a
No occupational exposure limits have been established. Per manufacturer, the resin is 'not hazardous and toxic chemical'.						
Tetrahydrofuran	109-99-9	590	147	735	735	150
Can be absorbed through skin. There are concerns that dermal absorption will lead to systemic toxicity. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhoea. Central Nervous System impairment. Upper Respiratory Tract irritation. Kidney damage. Confirmed animal carcinogen with unknown relevance to humans. The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histological type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.						

(1) Occupational Safety and Health Administration (OSHA); Threshold Limit Value (8-hour time-weighted average) pursuant to (a) for general industry: 29 CFR 1910.1000 Table Z-1, (b) for construction industry: 29 CFR 1926.55 Appendix A, and (c) for maritime industry: 29 CFR 1915.1000 Table Z. (2) American Conference of Governmental Industrial Hygienists; Threshold Limit Value. (3) National Institute for Occupational Safety and Health; Recommended Exposure Limit. (4) OSHA Short Term Exposure Limit (STEL). (5) European Union exposure limit per Directive 98/24/EC, as amended or UK EH40 Occupational Exposure Limit.

Ventilation

Use only where adequate ventilation can be maintained. Use explosion-proof exhaust fans when the product is used in enclosed areas.

Personal protective equipment**Respiratory protection**

A full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges are recommended as a backup to engineering controls.

Hand protection

Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good work hygiene practices. The selected protective gloves have to satisfy the specifications of the standard EN 374.

A-300CL PVC Adhesive Clear**Eye protection**

Safety glasses with side shields are required. Face shield are recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Wear impervious, flame retardant antistatic protective clothing.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash your hands thoroughly. Never intentionally inhale the contents. Use only for the intended purpose.

9. PHYSICAL PROPERTIES**Appearance**

Physical state Liquid
Color Clear, hazy
Odor Strong, irritating, characteristic of tetrahydrofuran

Safety data

Boiling point >60 °C (solvent data)
Freezing point Not available
Flash point >-17 °C (solvent data)
Upper explosion limit 1.8 vol% (solvent data)
Lower explosion limit 11.8 vol% (solvent data)
Solubility in water Solvent are soluble
Vapor pressure 213.3 hPa at 25 °C (solvent data)
Density 0.8-1.1 g·cm⁻³ at 25 °C
Viscosity 70-95 KU (Stormer, at 25 °C)
pH Not applicable

10. STABILITY AND REACTIVITY DATA**Chemical stability**

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, and sparks. Extremes of temperature and direct sunlight.

Materials to avoid

Bases, strong acids, oxidizing agents, reducing agents, phosphorous oxychloride.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NO_x).

11. TOXICOLOGICAL DATA**Acute toxicity**

Name	NIOSH IDLH (mg/m ³)	Oral LD ₅₀ (mg/kg) rat	Inhalation LC ₅₀ (rat)	Dermal LD ₅₀ (mg/kg) rabbit
Methyl ethyl ketone	5900	2737	32000 (mouse) 38000 (mammal)	6480 (rabbit)
Poly(vinyl chloride) resin	n/a	n/a	n/a	n/a
Tetrahydrofuran	5877	1650 (rat) 2300 (guinea pig)	61000 (3h) Drowsiness. Lungs Thorax or Respiration	>2000 (rat)

Prolonged Exposure

Name	Skin corrosion / irritation	Serious eye damage / irritation	Respiratory or skin sensitization
Methyl ethyl ketone	Rabbit – skin irritation (24h)	No data available	No data available
Poly(vinyl chloride) resin	No data available	No data available	No data available

A-300CL PVC Adhesive Clear

Tetrahydrofuran	Rabbit – mild skin irritation (Draize test)	Rabbit – risk of serious damage to eyes (Draize test)	Mouse – did not cause sensitization on laboratory animals

Germ cell mutagenicity

Tetrahydrofuran	In vivo tests did not show mutagenic effects
All other ingredients	No data available

Carcinogenicity

Methyl ethyl ketone	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Poly(vinyl chloride) resin	Mouse – Implant: Tumorigenic. Equivocal tumorigenic agent by RTECS criteria. Tumors at site or application. This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.
Tetrahydrofuran	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC

Reproductive toxicity

Tetrahydrofuran	No toxicity to reproduction.
All other ingredients	No data available.

Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

Methyl ethyl ketone	May cause drowsiness or dizziness.
Tetrahydrofuran	Inhalation - May cause respiratory irritation. May cause drowsiness or dizziness. Nervous system
All other ingredients	No data available.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No data available.

Aspiration hazard

No data available

Potential health effects**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.**Ingestion:** May be harmful if swallowed.**Skin:** May be harmful if absorbed through skin. Causes skin irritation.**Eyes:** Causes eye irritation.**Signs and Symptoms of Exposure**To the best of our knowledge, the chemical, physical, and toxicological properties of this product (a mixture) have not been thoroughly investigated.

The following symptoms have been reported for overexposure to the ingredients: Central Nervous System depression, Cough, chest pain, difficulty in breathing, Gastrointestinal disturbance, narcosis.

Synergistic effects

No data available.

12. ECOLOGICAL DATA**Toxicity**

Name	Fish LC ₅₀ (mg/dm ³ /96 h)	Daphnia and other marine invertebrates EC ₅₀ (mg/dm ³ /48 h)	Bacteria LC ₅₀ (mg/dm ³)
Methyl ethyl ketone	Mortality NOEC: 400 Cyprinodon variegatus (sheepshead minnow) 3,130 Pimephales promelas	LC ₅₀ >520 (mg/dm ³ /48 h) EC ₅₀ 7,060 (mg/dm ³ /24 h)	n/a
Poly(vinyl chloride) resin	No data available	No data available	No data available

A-300CL PVC Adhesive Clear

Tetrahydrofuran	2,160 Pimephales promelas (fathead minnow)	n/a	Growth inhibition NOEC: 3,700 mg/dm ³ (Algae)

Persistence and degradability

Tetrahydrofuran	Expected to be biodegradable
All other ingredients	No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

PBT and vPyB assessment

No data available.

Other adverse effects

Data for the entire preparation (a mixture) is not available.

13. DISPOSAL CONSIDERATIONS**Unused or spoiled product**

The user must determine if it meets applicable definitions of a hazardous waste per 40 CFR 261 and other regulations. Dispose according to the environmental laws. Contact a licensed professional waste disposal service to arrange for appropriate removal. Burn the material in a chemical incinerator equipped with an afterburner and scrubber.

Container

Empty packaging may contain product residue and should not be reused. Dispose as of unused product.

14. TRANSPORTATION INFORMATION

Information provided for guidance purpose only and not meant to be inclusive. Packaging suitability and compliance with regulations must be reviewed prior to shipment.

Quantities smaller than 2.0 litres may be shipped as CONSUMER COMMODITY (per 49 CFR 171.8). Bulk quantities are regulated as follows:

DOT (U. S. A.); IMDG; IATA

UN1133; Class 2; Packing Group II

Proper shipping name

Adhesive, containing a flammable liquid.

Other information

Not considered marine pollutant or poison inhalation hazard.

DOT reportable ingredients:

Proper Shipping Name	Amount	Reportable quantity
Methyl ethyl ketone	10-20%	2,267 kg (5,000 lb)
Tetrahydrofuran	40-55%	454 kg (1,000lb)

15. REGULATORY INFORMATION**OSHA Hazards**

Flammable Liquid, Target Organ Effect, Harmful by ingestion, Irritant, Carcinogen.

TSCA and DSL

Listed or exempt

SARA 302

To the best of our knowledge, no chemicals in this product are subject to the reporting requirements of SARA Title III, Section 302 (40 CFR 355.30)

A-300CL PVC Adhesive Clear

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard.

SARA 313

To the best of our knowledge, no chemicals in this product are subject to the reporting requirements of SARA Title III, Section 313

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Volatile Organic Compounds

Below 700 g/l

16. ADDITIONAL INFORMATION

This safety data sheet complies with 29 CFR 1910.1200 and with EC 1907/2006, as amended. Paper copies of this publication may be made by the users for internal purposes only.

Last modified: Dec 1, 2014.

Disclaimer

All information and data appearing on this Material Safety Data Sheet are provided in good faith and are believed to be reliable and accurate to the best of our knowledge at the date of publication. Although certain hazards are listed herein, there is no guarantee that these are only risks. None of the provided information is to be considered a warranty or quality specification or all-inclusive and is given only as guidance. It is the user's responsibility to determine the safety of use, handling, storage, transportation, disposal, and suitability for the intended utilisation of the product. Unless otherwise specified, the data provided herein is valid only for the described material and may be not applicable for the product used in combination with any other materials or processes. Colorado Paint Company / Swarco shall not be liable for any damage resulting from handling, contact, use, or inability to use of this product. No guarantee, expressed or implied, is made by Colorado Paint Company / Swarco and the user assumes all risk and responsibility.

SAFETY DATA SHEET, revised Dec 1, 2014

A-300WH PVC Adhesive White**1. PRODUCT AND COMPANY INFORMATION**

Trade name	PVC Adhesive White
Product codes	ZGA-300WH, A300WH
Chemical family	Pigmented resin solution
Intended use	Adhesive for welding of PVC
Company	Colorado Paint (a Swarco Company) 4747 Holly Street Denver, CO 80216; U. S. A.
Telephone	+1 303-388-9265
Web site	www.swarco.com/americas
Emergency (Chemtrec; 24 h)	1-800-424-9300 (U. S. A. and Canada)

2. HAZARD IDENTIFICATION**Emergency Overview****OSHA Hazards**

Flammable Liquid, Target Organ Effect, Irritant.

Target Organs

Central nervous system, Liver, Kidney.

GHS Classification

Flammable liquids (Category 2)

Acute toxicity, Oral (Category 4)

Acute toxicity, Inhalation (Category 5)

Skin irritation (Category 2)

Eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictograms:

Signal word: Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H302 + H333 Harmful if swallowed or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 + H336 May cause respiratory irritation, dizziness, and drowsiness.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

A-300WH PVC Adhesive White**HMIS and NFPA Classification:**

	HMIS	NFPA Hazard
Health	2	2
Chronic health hazard	*	--
Flammability	3	3
Reactivity / Physical hazard	--	0
Physical hazard	3	--

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

3. COMPOSITION

Name	Synonym	CAS	EINECS	Index	Concentration
Tetrahydrofuran	THF, Oxolane	109-99-9	203-726-8	603-025-00-0	50-70%
Poly(vinyl chloride) resin	Modified PVC polymer	Proprietary mixture	n/a	n/a	20-35%
Methyl Ethyl Ketone	Butanone-2	78-93-3	201-159-0	606-021-00-7	10-20%
Titanium Dioxide	Titanium (IV) oxide	13466-67-7	236-675-5	n/a	2-3%

4. FIRST AID MEASURES**General advice**

Consult a physician. Show this Material Safety Data Sheet to the attending doctor.

If inhaled

Move person to fresh air. If not breathing, give artificial respiration. Obtain proper medical attention.

If on skin

Wash off with soap and water. Consult a physician if needed.

In case of an eye contact

Rinse thoroughly with plenty of water for at least 15 minutes. Seek medical attention.

If swallowed

Do not induce vomiting. Rinse mouth with water. Seek immediate medical attention.

Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

5. FIRE FIGHTING MEASURES**Suitable extinguishing media**

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide.

For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire fighters

Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NO_x), chlorinated compounds.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate unnecessary personnel to safe areas. Beware of vapors accumulating to form explosive concentrations.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with electrically protected equipment and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition – NO SMOKING. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature is 10-25 °C.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational exposure limits

Name	CAS	OSHA TLV ⁽¹⁾	ACGIH TLV ⁽²⁾	NIOSH PEL ⁽³⁾	OSHA STEL ⁽⁴⁾	EU ⁽⁵⁾
Methyl ethyl ketone	78-93-3	590	590	590	885	600
Upper Respiratory Tract irritation. Central Nervous System and Peripheral Nervous System impairment. Substance for which there is a Biological Exposure Index.						
Poly(Vinyl chloride) resin	Proprietary mixture	n/a	n/a	n/a	n/a	n/a
No occupational exposure limits have been established. Per manufacturer, the resin is 'not hazardous and toxic chemical'.						
Tetrahydrofuran	109-99-9	590	147	735	735	150
Can be absorbed through skin. There are concerns that dermal absorption will lead to systemic toxicity. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhoea. Central Nervous System impairment. Upper Respiratory Tract irritation. Kidney damage. Confirmed animal carcinogen with unknown relevance to humans. The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histological type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.						
Titanium dioxide	13463-67-7	15	10	Fine particles: 2.4 Ultrafine particles: 0.3	n/a	4
The established limits are for respirable dust (total dust maximum is 15 mg/m ³) only and are meaningless for the paint product as delivered, but apply while sanding or abrading of dried coating. Lower Respiratory Tract irritation. Slight lung fibrosis (carcinogenic in rats). Health Effect: Nuisance particulate, accumulation in lungs. Not classifiable as a human carcinogen. No increase in risk for lung cancer (or any other specific cause of death) among titanium dioxide manufacturing workers.						

(1) Occupational Safety and Health Administration (OSHA); Threshold Limit Value (8-hour time-weighted average) pursuant to (a) for general industry: 29 CFR 1910.1000 Table Z-1, (b) for construction industry: 29 CFR 1926.55 Appendix A, and (c) for maritime industry: 29 CFR 1915.1000 Table Z. (2) American Conference of Governmental Industrial Hygienists; Threshold Limit Value. (3) National Institute for Occupational Safety and Health; Recommended Exposure Limit. (4) OSHA Short Term Exposure Limit (STEL). (5) European Union exposure limit per Directive 98/24/EC, as amended or UK EH40 Occupational Exposure Limit.

Ventilation

Use only where adequate ventilation can be maintained. Use explosion-proof exhaust fans when the product is used in enclosed areas.

Personal protective equipment**Respiratory protection**

A full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges are recommended as a backup to engineering controls.

Hand protection

Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good work hygiene practices. The selected protective gloves have to satisfy the specifications of the standard EN 374.

Eye protection

Safety glasses with side shields are required. Face shield are recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Wear impervious, flame retardant antistatic protective clothing.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash your hands thoroughly. Never intentionally inhale the contents. Use only for the intended purpose.

9. PHYSICAL PROPERTIES**Appearance**

Physical state Liquid
Color White
Odor Strong, irritating, characteristic of tetrahydrofuran

Safety data

Boiling point >60 °C (solvent data)
Freezing point Not available
Flash point >-13 °C (solvent data)
Upper explosion limit 3 vol% (solvent data)
Lower explosion limit 16 vol% (solvent data)
Solubility in water Solvents are soluble
Vapor pressure 213.3 hPa at 25 °C (solvent data)
Density 0.8-1.1 g·cm⁻³ at 25 °C
Viscosity 70-95 KU (Stormer, at 25 °C)
pH Not applicable

10. STABILITY AND REACTIVITY DATA**Chemical stability**

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, and sparks. Extremes of temperature and direct sunlight.

Materials to avoid

Bases, strong acids, oxidizing agents, reducing agents, phosphorous oxychloride.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NO_x).

11. TOXICOLOGICAL DATA**Acute toxicity**

Name	NIOSH IDLH (mg/m ³)	Oral LD ₅₀ (mg/kg) rat	Inhalation LC ₅₀ (rat)	Dermal LD ₅₀ (mg/kg) rabbit
Methyl ethyl ketone	5900	2737	32000 (mouse) 38000 (mammal)	6480 (rabbit)
Poly(vinyl chloride) resin	n/a	n/a	n/a	n/a
Tetrahydrofuran	5877	1650 (rat) 2300 (guinea pig)	61000 (3h) Drowsiness. Lungs Thorax or Respiration	>2000 (rat)
Titanium dioxide	5,000	>10,000	n/a	>10,000

Prolonged Exposure

Name	Skin corrosion / irritation	Serious eye damage / irritation	Respiratory or skin sensitization
Methyl ethyl ketone	Rabbit – skin irritation (24h)	No data available	No data available
Poly(vinyl chloride) resin	No data available	No data available	No data available
Tetrahydrofuran	Rabbit – mild skin irritation (Draize test)	Rabbit – risk of serious damage to eyes (Draize test)	Mouse – did not cause sensitization on laboratory animals
Titanium dioxide	Human: Mild skin irritation (3h)	Rabbit: No eye irritation	Will not occur

Germ cell mutagenicity

Tetrahydrofuran	In vivo tests did not show mutagenic effects
Titanium dioxide	Genotoxicity in vitro – hamster – ovary: Micronucleus test. Genotoxicity in vitro – hamster – lungs: DNA inhibition. Genotoxicity in vitro – hamster – ovary: Sister Chromatoid exchange. Genotoxicity in vivo – mouse – intraperitoneal: Micronucleus test.
All other ingredients	No data available

Carcinogenicity

Methyl ethyl ketone	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Poly(vinyl chloride) resin	Mouse – Implant: Tumorigenic. Equivocal tumorigenic agent by RTECS criteria. Tumors at site or application. This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.
Tetrahydrofuran	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC
Titanium dioxide	Rat – inhalation: Tumorigenic: Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration: Tumors. Rat – intramuscular: Tumorigenic: Neoplastic by RTECS criteria. Blood; Lymphomas including Hodgkin's disease. Tumors at site or application. IARC: 2B - Group 2B: Possibly carcinogenic to humans (Titanium dioxide).

Reproductive toxicity

Tetrahydrofuran	No toxicity to reproduction.
All other ingredients	No data available.

Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

Methyl ethyl ketone	May cause drowsiness or dizziness.
Tetrahydrofuran	Inhalation - May cause respiratory irritation. May cause drowsiness or dizziness. Nervous system
All other ingredients	No data available.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No data available.

A-300WH PVC Adhesive White**Aspiration hazard**

No data available

Potential health effects**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.**Ingestion:** May be harmful if swallowed.**Skin:** May be harmful if absorbed through skin. Causes skin irritation.**Eyes:** Causes eye irritation.**Signs and Symptoms of Exposure**To the best of our knowledge, the chemical, physical, and toxicological properties of this product (a mixture) have not been thoroughly investigated.

The following symptoms have been reported for overexposure to the ingredients: Central Nervous System depression, Cough, chest pain, difficulty in breathing, Gastrointestinal disturbance, narcosis.

Synergistic effects

No data available.

12. ECOLOGICAL DATA**Toxicity**

Name	Fish LC ₅₀ (mg/dm ³ /96 h)	Daphnia and other marine invertebrates EC ₅₀ (mg/dm ³ /48 h)	Bacteria LC ₅₀ (mg/dm ³)
Methyl ethyl ketone	Mortality NOEC: 400 Cyprinodon variegatus (sheepshead minnow) 3,130 Pimephales promelas	LC ₅₀ >520 (mg/dm ³ /48 h) EC ₅₀ 7,060 (mg/dm ³ /24 h)	n/a
Poly(vinyl chloride) resin	No data available	No data available	No data available
Tetrahydrofuran	2,160 Pimephales promelas (fathead minnow)	n/a	Growth inhibition NOEC: 3,700 mg/dm ³ (Algae)
Titanium dioxide	>1,000 (other fish)	1,000	No data available.

Persistence and degradability

Tetrahydrofuran Expected to be biodegradable

All other ingredients No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

PBT and vPvB assessment

No data available.

Other adverse effects

Data for the entire preparation (a mixture) is not available.

13. DISPOSAL CONSIDERATIONS**Unused or spoiled product**

The user must determine if it meets applicable definitions of a hazardous waste per 40 CFR 261 and other regulations. Dispose according to the environmental laws. Contact a licensed professional waste disposal service to arrange for appropriate removal. Burn the material in a chemical incinerator equipped with an afterburner and scrubber.

Container

Empty packaging may contain product residue and should not be reused. Dispose as of unused product.

A-300WH PVC Adhesive White**14. TRANSPORTATION INFORMATION**

Information provided for guidance purpose only and not meant to be inclusive. Packaging suitability and compliance with regulations must be reviewed prior to shipment.

Quantities smaller than 2.0 litres may be shipped as CONSUMER COMMODITY (per 49 CFR 171.8). Bulk quantities are regulated as follows:

DOT (U. S. A.); IMDG; IATA

UN1133; Class 2; Packing Group II

Proper shipping name

Adhesive, containing a flammable liquid.

Other information

Not considered marine pollutant or poison inhalation hazard.

DOT reportable ingredients:

Proper Shipping Name	Amount	Reportable quantity
Methyl ethyl ketone	10-20%	2,267 kg (5,000 lb)
Tetrahydrofuran	40-55%	454 kg (1,000lb)

15. REGULATORY INFORMATION**OSHA Hazards**

Flammable Liquid, Target Organ Effect, Harmful by ingestion, Irritant, Carcinogen.

TSCA and DSL

Listed or exempt

SARA 302

To the best of our knowledge, no chemicals in this product are subject to the reporting requirements of SARA Title III, Section 302 (40 CFR 355.30)

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard.

SARA 313

To the best of our knowledge, no chemicals in this product are subject to the reporting requirements of SARA Title III, Section 313

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Volatile Organic Compounds

Below 700 g/l

16. ADDITIONAL INFORMATION

This safety data sheet complies with 29 CFR 1910.1200 and with EC 1907/2006, as amended. Paper copies of this publication may be made by the users for internal purposes only.

Last modified: Dec 1, 2014.

Disclaimer

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SAFETY DATA SHEET

RG-2400 LT®

Section 1. Identification

GHS product identifier : RG-2400 LT®
Other means of identification : Not available.
Product type : Creamy gel like.

Identified uses

Coating for the prevention of corrosion.

Supplier's details : Polyguard Products Inc.
3801 South Interstate 45
Ennis, TX 75119
Tel: (800)541-4994

Emergency telephone number (with hours of operation) : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887
(24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN SENSITIZATION - Category 1

Titanium oxide is not in its respirable form and is a constituent of the mixture.

GHS label elements

Hazard pictograms :



Signal word : Warning
Hazard statements : May cause an allergic skin reaction.

Precautionary statements

Prevention : Wear protective gloves. Avoid breathing vapor. Contaminated work clothing should not be allowed out of the workplace.
Response : IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.
Storage : Not applicable.
Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified : None known.



Section 3. Composition/information on ingredients

Substance/mixture : Mixture
 Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.
 Product code : Not available.

Ingredient name	%	CAS number
D-Limonene	0.1 - 1	5989-27-5
2,6-di-tert-Butyl-p-cresol	0.1 - 1	128-37-0
Titanium dioxide	0.1 - 1	13463-67-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Maintain an open airway. Get medical attention if symptoms occur.
- Skin contact** : Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
 irritation
 redness
- Ingestion** : No known significant effects or critical hazards.



Section 4. First aid measures

Location of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : No specific fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
metal oxide/oxides

- Special protective actions for fire-fighters** : No special measures are required.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.



Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
2,6-di-tert-Butyl-p-cresol	OSHA PEL 1989 (United States, 3/1989). TWA: 10 mg/m ³ 8 hours. NIOSH REL (United States, 10/2013). TWA: 10 mg/m ³ 10 hours. ACGIH TLV (United States, 4/2014). TWA: 2 mg/m ³ 8 hours. Form: Inhalable fraction and vapor
Titanium dioxide	OSHA PEL (United States, 2/2013). TWA: 15 mg/m ³ 8 hours. Form: Total dust ACGIH TLV (United States, 4/2014). TWA: 10 mg/m ³ 8 hours.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.



Section 8. Exposure controls/personal protection

Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Under normal use a respirator is not required.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid. [Creamy gel.]
- Color** : Bluish.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Open cup: 179.44°C (355°F) [Cleveland.]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 0.95 to 1.15
- Solubility** : Insoluble in water.
- VOC = Volatile Organic Compound** : 0 g/L
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : 434 to 437°C (813.2 to 818.6°F)
- Decomposition temperature** : Not available.
- Viscosity** : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.



Section 10. Stability and reactivity

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
D-Limonene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	4400 mg/kg	-
2,6-di-tert-Butyl-p-cresol	LD50 Oral	Rat	890 mg/kg	-

Irritation/Corrosion

Product/Ingredient name	Result	Species	Score	Exposure	Observation
D-Limonene	Skin - Mild irritant	Rabbit	-	24 hours 10%	-
2,6-di-tert-Butyl-p-cresol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Skin - Mild irritant	Human	-	48 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	48 hours 500 mg	-
Titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 µg Intermittent	-

Sensitization

There is no data available.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH	EPA	NIOSH
Silicic acid, calcium salt	-	-	-	A4	-	None.
Titanium dioxide	-	2B	-	A4	-	+

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Ingestion.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.



Section 11. Toxicological information

Inhalation	: No known significant effects or critical hazards.
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	: No known significant effects or critical hazards.
Potential delayed effects	: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects	: No known significant effects or critical hazards.
Potential delayed effects	: No known significant effects or critical hazards.

Potential chronic health effects

General	: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
D-Limonene	Acute EC50 421 µg/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute EC50 688 µg/L Fresh water	Fish - Pimephales promelas	96 hours
2,6-di-tert-Butyl-p-cresol	Acute EC50 1440 µg/L Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
Titanium dioxide	Acute EC50 5.83 mg/L Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute LC50 3 mg/L Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 5.5 ppm Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 1000 mg/L Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 0.984 mg/L Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential



Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
D-Limonene	4.38	1022	high
2,6-di-tert-Butyl-p-cresol	5.1	330 to 1800	high
Titanium dioxide	-	352	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

AERG : Not applicable

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.



Section 14. Transport information

Transport in bulk according : Not available.

Annex II of MARPOL
78 and the IBC Code

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Air Act Section 112 : Not listed

(b) Hazardous Air
Pollutants (HAPs)

Clean Air Act Section 602 : Not listed

Class I Substances

Clean Air Act Section 602 : Not listed

Class II Substances

DEA List I Chemicals : Not listed

(Precursor Chemicals)

DEA List II Chemicals : Not listed

(Essential Chemicals)

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
D-Limonene	0.1 - 1	Yes.	No.	No.	Yes.	No.
Titanium dioxide	0.1 - 1	No.	No.	No.	No.	Yes.

State regulations

Massachusetts

: The following components are listed: Distillates (petroleum), hydrotreated light paraffinic; Distillates (petroleum), solvent-dewaxed light paraffinic; Silicic acid, calcium salt

New York

: None of the components are listed.

New Jersey

: The following components are listed: Distillates (petroleum), hydrotreated heavy paraffinic; Distillates (petroleum), solvent-dewaxed heavy paraffinic; Distillates (petroleum), hydrotreated light paraffinic; Distillates (petroleum), solvent-dewaxed light paraffinic; Silicic acid, calcium salt; Titanium dioxide

Pennsylvania

: The following components are listed: Silicic acid, calcium salt; Titanium dioxide

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Titanium dioxide	Yes.	No.	No.	No.



Section 16. Other information

Health : 1 Flammability : 0 Physical hazards : 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 1 Flammability : 0 Instability : 0

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue mm/dd/yyyy : 11/15/2014
 Date of previous issue : 01/15/2012
 Version : 5
 Revised Section(s) : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
 Prepared by : KMK Regulatory Services Inc.
 Key to abbreviations : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.





SAFETY DATA SHEET

Print Date: 5/31/2015

PRODUCT NAME: SIL-BOND RTV 4500
COLOR: ALUMINUM

REVISION DATE: May 31st 2015

1. PRODUCT AND COMPANY IDENTIFICATION

Commercial Product Name: SIL-BOND RTV 4500

Product Classification: Silicone Sealant

Manufacturer:

Silco Inc.

7635 St. Clair Avenue

Mentor, OH 44060

PHONE: 440-975-8886 FAX: 440-975-8887

General Description: Silicone elastomer

Physical Form: Paste

Color: Aluminum

Odor: Acetic acid odor

NFPA PROFILE: Health - 1 Flammability - 1 Instability/Reactivity - 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION

Physical Hazards: Not classified

Health Hazards: Reproductive toxicity (fertility) Category 2

Environmental Hazards: Not classified

OSHA Defined Hazards: Not classified

- Hazards not stated here are "Not Classified", "Not Applicable" or "Classification not possible".

GHS Label Elements

Signal Word:

Warning



Hazard Statement:

Precautionary

Statement:

Prevention:

Suspected of damaging fertility. May cause eye/lung/skin irritation. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves / protective clothing / eye protection / face protection. Wash well after handling. Contaminated work clothing should not be allowed out of work place.

Response:	SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention / advice. Get medical attention / advice if you feel unwell. EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritant persists get medical attention / advice. If exposed or concerned: get medical attention or advice. Take off contaminated clothing and wash it before reuse.
Storage:	Store locked up.
Disposal:	Disposal of contents / container in accordance with local / regional / state / federal and international regulations.
Hazard(S) not Otherwise classified (HNOC):	None known.
Supplemental Information:	None known.
Substance(s) formed under the conditions of use:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide.
HMIS (Ratings):	Health: 1 Flammability: 1 Physical hazard: 0

3. COMPOSITION/ INGREDIENTS

Mixtures

Hazardous Ingredients

Chemical Name	CAS Number	%
Ethyltriacetoxysilane	17689-77-9	1 – 5
Methylacetoxysilane	4253-34-3	1 – 5
Titanium oxide	13463-67-7	< 1
Distillates (petroleum), hydrotreated middle	64742-46-7	1 – 7
Octamethylcyclotetrasiloxane (impurity)	556-67-2	< 1

4. FIRST AID MEASURES

Inhalation:	Remove to fresh air. Call a physician if symptoms develop or persist.
Skin Contact:	Wash off with soap and plenty of water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation or rash occurs: get medical attention / advice. Take off contaminated clothing and wash before use.
Eyes Contact:	Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation developed or persists.
Ingestion:	Wash out mouth. Get medical attention immediately.
Most Important symptoms / effects, acute and delayed:	Direct contact with eyes may cause temporary irritation.
Indication of immediate Medical attention and Special treatment Needed:	Treat Symptomatically.
General Information:	If exposed or concerned: Get medical advice / attention. Ensure that medical personnel are aware materials involved and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂)
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	By heating and fire, harmful vapors / gases may be formed.
Specific protective equipment and precautions for firefighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots and self-contained breathing apparatus.
Fire Fighting equipment / Instructions:	Move containers from fire area if you can do so without risk.
General fire hazards:	No unusual fire or explosion hazards noted.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch or walk through spilled material. Ensure adequate ventilation. Wear appropriate personal protective equipment.

Methods and materials for containment and cleaning up:

Eliminate sources of ignition.

Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for reuse.

Environmental precautions:

Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precaution for safe handling:

Provide adequate ventilation. Use care in handling/storage. Obtain special instructions before use. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Pregnant and breastfeeding women must not handle this product. Do not breathe mist or vapor. Avoid contact with eyes. Avoid contact with skin. Avoid long term exposure.

Conditions for safe storage, including any incompatibilities

Stored locked up. Keep container tightly closed. Keep out of reach of children. Store in a cool dry place out of direct sunlight. Keep in original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	CAS #	Type	Value
Titanium oxide	13463-67-7	PEL	15 mg/m3
Decomposition			
Distillates (petroleum) hydrotreated middle	64742-46-7	TWA (Mist)	5 mg/m3
Acetic acid	64-19-7	PEL	25 mg/m3 10 ppm

US. ACGIH Threshold Limit Values			
Components			
Titanium dioxide	13463-67-7	TWA	10 mg/m3
Decomposition			
Acetic acid	64-19-7	STEL	15 ppm
		TWA	10 ppm
US. NIOSH: Pocket Guide to Chemical Hazards			
Decomposition			
Acetic acid	64-19-7	STEL	37 mg/m3
			15 ppm
		TWA	25 mg/m3
			10 ppm
Distillates (petroleum)	64742-46-7	TWA (Mist)	5mg/m3
hydrotreated middle		ST (Mist)	10mg/m3
Biological limit values:	No biological exposure limits for the ingredient(s).		
Appropriate engineering controls:	Provide adequate general and local exhaust. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and or / door open for at least 24 hours after applications.		
Individual protection measures such as personal protective equipment.			
Eye / Face protection:	Tightly sealed safety glasses according to EN 166.		
Skin / Hand protection:	Wear protective gloves.		
Other:	Wear suitable protective clothing.		
Respiratory protection:	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.		
Thermal hazards:	Wear appropriate thermal protective clothing, when necessary.		
General Hygiene Considerations:	Avoid contact with eyes. Avoid contact with skin. When using, do not eat, drink or smoke. Keep away from food or drink. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the work place. Handle in accordance with good industrial hygiene and safety practice.		

9. PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance

Form:	Paste
Color:	Aluminum
Odor:	Acetic acid odor

Odor Threshold:	Not available
pH:	Not available
Melting point / freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash Point:	141.8 °F (> 96 °C) Closed cup
Evaporative rate:	< 1 (Butyl Acetate = 1)
Flammability (solid, gas):	Not applicable
Upper / Lower flammability or explosive limits:	
Flammability limit – lower (%):	No data
Flammability limit – upper (%):	No data
Explosive limit – Lower (%):	Not available
Explosive limit – Upper (%):	Not available
Vapor pressure:	Negligible (25 °C)
Vapor density:	> 1 (air=1)
Relative density:	1.04 (25 °C)
Solubility (water):	Not soluble
VOC Content:	30 grams per liter
Partition coefficient: (n-octanol / water)	Not applicable
Auto-ignition temperature:	No data
Decomposition temperature:	Not available
Viscosity:	Not applicable
Molecular weight:	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	No hazardous reaction known under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous Reactions	Hazardous polymerization does not occur.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Water and moisture.
Hazardous decomposition products:	This product reacts with water, moisture, or humid air to evolve following compounds. Acetic acid. Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon dioxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion: Expected to be a low ingestion hazard.
Inhalation: Prolonged inhalation may be harmful.
Skin contact: No adverse effects due to skin contact are expected.
Eye contact: Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical, and toxicological characteristics: Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Toxicological data

Decomposition

	CAS #	Species	Test Results
Acetic acid	64-19-7		
Acute			
Dermal			
LD50		Rabbit	1060 mg/kg
Inhalation			
LC 50		Guinea	5000 ppm, 1 hours
		Pig	
		Mouse	5620 ppm, 1 hours
		Rat	11.4 mg/l, 4hours
Oral			
LD50		Mouse	4960 mg/kg
		Rabbit	1200 mg/kg
		Rat	3.31 g/kg
Distillates (petroleum)			
hydrotreated middle			
Oral		Rat	> 5,000 mg/kg
Inhalation			
LC 50		Rat	1.78 mg/l, 4 hours
Dermal			
		Rat	> 2,000 mg/kg

Skin corrosion / irritation: Causes severe skin burns and eye damage. (Acetic acid)
 Skin-Rabbit: 500 mg/24hr.MILD (Octamethylcyclotetrasiloxane)

Serious eye damage/eye irritation: Causes serious eye damage. (Acetic acid)
 Eye – Rabbit: MILD (Octamethylcyclotetrasiloxane)

Respiratory Sensitization: Not available.



SAFETY DATA SHEET

Skin Sensitization:	No evidence of sensitization (Octamethylcyclotetrasiloxane)
Germ Cell Mutagenicity:	Negative (Bacteria) (Octamethylcyclotetrasiloxane)
Carcinogenicity:	The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide. Titanium oxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans. Not listed
IARC Monographs, Overall Evaluation of Carcinogenicity. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):	
Reproductive Toxicity:	Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation and lactation resulted in decreases in live litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 and 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter size. The significance of these findings to humans is not known. (Octamethylcyclotetrasiloxane)
Specific target organ toxicity – single exposure:	Not available
Specific target organ toxicity – repeated exposure:	Repeated inhalation or oral exposure of mice and rats to Octamethylcyclotetrasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. A two year combined chronic and carcinogenicity assay was conducted on Octamethylcyclotetrasiloxane. Rats were exposed by whole-body vapor inhalation 6hrs /day, 5 days a week for up to 104 weeks to 0, 10, 30, 150 or 700 ppm of Octamethylcyclotetrasiloxane. The increase in incidence of (uterine) endometrial cell hyperplasia and uterine adenomas

Aspiration hazard:	(benign tumors) were observed in female rats at 700 ppm. Since these effects only occurred at 700 ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing Octamethylcyclotetrasiloxane would result in a significant risk to humans. (Octamethylcyclotetrasiloxane) The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard. Distillates (petroleum), hydrotreated middle
Chronic effects:	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further Information:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid.

12. ECOLOGICAL CONSIDERATIONS

Ecotoxicity

- Octamethylcyclotetrasiloxane: May cause long lasting harmful effects to aquatic life.

Components		Species	Test Results
Titanium oxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water Flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus Heteroclitus)	> 1000 mg/l, 96 hours
Decomposition			
Acetic acid (CAS 64-19-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia Magna)	65 mg/l, 48 hours
Fish	LC50	Bluegill (Leponis Macrochirus)	75mg/l, 96 hours

Persistence and degradability: Not available.

Bioaccumulative potential: Bio concentration Factor (BCF) / (Flathead minnow): 12400

Octamethylcyclotetrasiloxane.

Mobility in Soil: Not available.

Other adverse effects: Not available

13. DISPOSAL CONSIDERATIONS

Can be land-filled for cured product or burned in a chemical incinerator equipped with an afterburner and scrubber. Do not dispose the emptied container unlawfully. Observe all federal, state & local laws.

14. TRANSPORT INFORMATION

DOT: Not regulated as dangerous good.

IATA: Not regulated as dangerous good.

IMDG: Not regulated as dangerous good.

Transport in bulk according to This product is not intended to be transported in bulk.

Annex II of MARPDL 73/78 and

The IBC Code:

15. REGULATORY INFORMATION

US federal regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not listed

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA)

SARA 313 (TRI reporting)

US State Regulations

- **Massachusetts: Substance List:**
Titanium oxide (CAS 13463-67-7)
- **New Jersey Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Pennsylvania Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Rhode Island RTK:** Not regulated.
- **California Proposition 65:** The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards.
- **US California Proposition 65 – CRT: Listed date / Carcinogenic substance**
Titanium oxide (CAS 13463-67-7) Listed: September 2, 2011

International Inventories

Country(s) or region	Inventory Name	On Inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non Domestic Substances (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemicals	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances	Yes
Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
United States	Toxic Substances Control Act (TSCA) Inventory	Yes

16. OTHER INFORMATION

Prepared by: Silco Inc.

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

www.silco-inc.com



SAFETY DATA SHEET

Print Date: 5/31/2015

PRODUCT NAME: SIL-BOND RTV 4500

COLOR: CLEAR

REVISION DATE: May 31st 2015

1. PRODUCT AND COMPANY IDENTIFICATION

Commercial Product Name: SIL-BOND RTV 4500

Product Classification: Silicone Sealant

Manufacturer:

Silco Inc.

7635 St. Clair Avenue

Mentor, OH 44060

PHONE: 440-975-8886 FAX: 440-975-8887

General Description: Silicone elastomer

Physical Form: Paste

Color: Clear

Odor: Acetic acid odor

NFPA PROFILE: Health - 1 Flammability - 1 Instability/Reactivity - 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION

Physical Hazards: Not classified

Health Hazards: Reproductive toxicity (fertility) Category 2

Environmental Hazards: Not classified

OSHA Defined Hazards: Not classified

- Hazards not stated here are "Not Classified", "Not Applicable" or "Classification not possible".

GHS Label Elements

Signal Word:

Warning



Hazard Statement:

Precautionary

Statement:

Prevention:

Suspected of damaging fertility. May cause eye/lung/skin irritation. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves / protective clothing / eye protection / face protection. Wash well after handling. Contaminated work clothing should not be allowed out of work place.



SAFETY DATA SHEET

Response:	SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention / advice. Get medical attention / advice if you feel unwell. EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritant persists get medical attention / advice. If exposed or concerned: get medical attention or advice. Take off contaminated clothing and wash it before reuse.
Storage:	Store locked up.
Disposal:	Disposal of contents / container in accordance with local / regional / state / federal and international regulations.
Hazard(S) not Otherwise classified (HNOC):	None known.
Supplemental Information:	None known.
Substance(s) formed under the conditions of use:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide.
HMIS (Ratings):	Health: 1 Flammability: 1 Physical hazard: 0

3. COMPOSITION/ INGREDIENTS

Mixtures

Hazardous Ingredients

Chemical Name	CAS Number	%
Ethyltriacetoxysilane	17689-77-9	1-5
Methylacetoxysilane	4253-34-3	1-5
Titanium oxide	13463-67-7	< 1
Distillates (petroleum), hydrotreated middle	64742-46-7	1-7
Octamethylcyclotetrasiloxane (impurity)	556-67-2	< 1

4. FIRST AID MEASURES

Inhalation:	Remove to fresh air. Call a physician if symptoms develop or persist.
Skin Contact:	Wash off with soap and plenty of water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation or rash occurs: get medical attention / advice. Take off contaminated clothing and wash before use.
Eyes Contact:	Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation developed or persists.
Ingestion:	Wash out mouth. Get medical attention immediately.
Most Important symptoms / effects, acute and delayed:	Direct contact with eyes may cause temporary irritation.
Indication of immediate Medical attention and Special treatment Needed:	Treat Symptomatically.
General Information:	If exposed or concerned: Get medical advice / attention. Ensure that medical personnel are aware materials involved and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂)
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	By heating and fire, harmful vapors / gases may be formed.
Specific protective equipment and precautions for firefighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots and self-contained breathing apparatus.
Fire Fighting equipment / Instructions:	Move containers from fire area if you can do so without risk.
General fire hazards:	No unusual fire or explosion hazards noted.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch or walk through spilled material. Ensure adequate ventilation. Wear appropriate personal protective equipment.
Methods and materials for containment and cleaning up:	Eliminate sources of ignition. Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for reuse.
Environmental precautions:	Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precaution for safe handling:	Provide adequate ventilation. Use care in handling/storage. Obtain special instructions before use. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Pregnant and breastfeeding women must not handle this product. Do not breathe mist or vapor. Avoid contact with eyes. Avoid contact with skin. Avoid long term exposure.
Conditions for safe storage, including any incompatibilities	Stored locked up. Keep container tightly closed. Keep out of reach of children. Store in a cool dry place out of direct sunlight. Keep in original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	CAS #	Type	Value
Titanium oxide	13463-67-7	PEL	15 mg/m ³
Decomposition			
Distillates (petroleum) hydrotreated middle	64742-46-7	TWA (Mist)	5 mg/m ³
Acetic acid	64-19-7	PEL	25 mg/m ³ 10 ppm

US. ACGIH Threshold Limit Values			
Components			
Titanium dioxide	13463-67-7	TWA	10 mg/m3
Decomposition			
Acetic acid	64-19-7	STEL	15 ppm
		TWA	10 ppm
US. NIOSH: Pocket Guide to Chemical Hazards			
Decomposition			
Acetic acid	64-19-7	STEL	37 mg/m3
			15 ppm
		TWA	25 mg/m3
			10 ppm
Distillates (petroleum)	64742-46-7	TWA (Mist)	5mg/m3
hydrotreated middle		ST (Mist)	10mg/m3
Biological limit values:	No biological exposure limits for the ingredient(s).		
Appropriate engineering controls:	Provide adequate general and local exhaust. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and or / door open for at least 24 hours after applications.		
Individual protection measures such as personal protective equipment.			
Eye / Face protection:	Tightly sealed safety glasses according to EN 166.		
Skin / Hand protection:	Wear protective gloves.		
Other:	Wear suitable protective clothing.		
Respiratory protection:	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.		
Thermal hazards:	Wear appropriate thermal protective clothing, when necessary.		
General Hygiene Considerations:	Avoid contact with eyes. Avoid contact with skin. When using, do not eat, drink or smoke. Keep away from food or drink. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the work place. Handle in accordance with good industrial hygiene and safety practice.		

9. PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance

Form:	Paste
Color:	Clear
Odor:	Acetic acid odor

Odor Threshold:	Not available
pH:	Not available
Melting point / freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash Point:	141.8 °F (> 96 °C) Closed cup
Evaporative rate:	< 1 (Butyl Acetate = 1)
Flammability (solid, gas):	Not applicable
Upper / Lower flammability or explosive limits:	
Flammability limit – lower (%):	No data
Flammability limit – upper (%):	No data
Explosive limit – Lower (%):	Not available
Explosive limit – Upper (%):	Not available
Vapor pressure:	Negligible (25 °C)
Vapor density:	> 1 (air=1)
Relative density:	1.04 (25 °C)
Solubility (water):	Not soluble
VOC Content:	30 grams per liter
Partition coefficient: (n-octanol / water)	Not applicable
Auto-ignition temperature:	No data
Decomposition temperature:	Not available
Viscosity:	Not applicable
Molecular weight:	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	No hazardous reaction known under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous Reactions	Hazardous polymerization does not occur.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Water and moisture.
Hazardous decomposition products:	This product reacts with water, moisture, or humid air to evolve following compounds. Acetic acid. Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon dioxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion:	Expected to be a low ingestion hazard.
Inhalation:	Prolonged inhalation may be harmful.
Skin contact:	No adverse effects due to skin contact are expected.
Eye contact:	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical, and toxicological characteristics: Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Toxicological data

Decomposition

	CAS #	Species	Test Results
Acetic acid	64-19-7		
Acute			
Dermal			
LD50		Rabbit	1060 mg/kg
Inhalation			
LC 50		Guinea	5000 ppm, 1 hours
		Pig	
		Mouse	5620 ppm, 1 hours
		Rat	11.4 mg/l, 4hours
Oral			
LD50		Mouse	4960 mg/kg
		Rabbit	1200 mg/kg
		Rat	3.31 g/kg
Distillates (petroleum)			
hydrotreated middle			
Oral		Rat	> 5,000 mg/kg
Inhalation			
LC 50		Rat	1.78 mg/l, 4 hours
Dermal			
		Rat	> 2,000 mg/kg
Skin corrosion / irritation:	Causes severe skin burns and eye damage. (Acetic acid)		
	Skin-Rabbit: 500 mg/24hr.MILD (Octamethylcyclotetrasiloxane)		
Serious eye damage/eye irritation:	Causes serious eye damage. (Acetic acid)		
	Eye – Rabbit: MILD (Octamethylcyclotetrasiloxane)		
Respiratory Sensitization:	Not available.		



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Skin Sensitization:	No evidence of sensitization (Octamethylcyclotetrasiloxane)
Germ Cell Mutagenicity:	Negative (Bacteria) (Octamethylcyclotetrasiloxane)
Carcinogenicity:	The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide. Titanium oxide (CAS 13463-67-7)
IARC Monographs, Overall Evaluation of Carcinogenicity.	2B Possibly carcinogenic to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):	Not listed
Reproductive Toxicity:	Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation and lactation resulted in decreases in live litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 and 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter size. The significance of these findings to humans is not known. (Octamethylcyclotetrasiloxane)
Specific target organ toxicity – single exposure:	Not available
Specific target organ toxicity – repeated exposure:	Repeated inhalation or oral exposure of mice and rats to Octamethylcyclotetrasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. A two year combined chronic and carcinogenicity assay was conducted on Octamethylcyclotetrasiloxane. Rats were exposed by whole-body vapor inhalation 6hrs /day, 5 days a week for up to 104 weeks to 0, 10, 30, 150 or 700 ppm of Octamethylcyclotetrasiloxane. The increase in incidence of (uterine) endometrial cell hyperplasia and uterine adenomas

Aspiration hazard:	(benign tumors) were observed in female rats at 700 ppm. Since these effects only occurred at 700 ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing Octamethylcyclotetrasiloxane would result in a significant risk to humans. (Octamethylcyclotetrasiloxane) The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard. Distillates (petroleum), hydrotreated middle
Chronic effects:	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further Information:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid.

12. ECOLOGICAL CONSIDERATIONS

Ecotoxicity

- Octamethylcyclotetrasiloxane: May cause long lasting harmful effects to aquatic life.

Components		Species	Test Results
Titanium oxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water Flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus Heteroclitus)	> 1000 mg/l, 96 hours
Decomposition			
Acetic acid (CAS 64-19-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia Magna)	65 mg/l, 48 hours
Fish	LC50	Bluegill (Leponis Macrochirus)	75mg/l, 96 hours

Persistence and degradability: Not available.

Bioaccumulative potential: Bio concentration Factor (BCF) / (Flathead minnow): 12400
Octamethylcyclotetrasiloxane.

Mobility in Soil: Not available.

Other adverse effects: Not available

13. DISPOSAL CONSIDERATIONS

Can be land-filled for cured product or burned in a chemical incinerator equipped with an afterburner and scrubber. Do not dispose the emptied container unlawfully. Observe all federal, state & local laws.

14. TRANSPORT INFORMATION

DOT: Not regulated as dangerous good.

IATA: Not regulated as dangerous good.

IMDG: Not regulated as dangerous good.

Transport in bulk according to This product is not intended to be transported in bulk.

Annex II of MARPDL 73/78 and

The IBC Code:

15. REGULATORY INFORMATION

US federal regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not listed

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA)

SARA 313 (TRI reporting)

US State Regulations

- **Massachusetts: Substance List:**
Titanium oxide (CAS 13463-67-7)
- **New Jersey Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Pennsylvania Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Rhode Island RTK:** Not regulated.
- **California Proposition 65:** The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards.
- **US California Proposition 65 – CRT: Listed date / Carcinogenic substance**
Titanium oxide (CAS 13463-67-7) Listed: September 2, 2011

International Inventories

Country(s) or region	Inventory Name	On Inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non Domestic Substances (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemicals	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances	Yes
Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
United States	Toxic Substances Control Act (TSCA) Inventory	Yes

16. OTHER INFORMATION

Prepared by: Silco Inc.

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

www.silco-inc.com



SAFETY DATA SHEET

Print Date: 5/31/2015

PRODUCT NAME: SIL-BOND RTV 4500

COLOR: WHITE

REVISION DATE: May 31st 2015

1. PRODUCT AND COMPANY IDENTIFICATION

Commercial Product Name: SIL-BOND RTV 4500

Product Classification: Silicone Sealant

Manufacturer:

Silco Inc.

7635 St. Clair Avenue

Mentor, OH 44060

PHONE: 440-975-8886 FAX: 440-975-8887

General Description: Silicone elastomer

Physical Form: Paste

Color: White

Odor: Acetic acid odor

NFPA PROFILE: Health – 1 Flammability – 1 Instability/Reactivity - 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION

Physical Hazards: Not classified

Health Hazards: Reproductive toxicity (fertility) Category 2

Environmental Hazards: Not classified

OSHA Defined Hazards: Not classified

- Hazards not stated here are "Not Classified", "Not Applicable" or "Classification not possible".

GHS Label Elements

Signal Word:

Warning



Hazard Statement:

Precautionary

Statement:

Prevention:

Suspected of damaging fertility. May cause eye/lung/skin irritation. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves / protective clothing / eye protection / face protection. Wash well after handling. Contaminated work clothing should not be allowed out of work place.

Response:	SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention / advice. Get medical attention / advice if you feel unwell. EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritant persists get medical attention / advice. If exposed or concerned: get medical attention or advice. Take off contaminated clothing and wash it before reuse.
Storage:	Store locked up.
Disposal:	Disposal of contents / container in accordance with local / regional / state / federal and international regulations.
Hazard(S) not Otherwise classified (HNOC):	None known.
Supplemental Information:	None known.
Substance(s) formed under the conditions of use:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide.
HMIS (Ratings):	Health: 1 Flammability: 1 Physical hazard: 0

3. COMPOSITION/ INGREDIENTS

Mixtures

Hazardous Ingredients

Chemical Name	CAS Number	%
Ethyltriacetoxysilane	17689-77-9	1 – 5
Methylacetoxysilane	4253-34-3	1 – 5
Titanium oxide	13463-67-7	< 1
Distillates (petroleum), hydrotreated middle	64742-46-7	1 – 7
Octamethylcyclotetrasiloxane (impurity)	556-67-2	< 1



SAFETY DATA SHEET

4. FIRST AID MEASURES

Inhalation:	Remove to fresh air. Call a physician if symptoms develop or persist.
Skin Contact:	Wash off with soap and plenty of water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation or rash occurs: get medical attention / advice. Take off contaminated clothing and wash before use.
Eyes Contact:	Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation developed or persists.
Ingestion:	Wash out mouth. Get medical attention immediately.
Most Important symptoms / effects, acute and delayed:	Direct contact with eyes may cause temporary irritation.
Indication of immediate Medical attention and Special treatment Needed:	Treat Symptomatically.
General Information:	If exposed or concerned: Get medical advice / attention. Ensure that medical personnel are aware materials involved and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂)
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	By heating and fire, harmful vapors / gases may be formed.
Specific protective equipment and precautions for firefighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots and self-contained breathing apparatus.
Fire Fighting equipment / Instructions:	Move containers from fire area if you can do so without risk.
General fire hazards:	No unusual fire or explosion hazards noted.



SAFETY DATA SHEET

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch or walk through spilled material. Ensure adequate ventilation. Wear appropriate personal protective equipment.

Methods and materials for containment and cleaning up:

Eliminate sources of ignition.

Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for reuse.

Environmental precautions:

Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precaution for safe handling:

Provide adequate ventilation. Use care in handling/storage. Obtain special instructions before use. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Pregnant and breastfeeding women must not handle this product. Do not breathe mist or vapor. Avoid contact with eyes. Avoid contact with skin. Avoid long term exposure.

Conditions for safe storage, including any incompatibilities

Stored locked up. Keep container tightly closed. Keep out of reach of children. Store in a cool dry place out of direct sunlight. Keep in original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	CAS #	Type	Value
Titanium oxide	13463-67-7	PEL	15 mg/m ³
Decomposition			
Distillates (petroleum) hydrotreated middle	64742-46-7	TWA (Mist)	5 mg/m ³
Acetic acid	64-19-7	PEL	25 mg/m ³ 10 ppm

US. ACGIH Threshold Limit Values			
Components			
Titanium dioxide	13463-67-7	TWA	10 mg/m3
Decomposition			
Acetic acid	64-19-7	STEL	15 ppm
		TWA	10 ppm
US. NIOSH: Pocket Guide to Chemical Hazards			
Decomposition			
Acetic acid	64-19-7	STEL	37 mg/m3
			15 ppm
		TWA	25 mg/m3
			10 ppm
Distillates (petroleum)	64742-46-7	TWA (Mist)	5mg/m3
hydrotreated middle		ST (Mist)	10mg/m3
Biological limit values:	No biological exposure limits for the ingredient(s).		
Appropriate engineering controls:	Provide adequate general and local exhaust. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and or / door open for at least 24 hours after applications.		
Individual protection measures such as personal protective equipment.			
Eye / Face protection:	Tightly sealed safety glasses according to EN 166.		
Skin / Hand protection:	Wear protective gloves.		
Other:	Wear suitable protective clothing.		
Respiratory protection:	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.		
Thermal hazards:	Wear appropriate thermal protective clothing, when necessary.		
General Hygiene Considerations:	Avoid contact with eyes. Avoid contact with skin. When using, do not eat, drink or smoke. Keep away from food or drink. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the work place. Handle in accordance with good industrial hygiene and safety practice.		

9. PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance

Form:	Paste
Color:	White
Odor:	Acetic acid odor

Odor Threshold:	Not available
pH:	Not available
Melting point / freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash Point:	141.8 °F (> 96 °C) Closed cup
Evaporative rate:	< 1 (Butyl Acetate = 1)
Flammability (solid, gas):	Not applicable
Upper / Lower flammability or explosive limits:	
Flammability limit – lower (%):	No data
Flammability limit – upper (%):	No data
Explosive limit – Lower (%):	Not available
Explosive limit – Upper (%):	Not available
Vapor pressure:	Negligible (25 °C)
Vapor density:	> 1 (air=1)
Relative density:	1.04 (25 °C)
Solubility (water):	Not soluble
VOC Content:	30 grams per liter
Partition coefficient: (n-octanol / water)	Not applicable
Auto-ignition temperature:	No data
Decomposition temperature:	Not available
Viscosity:	Not applicable
Molecular weight:	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	No hazardous reaction known under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous Reactions	Hazardous polymerization does not occur.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Water and moisture.
Hazardous decomposition products:	This product reacts with water, moisture, or humid air to evolve following compounds. Acetic acid. Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon dioxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion: Expected to be a low ingestion hazard.
Inhalation: Prolonged inhalation may be harmful.
Skin contact: No adverse effects due to skin contact are expected.
Eye contact: Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical, and toxicological characteristics:

Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Toxicological data

Decomposition

	CAS #	Species	Test Results
Acetic acid	64-19-7		
Acute			
Dermal			
LD50		Rabbit	1060 mg/kg
Inhalation			
LC 50		Guinea	5000 ppm, 1 hours
		Pig	
		Mouse	5620 ppm, 1 hours
		Rat	11.4 mg/l, 4hours
Oral			
LD50		Mouse	4960 mg/kg
		Rabbit	1200 mg/kg
		Rat	3.31 g/kg
Distillates (petroleum)			
hydrotreated middle			
Oral		Rat	> 5,000 mg/kg
Inhalation			
LC 50		Rat	1.78 mg/l, 4 hours
Dermal			
		Rat	> 2,000 mg/kg

Skin corrosion / irritation: Causes severe skin burns and eye damage. (Acetic acid)
 Skin-Rabbit: 500 mg/24hr.MILD (Octamethylcyclotetrasiloxane)

Serious eye damage/eye irritation: Causes serious eye damage. (Acetic acid)
 Eye – Rabbit: MILD (Octamethylcyclotetrasiloxane)

Respiratory Sensitization: Not available.



SAFETY DATA SHEET

Skin Sensitization:	No evidence of sensitization (Octamethylcyclotetrasiloxane)
Germ Cell Mutagenicity:	Negative (Bacteria) (Octamethylcyclotetrasiloxane)
Carcinogenicity:	The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide. Titanium oxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans. Not listed
IARC Monographs, Overall Evaluation of Carcinogenicity.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):	
Reproductive Toxicity:	Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation and lactation resulted in decreases in live litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 and 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter size. The significance of these findings to humans is not known. (Octamethylcyclotetrasiloxane)
Specific target organ toxicity – single exposure:	Not available
Specific target organ toxicity – repeated exposure:	Repeated inhalation or oral exposure of mice and rats to Octamethylcyclotetrasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. A two year combined chronic and carcinogenicity assay was conducted on Octamethylcyclotetrasiloxane. Rats were exposed by whole-body vapor inhalation 6hrs /day, 5 days a week for up to 104 weeks to 0, 10, 30, 150 or 700 ppm of Octamethylcyclotetrasiloxane. The increase in incidence of (uterine) endometrial cell hyperplasia and uterine adenomas

	(benign tumors) were observed in female rats at 700 ppm. Since these effects only occurred at 700 ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing Octamethylcyclotetrasiloxane would result in a significant risk to humans. (Octamethylcyclotetrasiloxane)
Aspiration hazard:	The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard. Distillates (petroleum), hydrotreated middle
Chronic effects:	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further Information:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid.

12. ECOLOGICAL CONSIDERATIONS

Ecotoxicity

- Octamethylcyclotetrasiloxane: May cause long lasting harmful effects to aquatic life.

Components		Species	Test Results
Titanium oxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water Flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus heteroclitus)	> 1000 mg/l, 96 hours
Decomposition			
Acetic acid (CAS 64-19-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	65 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus)	75mg/l, 96 hours

Persistence and degradability: Not available.

Bioaccumulative potential: Bio concentration Factor (BCF) / (Flathead minnow): 12400

Octamethylcyclotetrasiloxane.

Mobility in Soil: Not available.

Other adverse effects: Not available

13. DISPOSAL CONSIDERATIONS

Can be land-filled for cured product or burned in a chemical incinerator equipped with an afterburner and scrubber. Do not dispose the emptied container unlawfully. Observe all federal, state & local laws.

14. TRANSPORT INFORMATION

DOT: Not regulated as dangerous good.

IATA: Not regulated as dangerous good.

IMDG: Not regulated as dangerous good.

Transport in bulk according to This product is not intended to be transported in bulk.

Annex II of MARPDL 73/78 and

The IBC Code:

15. REGULATORY INFORMATION

US federal regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not listed

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA)

SARA 313 (TRI reporting)

US State Regulations

- **Massachusetts: Substance List:**
Titanium oxide (CAS 13463-67-7)
- **New Jersey Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Pennsylvania Worker and Community Right to Know Act:**
Titanium oxide (CAS 13463-67-7)
- **Rhode Island RTK:** Not regulated.
- **California Proposition 65:** The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards.
- **US California Proposition 65 – CRT: Listed date / Carcinogenic substance**
Titanium oxide (CAS 13463-67-7) Listed: September 2, 2011

International Inventories

Country(s) or region	Inventory Name	On Inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non Domestic Substances (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemicals	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances	Yes
Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
United States	Toxic Substances Control Act (TSCA) Inventory	Yes

16. OTHER INFORMATION

Prepared by: Silco Inc.

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

www.silco-inc.com



Safety Data Sheet

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Issue Date: 04/24/15

Version Number: 62.00
Supersedes Date: 04/17/15

SECTION 1: Identification

1.1. Product identifier

3M™ Super 77 Classic Spray Adhesive

Product Identification Numbers

62-4437-4920-5, 62-4437-4921-3, 62-4437-4930-4, 62-4437-4935-3, 62-4437-4950-2, 62-4437-4955-1

1.2. Recommended use and restrictions on use

Recommended use

Aerosol Adhesive, Industrial use

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Flammable Aerosol: Category 2.

Reproductive Toxicity: Category 2.

Simple Asphyxiant.

Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (central nervous system): Category 3.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

Flammable aerosol.

May cause drowsiness or dizziness.

Suspected of damaging fertility or the unborn child.

May displace oxygen and cause rapid suffocation.

Causes damage to organs:
cardiovascular system |

Precautionary Statements

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Do not spray on an open flame or other ignition source.

Pressurized container: Do not pierce or burn, even after use.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see Notes to Physician on this label).

Storage:

Protect from sunlight. Do not expose to temperatures exceeding 50C/122F.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

2.3. Hazards not otherwise classified

Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal.

18% of the mixture consists of ingredients of unknown acute dermal toxicity.

18% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt

Non-Hazardous Components	Trade Secret*	15 - 40 Trade Secret *
Hydrotreated light naphtha (petroleum)	64742-49-0	10 - 30 Trade Secret *
Cyclohexane	110-82-7	10 - 30 Trade Secret *
Propane	74-98-6	7 - 13 Trade Secret *
Isobutane	75-28-5	7 - 13 Trade Secret *
Dimethyl ether	115-10-6	7 - 13 Trade Secret *
Hexane	110-54-3	< 1 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. Get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Aldehydes

Carbon monoxide

Carbon dioxide

Toxic Vapor, Gas, Particulate

Condition

During Combustion

During Combustion

During Combustion

During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Cover spill area with a fire-extinguishing foam. An appropriate aqueous film forming foam (AFFF) is recommended. Collect as much of the spilled material as possible using non-sparking tools. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Hexane	110-54-3	ACGIH	TWA:50 ppm	Skin Notation
Hexane	110-54-3	OSHA	TWA:1800 mg/m3(500 ppm)	
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Cyclohexane	110-82-7	OSHA	TWA:1050 mg/m3(300 ppm)	
Dimethyl ether	115-10-6	AIHA	TWA:1880 mg/m3(1000 ppm)	
Dimethyl ether	115-10-6	CMRG	TWA:1000 ppm	
Hydrotreated light naptha (petroleum)	64742-49-0	CMRG	TWA:50 ppm	
Propane	74-98-6	ACGIH	Limit value not established.	
Propane	74-98-6	OSHA	TWA:1800 mg/m3(1000 ppm)	
Isobutane	75-28-5	ACGIH	STEL:1000 ppm	
Natural gas	75-28-5	ACGIH	Limit value not established.	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety Glasses with side shields

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Gas
Odor, Color, Grade:	light cream colored, sweet/fruity odor.
Odor threshold	No Data Available
pH	Not Applicable
Melting point	No Data Available
Flash Point	-42.00 °F [Test Method: Tagliabue Closed Cup]
Evaporation rate	1.90 [Ref Std: ETHER=1]
Flammability (solid, gas)	Flammable Aerosol: Category 2.
Flammable Limits(LEL)	Approximately 1.5 % volume
Flammable Limits(UEL)	Approximately 8.6 % volume
Vapor Density	2.97 [Ref Std: AIR=1]
Density	0.697 g/ml
Specific Gravity	0.697 [Ref Std: WATER=1]
Solubility in Water	Nil
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available

Autoignition temperature	No Data Available
Decomposition temperature	Not Applicable
Viscosity	Not Applicable
Hazardous Air Pollutants	<=1 % weight [Test Method: Calculated]
Volatile Organic Compounds	75 % [Test Method: calculated per CARB title 2]
Heat of Combustion	<=43.5 kJ/g
Solids Content	15 - 40 %

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Intentional concentration and inhalation may be harmful or fatal.

Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose

and throat pain.

May cause additional health effects (see below).

Skin Contact:

Prolonged or repeated exposure may cause:

Dermal Defatting: Signs/symptoms may include localized redness, itching, drying and cracking of skin.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Single exposure, above recommended guidelines, may cause:

Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor (4 hr)		No data available; calculated ATE > 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Hydrotreated light naptha (petroleum)	Dermal	Rabbit	LD50 > 3,160 mg/kg
Hydrotreated light naptha (petroleum)	Inhalation-Vapor (4 hours)	Rat	LC50 > 14.7 mg/l
Hydrotreated light naptha (petroleum)	Ingestion	Rat	LD50 > 5,800 mg/kg
Isobutane	Inhalation-Gas (4 hours)	Rat	LC50 276,000 ppm
Propane	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm
Cyclohexane	Dermal	Rat	LD50 > 2,000 mg/kg
Cyclohexane	Inhalation-Vapor (4 hours)	Rat	LC50 > 32.9 mg/l
Cyclohexane	Ingestion	Rat	LD50 6,200 mg/kg
Non-Hazardous Components	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Dimethyl ether	Inhalation-Gas (4 hours)	Rat	LC50 164,000 ppm

Hexane	Dermal	Rabbit	LD50 > 2,000 mg/kg
Hexane	Inhalation-Vapor (4 hours)	Rat	LC50 170 mg/l
Hexane	Ingestion	Rat	LD50 > 28,700 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Overall product		Minimal irritation
Hydrotreated light naptha (petroleum)	Rabbit	Irritant
Isobutane	Professional judgement	No significant irritation
Propane	Rabbit	Minimal irritation
Cyclohexane	Rabbit	Mild irritant
Non-Hazardous Components	Professional judgement	Minimal irritation
Hexane	Human and animal	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Hydrotreated light naptha (petroleum)	Rabbit	Mild irritant
Isobutane	Professional judgement	No significant irritation
Propane	Rabbit	Mild irritant
Cyclohexane	Rabbit	Mild irritant
Hexane	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Hydrotreated light naptha (petroleum)	Guinea pig	Not sensitizing
Hexane	Human	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Hydrotreated light naptha (petroleum)	In Vitro	Not mutagenic
Isobutane	In Vitro	Not mutagenic
Propane	In Vitro	Not mutagenic
Cyclohexane	In Vitro	Not mutagenic
Cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification
Dimethyl ether	In Vitro	Not mutagenic
Dimethyl ether	In vivo	Not mutagenic
Hexane	In Vitro	Not mutagenic
Hexane	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Hydrotreated light naptha (petroleum)	Inhalation	Mouse	Some positive data exist, but the data are not

Dimethyl ether	Inhalation	Rat	sufficient for classification
Hexane	Dermal	Mouse	Not carcinogenic
Hexane	Inhalation	Mouse	Not carcinogenic
			Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Cyclohexane	Inhalation	Not toxic to female reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not toxic to male reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 6.9 mg/l	2 generation
Dimethyl ether	Inhalation	Not toxic to female reproduction	Rat	NOAEL 25,000 ppm	2 years
Dimethyl ether	Inhalation	Not toxic to male reproduction	Rat	NOAEL 25,000 ppm	2 years
Dimethyl ether	Inhalation	Not toxic to development	Rat	NOAEL 40,000 ppm	during organogenesis
Hexane	Ingestion	Not toxic to development	Mouse	NOAEL 2,200 mg/kg/day	during organogenesis
Hexane	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 0.7 mg/l	during gestation
Hexane	Ingestion	Toxic to male reproduction	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Inhalation	Toxic to male reproduction	Rat	LOAEL 3.52 mg/l	28 days

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Hydrotreated light naphtha (petroleum)	Inhalation	central nervous system depression	May cause drowsiness or dizziness		NOAEL Not available	
Hydrotreated light naphtha (petroleum)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Isobutane	Inhalation	cardiac sensitization	Causes damage to organs	Multiple animal species	NOAEL Not available	
Isobutane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Isobutane	Inhalation	respiratory irritation	All data are negative	Mouse	NOAEL Not available	
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Propane	Inhalation	respiratory irritation	All data are negative	Human	NOAEL Not available	
Cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for	Human and	NOAEL Not available	

			classification	animal		
Dimethyl ether	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Rat	LOAEL 10,000 ppm	30 minutes
Dimethyl ether	Inhalation	cardiac sensitization	Some positive data exist, but the data are not sufficient for classification	Dog	NOAEL 100,000 ppm	5 minutes
Hexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Hexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL Not available	8 hours
Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 24.6 mg/l	8 hours

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Isobutane	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 4,500 ppm	13 weeks
Cyclohexane	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 24 mg/l	90 days
Cyclohexane	Inhalation	auditory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.7 mg/l	90 days
Cyclohexane	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL 2.7 mg/l	10 weeks
Cyclohexane	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 24 mg/l	14 weeks
Cyclohexane	Inhalation	peripheral nervous system	All data are negative	Rat	NOAEL 8.6 mg/l	30 weeks
Dimethyl ether	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 25,000 ppm	2 years
Dimethyl ether	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 20,000 ppm	30 weeks
Hexane	Inhalation	peripheral nervous system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 1.76 mg/l	13 weeks
Hexane	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 months
Hexane	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 1.76 mg/l	6 months
Hexane	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 35.2 mg/l	13 weeks
Hexane	Inhalation	auditory system immune system eyes	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	heart skin endocrine system	All data are negative	Rat	NOAEL 1.76 mg/l	6 months
Hexane	Ingestion	peripheral nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Ingestion	endocrine system hematopoietic system liver immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	13 weeks

		kidney and/or bladder				

Aspiration Hazard

Name	Value
Hydrotreated light naptha (petroleum)	Aspiration hazard
Cyclohexane	Aspiration hazard
Hexane	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. The facility should be equipped to handle gaseous waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information**15.1. US Federal Regulations**

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Cyclohexane	110-82-7	10 - 30

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 4 Instability: 0 Special Hazards: None

Aerosol Storage Code: 3

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 2 Flammability: 4 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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3M USA SDSs are available at www.3M.com

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: April 23, 2019

1 Identification

- **Product identifier**
- **Trade name:** HA19-Z
- **Other means of identification:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Adhesive.
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
Mon-Eco Industries, Inc.
5 Joanna Ct.
East Brunswick, NJ 08816
Phone: 732-257-7942
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)



MON-ECO INDUSTRIES, INCORPORATED

2 Hazard(s) identification

- **Classification of the substance or mixture**
Flam. Liq. 2 H225 Highly flammable liquid and vapor.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.
- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**


GHS02 GHS07
- **Signal word:** Danger
- **Hazard statements:**
H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
- **Precautionary statements:**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist, vapors, or spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.

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Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: April 23, 2019

Trade name: HA19-Z

(Cont'd. of page 1)

- P280 Wear protective gloves and eye protection.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P312 Call a poison center/doctor if you feel unwell.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P370+P378 In case of fire: Use foam, powder, or carbon dioxide for extinction.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

• **Chemical characterization: Mixtures**

• **Components:**

79-20-9	Methyl acetate	 Flam. Liq. 2, H225  Eye Irrit. 2A, H319; STOT SE 3, H336	40-60%
1332-58-7	Kaolin		10-20%
1317-65-3	Limestone		5-10%

• **Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.
For the wording of the listed Hazard Statements, refer to section 16.

4 First aid measures

• **Description of first aid measures**

• **After inhalation:**

Supply fresh air; consult doctor in case of complaints.
Provide oxygen treatment if affected person has difficulty breathing.

• **After skin contact:**

Immediately remove any clothing soiled by the product.
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.

• **After eye contact:**

Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

• **After swallowing:**

Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.

• **Most important symptoms and effects, both acute and delayed:**

Headache
Cramp
Dizziness

(Cont'd. on page 3)

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

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(Cont'd. of page 2)

- Coughing
- Breathing difficulty
- Causes eye irritation.
- Slight irritant effect on skin and mucous membranes.
- Gastric or intestinal disorders when ingested.
- Nausea in case of ingestion.
- **Danger:** Vapors may cause drowsiness and dizziness.
- **Indication of any immediate medical attention and special treatment needed:** Treat symptomatically.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
 - Foam
 - Fire-extinguishing powder
 - Gaseous extinguishing agents
 - Carbon dioxide
 - Water fog / haze
- **For safety reasons unsuitable extinguishing agents:** Water spray
- **Special hazards arising from the substance or mixture**
 - Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**
 - Wear self-contained respiratory protective device.
 - Wear fully protective suit.
- **Additional information:**
 - Eliminate all ignition sources if safe to do so.
 - Cool endangered containers with water fog.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 - Use respiratory protective device against the effects of fumes/dust/aerosol.
 - Wear protective equipment. Keep unprotected persons away.
 - Ensure adequate ventilation.
 - Keep away from ignition sources.
 - Protect from heat.
- **Environmental precautions** Avoid release to the environment.
- **Methods and material for containment and cleaning up**
 - Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).
 - Send for recovery or disposal in suitable receptacles.
 - Used rags or other cleaning materials should be soaked with water and placed in a sealed container.
- **Reference to other sections**
 - See Section 7 for information on safe handling.
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.

(Cont'd. on page 4)

Safety Data Sheet

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7 Handling and storage

• Handling

• Precautions for safe handling:

- Handle with care.
- Keep out of reach of children.
- Avoid breathing mist, vapors, or spray.
- Avoid contact with the eyes and skin.
- Avoid splashes or spray in enclosed areas.
- Use only in well ventilated areas.
- Rags, metal wools / cuttings / shavings and waste papers soaked with product must be placed in a sealed metal container rated for flammable waste.

• Information about protection against explosions and fires:

- Keep ignition sources away - Do not smoke.
- Protect against electrostatic charges.
- Fumes can combine with air to form an explosive mixture.
- Flammable gas-air mixtures may be formed in empty containers/receptacles.

• Conditions for safe storage, including any incompatibilities

• Requirements to be met by storerooms and receptacles:

- Avoid storage near extreme heat, ignition sources or open flame.
- Store in cool, dry conditions in well sealed receptacles.

• Information about storage in one common storage facility:

- Store away from foodstuffs.
- Store away from oxidizing agents.

• Specific end use(s) No relevant information available.

8 Exposure controls/personal protection

• Control parameters

• Components with limit values that require monitoring at the workplace:

79-20-9 Methyl acetate

PEL (USA)	Long-term value: 610 mg/m ³ , 200 ppm
REL (USA)	Short-term value: 760 mg/m ³ , 250 ppm Long-term value: 610 mg/m ³ , 200 ppm
TLV (USA)	Short-term value: 757 mg/m ³ , 250 ppm Long-term value: 606 mg/m ³ , 200 ppm
EL (Canada)	Short-term value: 250 ppm Long-term value: 200 ppm
EV (Canada)	Short-term value: 755 mg/m ³ , 250 ppm Long-term value: 605 mg/m ³ , 200 ppm
LMPE (Mexico)	Short-term value: 250 ppm Long-term value: 200 ppm

1332-58-7 Kaolin

PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³

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TLV (USA)	*total dust **respirable fraction Long-term value: 2* mg/m ³ E; as respirable fraction
EL (Canada)	Long-term value: 2 mg/m ³
EV (Canada)	Long-term value: 2(D) mg/m ³ respirable
LMPE (Mexico)	Long-term value: 2* mg/m ³ A4, *fracción respirable
1317-65-3 Limestone	
PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV (USA)	TLV withdrawn

Exposure controls

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes.

Avoid close or long term contact with the skin.

Engineering controls: No relevant information available.

Breathing equipment:

Wear appropriate NIOSH respirator when ventilation is inadequate and occupational exposure limits are exceeded.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Eye protection:



Safety glasses

Body protection: Protective work clothing

Limitation and supervision of exposure into the environment

No relevant information available.

Risk management measures No relevant information available.

9 Physical and chemical properties

Information on basic physical and chemical properties

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· Appearance:	
Form:	Paste
Color:	Tan.
· Odor:	Mild
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Melting point/Melting range:	Not determined.
· Boiling point/Boiling range:	>35 °C (>95 °F)
· Flash point:	<-13 °C (<8.6 °F)
· Flammability (solid, gaseous):	Not applicable.
· Auto-ignition temperature:	Not determined.
· Decomposition temperature:	Not determined.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits	
Lower:	Not determined.
Upper:	Not determined.
· Oxidizing properties:	Non-oxidizing.
· Vapor pressure:	Not determined.
· Density:	
Relative density:	1.12
Vapor density:	Not determined.
Evaporation rate:	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Other information	No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** Keep away from heat and direct sunlight.
- **Possibility of hazardous reactions**
 - Highly flammable liquid and vapor.
 - Reacts with strong alkali.
 - Reacts with strong acids and oxidizing agents.
 - Used empty containers may contain product gases which form explosive mixtures with air.
 - Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomized.

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(Cont'd. of page 6)

Toxic fumes may be released if heated above the decomposition point.

- **Conditions to avoid** Excessive heat.
- **Incompatible materials** Oxidizers, strong bases, strong acids
- **Hazardous decomposition products**
Carbon monoxide and carbon dioxide
Hydrocarbons

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** Slight irritant effect on skin and mucous membranes.
- **On the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

• IARC (International Agency for Research on Cancer):

None of the ingredients are listed.

• NTP (National Toxicology Program):

None of the ingredients are listed.

• OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients are listed.

• Probable route(s) of exposure:

Ingestion.
Inhalation.
Eye contact.
Skin contact.

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** May cause drowsiness or dizziness.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:** Avoid release to the environment.
- **Other adverse effects** No relevant information available.

(Cont'd. on page 8)

Safety Data Sheet

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13 Disposal considerations

· Waste treatment methods

· Recommendation:

Can be disposed of with household garbage after solidification following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

· Uncleaned packagings

· Recommendation: Disposal must be made according to official regulations.

14 Transport information

· UN-Number

· DOT, ADR/RID/ADN, IMDG, IATA UN1133

· UN proper shipping name

· DOT, IATA Adhesives
· ADR/RID/ADN, IMDG ADHESIVES

· Transport hazard class(es)

· DOT



· Class 3
· Label 3

· ADR/RID/ADN



· Class 3 (F1)
· Label 3

· IMDG, IATA



· Class 3
· Label 3

· Packing group

· DOT, ADR/RID/ADN, IMDG, IATA II

· Environmental hazards

(Cont'd. on page 9)

Safety Data Sheet

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Revision: April 23, 2019

Trade name: HA19-Z

(Cont'd. of page 8)

• Marine pollutant: No

• Special precautions for user Warning: Flammable liquids

• Danger code (Kemler): 33

• EMS Number: F-E,S-D

• Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

• Transport/Additional information:

• DOT



Limited Quantity for packages less than 30 kg gross and inner packagings less than 5 L each.

• ADR/RID/ADN



Limited Quantity for packages less than 30 kg gross and inner packagings less than 5 L each.

• IMDG



Limited Quantity for packages less than 30 kg gross and inner packagings less than 5 L each.

• IATA



Limited Quantity for packages less than 30 kg gross and inner packagings less than 0.5 L each / 1 L net.

15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture

• United States (USA)

• SARA

• Section 302 (extremely hazardous substances):

None of the ingredients are listed.

• Section 355 (extremely hazardous substances):

None of the ingredients are listed.

• Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

• TSCA (Toxic Substances Control Act)

All ingredients are listed or exempt.

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Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

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• **Proposition 65 (California)**

• **Chemicals known to cause cancer:**

None of the ingredients are listed.

• **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

• **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

• **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

• **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

• **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

• **Canadian Domestic Substances List (DSL): (Substances not listed.)**

All ingredients are listed or exempt.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

OSHA: Occupational Safety & Health Administration

Flam. Liq. 2: Flammable liquids – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• **Sources**

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

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Article Information Sheet

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This Article Information Sheet is provided as a courtesy in response to a customer request. A Safety Data Sheet (SDS) has not been prepared for these product(s) because they are articles. Articles are not subject to the Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1910.1200(b)(6)(v)). As defined in this standard: "Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical or health risk to employees.

Document Group: 16-1918-8
Issue Date: 12/11/14

Version Number: 2.00
Supersedes Date: Initial Issue

SECTION 1: Identification

1.1. Product identifier

3M(TM) Fire Barrier Duct Wrap 15A, 3M(TM) Fire Barrier Duct Wrap 20A, 3M(TM) Fire Barrier Duct Wrap Collar 20A, 3M(TM) Fire Barrier Plenum Wrap 5A

Product Identification Numbers

98-0400-5495-3, 98-0400-5496-1, 98-0400-5497-9, 98-0400-5498-7, 98-0400-5499-5, 98-0400-5500-0, 98-0400-5501-8, 98-0400-5502-6, 98-0400-5522-4, 98-0400-5527-3, 98-0400-5530-7, 98-0400-5531-5, 98-0400-5532-3, 98-0400-5533-1, 98-0400-5534-9, 98-0400-5535-6, 98-0400-5536-4, 98-0400-5537-2, 98-0400-5564-6, 98-0400-5565-3, 98-0400-5591-9, 98-0400-5592-7

1.2. Recommended use and restrictions on use

Recommended use

Passive Fire Protection

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Vitreous Silicate	65997-17-3	75 - 85
Continuous Filament Glass Fiber	65997-17-3	15 - 20
Aluminum Foil	7429-90-5	1 - 3

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

No need for first aid is anticipated.

Skin Contact:

No need for first aid is anticipated.

Eye Contact:

No need for first aid is anticipated.

If Swallowed:

No need for first aid is anticipated.

SECTION 5: Fire-fighting measures

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

6.2. Environmental precautions

Not applicable.

6.3. Methods and material for containment and cleaning up

Not applicable.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

7.2. Conditions for safe storage including any incompatibilities

No special storage requirements

SECTION 8: Exposure controls/personal protection

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions. No engineering controls or personal protective equipment (PPE) are necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Odor, Color, Grade:	Grey-green, odorless material with a wool type appearance.
Odor threshold	Not Applicable
Melting point	Not Applicable
Flash Point	Not Applicable
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Specific Gravity	2.5 - 3.0 [Ref Std: WATER=1]
Solubility in Water	Negligible
Solubility- non-water	Not Applicable
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	Not Applicable
Decomposition temperature	Not Applicable
Volatile Organic Compounds	0 % weight
Percent volatile	0 %
VOC Less H2O & Exempt Solvents	0 g/l

SECTION 10: Stability and reactivity

This material is considered to be non reactive under normal use conditions.

SECTION 11: Toxicological information

Inhalation:

No health effects are expected

Skin Contact:

No health effects are expected

Eye Contact:

No health effects are expected

Ingestion:

No health effects are expected

Additional Information:

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

SECTION 12: Ecological information

This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

SECTION 13: Disposal considerations

Dispose of contents/container in accordance with the local/regional/national/international regulations.

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory requirements.

For additional regulatory information on this product, refer to www.3M.com/regs.

SECTION 16: Other information

NFPA Hazard Classification

Health: 0 Flammability: 0 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 0 Flammability: 0 Physical Hazard: 0 Personal Protection: A

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Supersedes Date: Initial Issue

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SDS No. M0001

SAFETY DATA SHEET

Effective Date: 02/12/2015

1. IDENTIFICATION

(a) Product identifier used on the label **FIBERFRAX® CERAMIC FIBER PRODUCTS**

(b) Other means of identification

FIBERS

FIBERFRAX® HIGH PURITY FIBERS: HP-ODB; Module Trim; MT-HP; HP-Chopped; H Bulk; Regular Bulk, Spun Bulk, Fiberfrax FPP Fiber.

FIBERFRAX® 6000 SERIES FIBERS: All bulk fibers from 6000-AAA to 6100-ZZZ, 6900-70A to 6900-99Z.

FIBERFRAX® 7000 SERIES FIBERS: 7000-AA to 7100-ZZ.

FIBERFRAX® MILLED FIBERS: EF-119; HP Ball Milled A; HP Ball Milled B; HP Ball Milled C/D

FIBERFRAX® HIGH INDEX FIBERS: W-657; W-707; W-758; HS-95C; MX-135-CW; MX-400-CW; HS-70; HS-70C.

FIBERFRAX® HSA™ FIBERS: HSA-K; HSA-HP.

FIBERFRAX® KAOLIN FIBERS: K-Chopped; KMTX; MT; MTX; MT-T; MX-150.

BLANKETS

Durablanket® AC; Durablanket® HP; Durablanket® HP-S; Durablanket® S; Durablanket® Strip; Tank Car Insulation; TCB; QSB600; QSB800; FIBERMAT®; LO-CON™ BLANKET, Fiberfrax® SP Mat

PAPERS

FIBERFRAX® BINDERLESS PAPERS: 972-AH; 972-FH; 972-JH; 882-FH; 882-JH; HSA-F without binder; HSA-J without binder.

(c) Recommended use of the chemical and restrictions on use

- **Primary Use:** Refractory Ceramic Fiber (RCF) materials are used primarily in industrial high temperature insulating applications. Examples include heat shields, heat containment, gaskets, expansion joints, industrial furnaces, ovens, kilns, boilers and other process equipment at applications up to 1400°C. RCF based products are not intended for direct sale to the general public. While RCFs are used in the manufacture of some consumer products, such as catalytic converter mats and wood burning stoves, the materials are contained, encapsulated, or bonded within the units.
- **Secondary Use:** Conversion into wet and dry mixtures and articles (refer to section 8).
- **Tertiary Use:** Installation, removal (industrial and professional) / Maintenance and service life (industrial and professional) (refer to section 8).

Uses Advised Against
Spraying of dry product.

d) Name, address, and telephone number

Unifrax I LLC
600 Riverwalk Parkway, Suite 120
Tonawanda, NY 14150

Product Stewardship Information Hotline
1-800-322-2293 (Monday - Friday 8:00 a.m. - 4:30 p.m. EST)

For additional SDSs, visit our web page, <http://www.unifrax.com> or call Unifrax Customer Service at (716) 768-6500

(e) Emergency Phone
Number:

CHEMTREC will provide assistance for chemical emergencies. Call 1-800-424-9300

2. HAZARDS IDENTIFICATION

(a) Classification of the chemical in accordance with paragraph (d) of §1910.1200

The U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS) 2012 indicates that IARC Group 2B corresponds to OSHA HCS 2012 Category 2 carcinogen classification (see, e.g., §1910.1200, Appendix F, Part D).

(b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200

Under OSHA HCS 2012, RCF is classified as a category 2 carcinogen.

Hazard Pictogram



Signal Word
Warning

Hazard Statements
Suspected of causing cancer by inhalation.

Precautionary statements
Do not handle until all safety instructions have been read and understood.
Use respiratory protection as required; see section 8 of the Safety Data Sheet.
If concerned about exposure, get medical advice.
Store in a manner to minimize airborne dust.
Dispose of waste in accordance with local, state and federal regulations.

Supplementary Information
May cause temporary mechanical irritation to exposed eyes, skin or respiratory tract.
Minimize exposure to airborne dust.

(c) Describe any hazards not otherwise classified that have been identified during the classification process

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure.
These effects are usually temporary.

(d) Mixture rule

Not applicable.

3. COMPOSITION / INFORMATION ON INGREDIENTS

(a) Chemical and (b) Common Name
Refractories, Fibers, Aluminosilicate

(c) CAS Number
142844-00-6

% BY WEIGHT
100

***Synonyms:** RCF, ceramic fiber, Alumino Silicate Wool (ASW), synthetic vitreous fiber (SVF), man-made vitreous fiber

(MMVF), man-made mineral fiber (MMMF), high temperature insulation wool (HTIW)

(d) Impurities and stabilizing additives

Not applicable.

4. FIRST AID MEASURES

(a) Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion

SKIN

Handling of this material may generate mild mechanical temporary skin irritation. If this occurs, rinse affected areas with water and wash gently. Do not rub or scratch exposed skin.

EYES

In case of eye contact flush abundantly with water; have eye bath available. Do not rub eyes.

NOSE AND THROAT

If these become irritated move to a dust free area, drink water and blow nose.
If symptoms persist, seek medical advice.

(b) Most important symptoms/effects, acute and delayed

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure.
These effects are usually temporary.

(c) Indication of immediate medical attention and special treatment needed, if necessary

NOTES TO PHYSICIANS

Skin and respiratory effects are the result of temporary, mild mechanical irritation; fiber exposure does not result in allergic manifestations.

5. FIRE FIGHTING MEASURES

(a) Suitable (and unsuitable) extinguishing media

Use extinguishing agent suitable for surrounding combustible materials.

(b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Non-combustible products, class of reaction to fire is zero.
Packaging and surrounding materials may be combustible.

(c) Special protective equipment and precautions for fire-fighters

NFPA Codes: Flammability: 0 Health: 1 Reactivity: 0 Special: 0

6. ACCIDENTAL RELEASE MEASURES

(a) Personal precautions, protective equipment, and emergency procedures

Minimize airborne dust. Compressed air or dry sweeping should not be used for cleaning. See Section 8 "Exposure Controls / Personal Protection" for exposure guidelines.

(b) Methods and materials for containment and cleaning up

Frequently clean the work area with vacuum or wet sweeping to minimize the accumulation of debris. Do not use compressed air for clean-up.

EMPTY CONTAINERS

Product packaging may contain residue. Do not reuse.

7. HANDLING AND STORAGE

(a) Precautions for safe handling

Handle fiber carefully to minimize airborne dust. Limit use of power tools unless in conjunction with local exhaust ventilation. Use hand tools whenever possible.

(b) Conditions for safe storage, including any incompatibilities

Store in a manner to minimize airborne dust.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

(a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available

<u>Components</u>	<u>OSHA PEL</u>	<u>NIOSH REL</u>	<u>ACGIH TLV</u>	<u>MANUFACTURER REG</u>
Refractory Ceramic Fiber (RCF)	None established*	0.5 f/cc, 8-hr. TWA	0.2 f/cc TLV, 8-hr. TWA	0.5 f/cc, 8-hr. TWA

*Except for the state of California, where the PEL for RCF is 0.2 f/cc 8-hr TWA, there is no specific regulatory standard for RCF in the U.S. OSHA's "Particulate Not Otherwise Regulated (PNOR)" standard [29 CFR 1910.1000, Subpart Z, Air Contaminants] applies generally - Total Dust Total Dust 15 mg/m³; Respirable Fraction 5 mg/m³.

**In the absence of an OSHA PEL, HTIW Coalition has adopted a recommended exposure guideline (REG), as measured under NIOSH Method 7400 B. For further information on the history and development of the REG see "Rationale for the Recommended Exposure Guideline" at page 34 of the HTIW Coalition Product Stewardship Program http://www.htiwcoalition.org/documents/PSP_2012.pdf.

OTHER OCCUPATIONAL EXPOSURE LEVELS (OEL)

RCF-related occupational exposure limits vary internationally. Regulatory OEL examples include: California, 0.2 f/cc; Canadian provincial OELs ranging from 0.2 to 1.0 f/cc. The objectives and criteria underlying each of these OEL decisions also vary. The evaluation of occupational exposure limits and determining their relative applicability to the workplace is best performed, on a case-by-case basis, by a qualified Industrial Hygienist.

(b) Appropriate engineering controls

Use engineering controls such as local exhaust ventilation, point of generation dust collection, down draft work stations, emission controlling tool designs, and materials handling equipment designed to minimize airborne fiber emissions.

(c) Individual protection measures, such as personal protective equipment

Skin Protection

Wear personal protective equipment (e.g gloves), as necessary to prevent skin irritation. Washable or disposable clothing may be used. If possible, do not take unwashed clothing home. If soiled work clothing must be taken home, employees should be informed on best practices to minimize non-work dust exposure (e.g., vacuum clothes before leaving the work area, wash work clothing separately, and rinse washer before washing other household clothes).

Eye Protection

As necessary, wear goggles or safety glasses with side shields.

Respiratory Protection

When engineering and/or administrative controls are insufficient to maintain workplace concentrations below the 0.5 f/cc REG or a regulatory OEL, the use of appropriate respiratory protection, pursuant to the requirements of OSHA Standards 29 CFR 1910.134 and 29 CFR 1926.103, is recommended. A NIOSH certified respirator with a filter efficiency of at least 95% should be used. The 95% filter efficiency recommendation is based on NIOSH respirator selection logic sequence for exposure to manmade mineral fibers. Pursuant to NIOSH recommendations, N-95 respirators are appropriate for exposures up to 10 times the NIOSH Recommended Exposure Limit (REL). With respect to RCF, both the NIOSH REL and the industry REG have been set at 0.5 fibers per cubic centimeter of air (f/cm³). Accordingly, N-95 would provide the necessary protection for exposures up to 5 f/cm³. Further, the Respirator Selection Guide published by 3M Corporation, the primary respirator manufacturer, specifically recommends use of N-95 respirators for RCF exposures. In cases where exposures are known to be above 5.0 f/cm³, 8 hour TWA, a filter efficiency of 100% should be used. Other factors to consider are the NIOSH filter series N, R or P -- (N) Not resistant to oil, (R) Resistant to oil and (P) oil Proof. These recommendations are not designed to limit informed choices, provided that respiratory protection decisions comply with 29 CFR 1910.134.

The evaluation of workplace hazards and the identification of appropriate respiratory protection is best performed, on a case by case basis, by a qualified Industrial Hygienist.

Other Information

- Concentrations based upon an eight-hour time weighted average (TWA) as determined by air samples collected and analyzed pursuant to NIOSH method 7400 (B) for airborne fibers.
- The manufacturer recommends the use of a full-facepiece air purifying respirator equipped with an appropriate particulate filter cartridge during furnace tear-out events and the removal of used RCF to control exposures to airborne fiber and the potential presence of crystalline silica.

9. PHYSICAL AND CHEMICAL PROPERTIES

(a) Appearance	White, fibrous wool	(j) Upper/lower flammability or explosive limits	Not applicable
(b) Odor	Odorless	(k) Vapor pressure	Not applicable
(c) Odor threshold	Not applicable	(l) Vapor density	Not applicable
(d) pH	Not applicable	(m) Relative density	2.50 – 2.75
(e) Melting point	1760° C (3200° F)	(n) Solubility	Insoluble

(f) Initial boiling point and boiling range	Not applicable	(o) Partition coefficient: n-octanol/water	Not applicable
(g) Flash point	Not applicable	(p) Auto-ignition temperature	Not applicable
(h) Evaporation rate	Not applicable	(q) Decomposition temperature	Not applicable
(i) Flammability	Not applicable	(r) Viscosity	Not applicable

10. STABILITY AND REACTIVITY

(a) Reactivity	RCF is non-reactive.
(b) Chemical stability	As supplied RCF is stable and inert.
(c) Possibility of hazardous reactions	None
(d) Conditions to avoid	Please refer to handling and storage advice in Section 7
(e) Incompatible materials	None
(f) Hazardous decomposition products	None.

11. TOXICOLOGICAL INFORMATION

For more details on scientific publications referenced in this SDS see <http://www.htiwcoalition.org/publications.html>

(a) through (d)

TOXICOKINETICS, METABOLISM AND DISTRIBUTION

Basic Toxicokinetics

Exposure is predominantly by inhalation or ingestion. Man-made vitreous fibers of a similar size to RCF have not been shown to migrate from the lung and/or gut and do not become located in other organs of the body.

Human Toxicological Data/Epidemiology Data

In order to determine possible human health effects following RCF exposure, the University of Cincinnati has been conducting medical surveillance studies on RCF workers in the U.S.A; this epidemiological study has been ongoing for 25 years and medical surveillance of RCF workers continues. The Institute of Occupational Medicine (IOM) has conducted medical surveillance studies on RCF workers in European manufacturing facilities.

Pulmonary morbidity studies among production workers in the U.S.A. and Europe have demonstrated an absence of interstitial fibrosis. In the European study a reduction of lung capacity among smokers has been identified, however, based on the latest results from a longitudinal study of workers in the U.S.A. with over 17-year follow-up, there has been no accelerated rate of loss of lung function (McKay et al. 2011).

A statistically significant correlation between pleural plaques and cumulative RCF exposure was evidenced in the U.S.A. longitudinal study.

The U.S.A. mortality study showed no excess mortality related to all deaths, all cancer, or malignancies or diseases of the respiratory system including mesothelioma (LeMasters et al. 2003).

Information on Toxicological Effects

- *Acute toxicity: short term inhalation*
No data available: Short term tests have been undertaken to determine fiber (bio) solubility rather than toxicity; repeat dose inhalation tests have been undertaken to determine chronic toxicity and carcinogenicity.
- *Acute toxicity: oral*
No data available: Repeated dose studies have been carried out using gavage. No effect was found.

- *Skin corrosion/irritation*
Not a chemical irritant according to test method OECD no. 404.
- *Serious eye damage/irritation*
Not possible to obtain acute toxicity information due to the morphology and chemical inertness of the substance.
- *Respiratory or skin sensitization*
No evidence from human epidemiological studies of any respiratory or skin sensitization potential
- *Germ cell mutagenicity/genotoxicity*
Method: In vitro micronucleus test
Species: Hamster (CHO)
Dose: 1-35 mg/ml
Routes of administration: In suspension
Results: Negative
- *Carcinogenicity*
Method: Inhalation, multi-dose
Species: Rat
Dose: 3 mg/m³, 9 mg/m³ and 16 mg/m³
Routes of administration: Nose only inhalation
Results: Fibrosis just reached significant levels at 16 and 9 mg/m³ but not at 3 mg/m³. None of the parenchymal tumor incidences were higher than the historical control values for this strain of animal.

Method: Inhalation, single dose

Species: Rat

Dose: 30 mg/m³

Routes of administration: Nose only inhalation

Results: Rats were exposed to a single concentration of 200 WHO fibers/ml specially prepared RCF for 24 months. High incidence of exposure-related pulmonary neoplasms (bronchoalveolar adenomas and carcinomas) was observed. A small number of mesotheliomas were observed in each of the fiber exposure groups (Mast et al 1995a).

Method: Inhalation, single dose

Species: Hamster

Dose: 30 mg/m³

Routes of administration: Nose only inhalation

Results: Hamsters were exposed to a single concentration of 260 WHO fibers/ml specially prepared RCF for 18 months and developed lung fibrosis, a significant number of pleural mesotheliomas (42/102) but no primary lung tumors (McConnell et al 1995).

Method: Inhalation, single dose

Species: Rat

Dose: RCF1: 130 F/ml and 50 mg/m³ (25% of non fibrous particles)

RCF1a: 125 F/ml and 26 mg/m³ (2% of non fibrous particles)

Routes of administration: Nose only inhalation

Results: Rats were exposed to RCF1 and RCF1a for 3 weeks. The objective of the study was to compare lung retention and biological effects of the original RCF1 compared to RCF1a. The main difference of these 2 samples was the non-fibrous particle content of respectively 25% versus 2%. The post treatment observation was 12 months. Alveolar clearance was barely retarded after RCF1A exposure. After RCF1 exposure, however, a severe retardation of clearance was observed. (Bellmann et al 2001).

After intraperitoneal injection of ceramic fibers into rats in three experiments (Smith et al 1987, Pott et al 1987, Davis et al 1984), mesotheliomas were found in the abdominal cavity in two studies, while the third report (Pott et al 1987) had incomplete histopathology. Only a few mesotheliomas were found in the abdominal cavity of hamsters after intraperitoneal injection in one experiment (Smith et al 1987). However, the ceramic fibers tested were of relatively large diameter. When rats and hamsters were exposed via intraperitoneal injection, tumor incidence was related to fiber length and dose (Smith et al 1987, Pott et al 1987, Miller et al 1999, Pott et al 1989). (From SCOEL publication (EU Scientific Committee on Occupational Exposure Limits) SCOEL/SUM/165, September 2011).

- **Reproductive toxicity**
Method: Gavage
Species: Rat
Dose: 250mg/kg/day
Routes of administration: Oral
Results: No effects were seen in an OECD 421 screening study. There are no reports of any reproductive toxic effects of mineral fibers. Exposure to these fibers is via inhalation and effects seen are in the lung. Clearance of fibers is via the gut and the feces, so exposure of the reproductive organs is extremely unlikely.
- **STOT-Single exposure**
Not applicable
- **STOT-Repeated exposure**
Not applicable
- **Aspiration hazard**
Not applicable

See the following review publications for a summary and discussion:

Interpretation of these animal experiments is complex and there is not complete agreement amongst scientists internationally. A summary of the evidence relating to RCF carcinogenicity in vivo can be found in SCOEL/SUM/165 and in Utell and Maxim 2010.

Other information

Numerous studies indicate the relevance of biopersistence as a determinant of toxic effects of fiber exposure. (Maxim et al 2006).

Irritant Properties

Negative results have been obtained in animal studies (EU method B 4) for skin irritation. Inhalation exposures using the nose only route produce simultaneous heavy exposures to the eyes, but no reports of excess eye irritation exist. Animals exposed by inhalation similarly show no evidence of respiratory tract irritation.

Human data confirm that only mechanical irritation, resulting in itching, occurs in humans. Screening at manufacturers' plants in the UK has failed to show any human cases of skin conditions related to fiber exposure.

(e) International Agency for Research on Cancer and National Toxicology Program

IARC, in 1988, Monograph v.43 (and later reaffirmed in 2002, v.81), classified RCF as possibly carcinogenic to humans (group 2B). IARC evaluated the possible health effects of RCF as follows:

- There is inadequate evidence in humans for the carcinogenicity of RCF.
- There is sufficient evidence in experimental animals for the carcinogenicity of RCF.

The Annual Report on Carcinogens (latest edition), prepared by NTP, classified respirable RCF as "reasonably anticipated" to be a carcinogen).

Not classified by OSHA.

12. ECOLOGICAL INFORMATION (Non-mandatory)

(a) Ecotoxicity (aquatic and terrestrial, where available)	No known aquatic toxicity.
(b) Persistence and degradability	These products are insoluble materials that remain stable over time and are chemically identical to inorganic compounds found in the soil and sediment they remain inert in the natural environment.

(c) Bioaccumulative potential	No bioaccumulative potential.
(d) Mobility in soil	No mobility in soil.
(e) Other adverse effects (such as hazardous to the ozone layer)	No adverse effects of this material on the environment are anticipated.

13. DISPOSAL CONSIDERATIONS (Non-mandatory)

WASTE MANAGEMENT

To prevent waste materials from becoming airborne during waste storage, transportation and disposal, a covered container or plastic bagging is recommended.

DISPOSAL

This product, as manufactured, is not classified as a hazardous waste according to Federal regulations (40 CFR 261). Any processing, use, alteration or chemical additions to the product, as purchased, may alter the disposal requirements. Under Federal regulations, it is the waste generator's responsibility to properly characterize a waste material, to determine if it is a "hazardous" waste. Check local, regional, state or provincial regulations to identify all applicable disposal requirements.

14. TRANSPORT INFORMATION (Non-mandatory)

(a) UN number	Not Applicable
(b) UN proper shipping name	Not Applicable
(c) Transport hazard class(es)	Not Applicable
(d) Packing group, if applicable	Not Applicable
(e) Environmental hazards (e.g., Marine pollutant (Yes/No))	Not a marine pollutant
(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)	Not Applicable
(g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises	Not Applicable

Canadian TDG Hazard Class & PIN: Not regulated

Not classified as dangerous goods under ADR (road), RID (train) or IMDG (ship).

15. REGULATORY INFORMATION (Non-mandatory)

UNITED STATES REGULATIONS

EPA	Superfund Amendments and Reauthorization Act (SARA) Title III - this product does not contain any substances reportable under Sections 302, 304, 313, (40 CFR 372). Sections 311 and 312 (40 CFR 370) apply (delayed hazard). Hazard Categories: Immediate Hazard – No Delayed Hazard – Yes Fire Hazard – No Pressure Hazard – No Reactivity Hazard – No Toxic Substances Control Act (TSCA) - RCF is not required to be listed on the TSCA inventory. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Clean Air Act (CAA) - this product contains fibers with an average diameter greater than one micron and thus is not considered a hazardous air pollutant.
OSHA	Comply with Hazard Communication Standards 29 CFR 1910.1200 and 29 CFR 1926.59

California	and the Respiratory Protection Standards 29 CFR 1910.134 and 29 CFR 1926.103. "Ceramic fibers (airborne particles of respirable size)" is listed in Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986 as a chemical known to the State of California to cause cancer.
Other States	RCF products are not known to be regulated by states other than California; however, state and local OSHA and EPA regulations may apply to these products. If in doubt, contact your local regulatory agency.

INTERNATIONAL REGULATIONS

Canada **Canadian Workplace Hazardous Materials Information System (WHMIS)** – Classified as Class D2A – Materials Causing Other Toxic Effects
Canadian Environmental Protection Act (CEPA) - All substances in this product are listed, as required, on the Domestic Substance List (DSL)

Europe **Integration of RCF into ANNEX XV of the REACH Regulation**

RCF is classified under the CLP (classification, labelling and packaging of substances and mixtures) regulation as a category 1B carcinogen. On January 13, 2010 the European Chemicals Agency (ECHA) updated the candidate list for authorization (Annex XV of the REACH regulation) and added 14 new substances in this list including aluminosilicate refractory ceramic fibers.

As a consequence, EU (European Union) or EEA (European Economic Area) suppliers of articles which contain aluminosilicate refractory ceramic fibers in a concentration above 0.1% (w/w) have to provide sufficient information, available to them, to their customers or upon requests to a consumer within 45 days of the receipt of the request. This information must ensure safe use of the article, and as minimum contains the name of the substance.

16. OTHER INFORMATION

Product Stewardship Program

Unifrax LLC has established a program to provide customers with up-to-date information regarding the proper use and handling of refractory ceramic fiber. In addition, Unifrax has also established a program to monitor airborne fiber concentrations at customer facilities. If you would like more information about this program, please call the Product Stewardship Information Hotline at 1-800-322-2293.

In 2002, OSHA endorsed a five year voluntary product stewardship program called PSP 2002. On May 23, 2007, HTIW Coalition's predecessor, RCFC, and its member companies renewed this voluntary product stewardship agreement with OSHA. On April 16, 2012, HTIW Coalition renewed this agreement.

This new five year program, called PSP 2012, continues and builds upon the earlier programs. PSP 2012 is a highly acclaimed, multifaceted strategic risk management initiative designed specifically to reduce workplace exposures to refractory ceramic fiber (RCF). For more information regarding PSP 2012, please visit <http://www.htiwcoalition.org>

Hazardous Materials Identification System (HMIS) Hazard Rating

HMIS Health	1* (* denotes potential for chronic effects)
HMIS Flammability	0
HMIS Reactivity	0
HMIS Personal Protective Equipment	X (To be determined by user)

Additional Information on After Service Material

As produced, all RCF fibers are vitreous (glassy) materials which do not contain crystalline silica. Continued exposure to elevated temperatures may cause these fibers to devitrify (become crystalline). The first crystalline formation (mullite) begins to occur at approximately 985° C (1805° F). Crystalline phase silica may begin to form at

approximately 1100° C (2012° F). When the glass RCF fibers devitrify, they form a mixed mineral crystalline silica containing dust. The crystalline silica is trapped in grain boundaries within a matrix predominately consisting of mullite. The occurrence and extent of crystalline phase formation is dependent on the duration and temperature of exposure, fiber chemistry and/or the presence of fluxing agents or furnace contaminants. The presence of crystalline phases can be confirmed only through laboratory analysis of the "hot face" fiber.

IARC's evaluation of crystalline silica states "Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)" and additionally notes "carcinogenicity in humans was not detected in all industrial circumstances studied." IARC also studied mixed mineral crystalline silica containing dusts such as coal dusts (containing 5 – 15 % crystalline silica) and diatomaceous earth without seeing any evidence of disease. (IARC Monograph Vol. 68, 1997). NTP lists all polymorphs of crystalline silica amongst substances which may "reasonably be anticipated to be carcinogens".

IARC and NTP did not evaluate after-service RCF, which may contain various crystalline phases. However, an analysis of after-service RCF samples obtained pursuant to an exposure monitoring agreement with the USEPA, found that in the furnace conditions sampled, most did not contain detectable levels of crystalline silica. Other relevant RCF studies found that (1) simulated after-service RCF showed little, or no, activity where exposure was by inhalation or by intraperitoneal injection; and (2) after-service RCF was not cytotoxic to macrophage-like cells at concentrations up to 320 micrograms/cm² - by comparison, pure quartz or cristobalite were significantly active at much lower levels (circa 20 micrograms/cm²).

DEFINITIONS

ACGIH:	American Conference of Governmental Industrial Hygienists
ADR:	Carriage of Dangerous Goods by Road (International Regulation)
CAA:	Clean Air Act
CAS:	Chemical Abstracts Service
CERCLA:	Comprehensive Environmental Response, Compensation and Liability Act
DSL:	Domestic Substances List
EPA:	Environmental Protection Agency
EU:	European Union
f/cc:	Fibers per cubic centimeter
HEPA:	High Efficiency Particulate Air
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods Code
mg/m³:	Milligrams per cubic meter of air
mmpcf:	Million particles per cubic meter
NFPA:	National Fire Protection Association
NIOSH:	National Institute for Occupational Safety and Health
OSHA:	Occupational Safety and Health Administration
29 CFR 1910.134 & 1926.103:	OSHA Respiratory Protection Standards
29 CFR 1910.1200 & 1926.59:	OSHA Hazard Communication Standards
PEL:	Permissible Exposure Limit (OSHA)
PIN:	Product Identification Number
PNOC:	Particulates Not Otherwise Classified
PNOR:	Particulates Not Otherwise Regulated
PSP:	Product Stewardship Program
RCRA:	Resource Conservation and Recovery Act
REL:	Recommended Exposure Limit (NIOSH)
RID:	Carriage of Dangerous Goods by Rail (International Regulations)

SARA:	Superfund Amendments and Reauthorization Act
SARA Title III:	Emergency Planning and Community Right to Know Act
SARA Section 302:	Extremely Hazardous Substances
SARA Section 304:	Emergency Release
SARA Section 311:	MSDS/List of Chemicals and Hazardous Inventory
SARA Section 312:	Emergency and Hazardous Inventory
SARA Section 313:	Toxic Chemicals and Release Reporting
STEL:	Short Term Exposure Limit
SVF:	Synthetic Vitreous Fiber
TDG:	Transportation of Dangerous Goods
TLV:	Threshold Limit Value (ACGIH)
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted Average
WHMIS:	Workplace Hazardous Materials Information System (Canada)

Revision Summary: Updated SDS to align with OSHA HCS 2012. Replaces 09/24/2014 SDS.

Revision Date: 02/12/2015

SDS Prepared By: UNIFRAX RISK MANAGEMENT DEPARTMENT

DISCLAIMER

The information presented herein is presented in good faith and believed to be accurate as of the effective date of this Safety Data Sheet. Employers may use this SDS to supplement other information gathered by them in their efforts to assure the health and safety of their employees and the proper use of the product. This summary of the relevant data reflects professional judgment; employers should note that information perceived to be less relevant has not been included in this SDS. Therefore, given the summary nature of this document, Unifrax I LLC does not extend any warranty (expressed or implied), assume any responsibility, or make any representation regarding the completeness of this information or its suitability for the purposes envisioned by the user.



SAFETY DATA SHEET

SDS No. M0200

Effective Date: 02/02/2015

1. IDENTIFICATION

- (a) Product identifier used on the label FYREWRAP® DUCT INSULATION
FYREWRAP® ELITE™ 1.5 DUCT INSULATION
FYREWRAP® 1.5 DUCT INSULATION
FYREWRAP® EZ 1.5 DUCT INSULATION
FYREWRAP® MAX 2.0 DUCT INSULATION
- (b) Other means of identification ALKALINE EARTH SILICATE WOOL (AES), Synthetic vitreous fiber (SVF), man-made vitreous fiber (MMVF), man-made mineral fiber (MMMF), alkaline-earth-silicate fiber, magnesium silicate fiber, high temperature insulation wool (HTIW)
- (c) Recommended use of the chemical and restrictions on use Application as passive fire protection systems. (Please refer to specific technical data sheet for more information).
- (d) Name, address, and telephone number Unifrax I LLC
600 Riverwalk Parkway, Suite 120
Tonawanda, NY 14150

Product Stewardship Information Hotline
1-800-322-2293 (Monday - Friday 8:00 a.m. - 4:30 p.m. EST)

For additional SDSs, visit our web page, <http://www.unifrax.com>, or call Unifrax Customer Service at (716) 768-6500
- (e) Emergency phone number CHEMTREC will provide assistance for chemical emergencies. Call 1-800-424-9300

2. HAZARDS IDENTIFICATION

- (a) Classification of the chemical in accordance with paragraph (d) of §1910.1200

AES wools are not classified following self-classification guidelines of the OSHA Hazard Communication Standard (HCS) 2012. The assessment of all available toxicological data on AES during the classification process resulted in a "no classification" conclusion.

- (b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200

Not applicable.

- (c) Describe any hazards not otherwise classified that have been identified during the classification process

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure.
These effects are usually temporary.
Minimize exposure to airborne dust.

(d) Mixture rule not applicable

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>(a) Chemical and (b) Common Name</u>	<u>(c) CAS Number</u>	<u>% BY WEIGHT</u>
STANDARD PRODUCT FORM Amorphous alkaline-earth-silicate (calcium-magnesium-silicate) wool (SiO ₂ 62-67 %, CaO 28-33 %, MgO 1-6 %, trace elements 0-1%)	436083-99-7	100
ENCAPSULATED PRODUCT FORM Amorphous alkaline-earth-silicate (calcium-magnesium-silicate) wool (SiO ₂ 62-67 %, CaO 28-33 %, MgO 1-6 %, trace elements 0-1%)	436083-99-7	96-98
Aluminum foil with fiberglass reinforcement and inorganic adhesive.	N/A (ARTICLE)	2-4

(See Section 8 "Exposure Controls / Personal Protection" for exposure guidelines)

4. FIRST AID MEASURES

(a) Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion

SKIN

Handling of this material may generate mild mechanical temporary skin irritation. If this occurs, rinse affected areas with water and wash gently. Do not rub or scratch exposed skin.

EYES

In case of eye contact flush abundantly with water, have eye bath available. Do not rub eyes.

NOSE AND THROAT

If these become irritated move to a dust free area, drink water and blow nose.
If symptoms persist, seek medical advice.

(b) Most important symptoms/effects, acute and delayed

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure.
These effects are usually temporary.

(c) Indication of immediate medical attention and special treatment needed, if necessary

NOTES TO PHYSICIANS

Skin and respiratory effects are the result of temporary, mild mechanical irritation; fiber exposure does not result in allergic manifestations.

5. FIRE FIGHTING MEASURES

(a) Suitable (and unsuitable) extinguishing media and

(b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Non-combustible products, class of reaction to fire is zero.

Packaging and surrounding materials may be combustible. Use extinguishing agent suitable for surrounding combustible materials.

(c) Special protective equipment and precautions for fire-fighters

NFPA Codes: Flammability: 0 Health: 1 Reactivity: 0 Special: 0

6. ACCIDENTAL RELEASE MEASURES

(a) Personal precautions, protective equipment, and emergency procedures

Minimize airborne dust. Compressed air or dry sweeping should not be used for cleaning. See Section 8 "Exposure Controls / Personal Protection" for exposure guidelines.

(b) Methods and materials for containment and cleaning up

Frequently clean the work area with HEPA filtered vacuum or wet sweeping to minimize the accumulation of debris. Do not use compressed air for clean-up.

7. HANDLING AND STORAGE

(a) Precautions for safe handling

Handle fiber carefully to minimize airborne dust. Limit use of power tools unless in conjunction with local exhaust ventilation. Use hand tools whenever possible.

(b) Conditions for safe storage, including any incompatibilities

Store in a manner to minimize airborne dust.

EMPTY CONTAINERS

Product packaging may contain residue. Do not reuse.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

- (a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available

COMPONENTS	OSHA PEL	ACGIH TLV	MANUFACTURER
Amorphous alkaline-earth-silicate (calcium-magnesium-silicate) wool	Particulates Not Otherwise Regulated (PNOR) : Total Dust -- 15 mg/m ³ . Respirable Fraction -- 5 mg/m ³ *	None established.	See below**

*There is no specific regulatory standard for INSULFRAX® in the U.S. OSHA's "Particulate Not Otherwise Regulated (PNOR)" standard [29 CFR 1910.1000, Subpart Z, Air Contaminants] applies generally; Total Dust 15 mg/m³; Respirable Fraction 5 mg/m³.

** As with most industrial materials, it is prudent to minimize unnecessary exposure to respirable dusts. Note that Industrial hygiene standards and occupational exposure limits differ between countries and local jurisdictions. Check with your employer to identify any "respirable dust", "total dust" or "fiber" exposure standards to follow in your area. If no regulatory dust or fiber control standard apply, a qualified industrial hygiene professional can assist with a specific evaluation of workplace conditions and the identification of appropriate respiratory protection practices. In the absence of other guidance, the supplier has found that it is generally feasible to control occupational fiber exposure to 1 f/cc or less.

(b) Appropriate engineering controls

Use engineering controls such as local exhaust ventilation, point of generation dust collection, down draft work stations, emission controlling tool designs, and materials handling equipment designed to minimize airborne fiber emissions.

(c) Individual protection measures, such as personal protective equipment

Skin Protection

Wear gloves, head coverings and full body clothing as necessary to prevent skin irritation. Washable or disposable clothing may be used. If possible, do not take unwashed clothing home. If soiled work clothing must be taken home, employers should ensure employees are thoroughly trained on the best practices to minimize non-work dust exposure (e.g., vacuum clothes before leaving the work area, wash work clothing separately, rinse washer before washing other household clothes, etc.).

Eye Protection

As necessary, wear goggles or safety glasses with side shields.

Respiratory Protection

When engineering and/or administrative controls are insufficient to maintain workplace concentrations below the applicable level, the use of appropriate respiratory protection, pursuant to the requirements of OSHA Standards 29 CFR 1910.134 and 29 CFR 1926.103, is recommended. A NIOSH certified respirator with a filter efficiency of at least 95% should be used. The 95% filter efficiency recommendation is based on NIOSH respirator selection logic sequence for exposure to particulates. Selection of filter efficiency (i.e. 95%, 99% or 99.97%) depends on how much filter leakage can be accepted and the concentration of airborne contaminants. Other factors to consider are the NIOSH filter series N, R or P. (N) Not resistant to oil, (R) Resistant to oil and (P) oil Proof. These recommendations are not designed to limit informed choices, provided that respiratory protection decisions comply with 29 CFR 1910.134.

The evaluation of workplace hazards and the identification of appropriate respiratory protection is best performed, on a case by case basis, by a qualified Industrial Hygienist.

9. PHYSICAL AND CHEMICAL PROPERTIES

(a) Appearance	White, fibrous wool	(j) Upper/lower flammability or explosive limits	Not applicable
(b) Odor	Odorless	(k) Vapor pressure	Not applicable
(c) Odor threshold	Not applicable	(l) Vapor density	Not applicable
(d) pH	Not applicable	(m) Relative density	2.60
(e) Melting point	1260° C (2300° F)	(n) Solubility	Insoluble
(f) Initial boiling point and boiling range	Not applicable	(o) Partition coefficient: n-octanol/water	Not applicable
(g) Flash point	Not applicable	(p) Auto-ignition temperature	Not applicable
(h) Evaporation rate	Not applicable	(q) Decomposition temperature	Not applicable

(l) Flammability

Not applicable

(r) Viscosity

Not applicable

10. STABILITY AND REACTIVITY

(a) Reactivity	AES is non-reactive.
(b) Chemical stability	As supplied AES is stable and inert.
(c) Possibility of hazardous reactions	None
(d) Conditions to avoid	Please refer to handling and storage advice in Section 7
(e) Incompatible materials	None
(f) Hazardous decomposition products	

11. TOXICOLOGICAL INFORMATION

(a) through (d)

Toxicological Data/Epidemiology Data

EPIDEMIOLOGY

This product has not been the subject of epidemiological study. Epidemiological studies related to other fiber chemistries of similar solubility have not identified a statistically significant incidence of exposure-related respiratory disease.

TOXICOLOGY

A review of available scientific literature suggests an inverse relationship between dissolution rate and potential health effects; i.e. the higher the dissolution rate of a fiber the lower its potential to produce health effects. The dissolution rate of INSULFRAX® fiber has been determined through standardized *in vitro* testing. The dissolution rate of INSULFRAX® fibers is higher than that of other fiber types that have been tested in chronic animal studies and did not produce respiratory disease.

This product possesses a fiber chemistry within the regulatory (European Commission Directive 97/69/EC) definition as a "man-made vitreous (silicate) fiber with random orientation with alkaline oxide and alkaline earth oxide ($\text{Na}_2\text{O} + \text{K}_2\text{O} + \text{CaO} + \text{MgO} + \text{BaO}$) content greater than 18% by weight". INSULFRAX® fibers have been tested pursuant to EU protocol ECB/TM/26, rev. 7, Nota Q, Directive 97/69/EC. The results for the short term biopersistence test by inhalation (IH test) was 7 days; well below the regulatory threshold of 10 days cited in Directive 97/69/EC. Based on testing results, INSULFRAX® based products are not regarded as potential carcinogens and they ARE EXEMPT from European classification as such. By virtue of these test results, these products ARE EXEMPT from European regulatory guidelines that require hazard warning labels with specific risk phrases citing respiratory disease potential. In addition, INSULFRAX® fibers have been tested in an independent laboratory, by intratracheal (IT test) instillation, under a protocol that was consistent with the requirements of the German Hazardous Substances Ordinance (BGI, I pp. 1782, 2049, Third Amendment, Appendix V, No. 7). The half-life clearance of INSULFRAX® fibers was 30 days; well below the applicable regulatory thresholds. Based on the IT test results, INSULFRAX® products ARE EXEMPT from the requirements of the German Ordinance.

Irritant Properties

The definition of "skin irritation" contained in the hazard communication standard, 29 CFR 1900.1200, Appendix A.2.1.1, is "the production of reversible damage to the skin following the application of a test substance for up to 4 hours." When tested using approved methods (for example EU Directive 67/548/EC, Annex V, Method B4), fibers contained in this material give negative results. The fiber contained in this product is an inert material which doesn't interact chemically with exposed skin. However, there is a possibility that exposure to this product may cause temporary mechanical irritation to the eyes, skin or respiratory tract (nose, throat, lungs). This temporary irritation can be mitigated with proper handling practices designed to limit exposure and the use of protective clothing (glasses, gloves, clothing).

(e) International Agency for Research on Cancer and National Toxicology Program

This product has not been specifically evaluated by any regulatory authority or other classification entity, such as the International Agency for Research on Cancer (IARC) or the National Toxicology Program (NTP).

12. ECOLOGICAL INFORMATION

(a) Ecotoxicity (aquatic and terrestrial, where available)	No known aquatic toxicity.
(b) Persistence and degradability	These products are insoluble materials that remain stable over time and are chemically identical to inorganic compounds found in the soil and sediment; they remain inert in the natural environment.
(c) Bioaccumulative potential	No bioaccumulative potential.
(d) Mobility in soil	No mobility in soil.
(e) Other adverse effects (such as hazardous to the ozone layer)	No adverse effects of this material on the environment are anticipated.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT

To prevent waste materials from becoming airborne during waste storage, transportation and disposal, a covered container or plastic bagging is recommended.

DISPOSAL

ISOFRAX® fiber, as manufactured, is not classified as a hazardous waste according to Federal regulations (40 CFR 261). Any processing, use, alteration or chemical additions to the product, as purchased, may alter the disposal requirements. Under Federal regulations, it is the waste generator's responsibility to properly characterize a waste material, to determine if it is a "hazardous" waste. Check local, regional, state or provincial regulations to identify all applicable disposal requirements.

EUROPEAN UNION

Waste from this product is not classified as "hazardous" or "special" under European Union regulations. Disposal is permitted at landfills licensed for industrial waste.

14. TRANSPORT INFORMATION

(a) UN number	Not Applicable
(b) UN proper shipping name	Not Applicable
(c) Transport hazard class(es)	Not Applicable
(d) Packing group, if applicable	Not Applicable
(e) Environmental hazards (e.g., Marine pollutant (Yes/No))	Not a marine pollutant
(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)	Not Applicable
(g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises	Not Applicable

Canadian TDG Hazard Class & PIN: Not regulated
Not classified as dangerous goods under ADR (road), RID (train) or IMDG (ship).

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS

- EPA:** **Superfund Amendments and Reauthorization Act (SARA)** Title III - This product does not contain any substances reportable under Sections 302, 304, 313, (40 CFR 372). Sections 311 and 312 (40 CFR 370) apply (delayed hazard).
Toxic Substances Control Act (TSCA) - All substances in this product are listed, as required, on the TSCA inventory.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the **Clean Air Act (CAA)** - ISOFRAX® contains fibers with an average diameter greater than one micron and thus is not considered a hazardous air pollutant.
- OSHA:** Comply with **Hazard Communication Standards** 29 CFR 1910.1200 and 29 CFR 1926.59 and the **Respiratory Protection Standards** 29 CFR 1910.134 and 29 CFR 1926.103.
- States:** INSULFRAX® products are not known to be regulated. However, state and local OSHA and EPA regulations may apply to these products. If in doubt, contact your local regulatory agency.

INTERNATIONAL REGULATIONS

- Canada:** **Canadian Workplace Hazardous Materials Information System (WHMIS):**
No Canadian Workplace Hazardous Materials Information System (WHMIS) categories apply to this product.
Canadian Environmental Protection Act (CEPA) - All substances in this product are listed, as required, on the Domestic Substance List (DSL)
- European Union:** **European Directive 97/69/EC** - By virtue of testing results, INSULFRAX® fiber has been exempted from classification and labeling as a potential carcinogen.

16. OTHER INFORMATION

PRODUCT STEWARDSHIP PROGRAM

Unifrax has established a program to provide customers with up-to-date information regarding the proper use and handling of fiber-based products, including INSULFRAX® THERMAL INSULATION PRODUCTS. In addition, Unifrax has also established a program to monitor airborne fiber concentrations at customer facilities. If you would like more information about this program, please call the Unifrax Product Stewardship Information Line at 1-800-322-2293.

The HTIW Coalition and the U.S. Occupational Safety and Health Administration (OSHA) are partners in PSP HTW, a comprehensive, multi-faceted risk management program designed to control and reduce workplace exposures to high temperature insulation wools (HTIW). For more information regarding PSP HTW, please visit <http://www.htiwcoalition.org>

DEFINITIONS

ACGIH:	American Conference of Governmental Industrial Hygienists
ADR:	Carriage of Dangerous Goods by Road (International Regulation)
CAA:	Clean Air Act
CAS:	Chemical Abstracts Service
CERCLA:	Comprehensive Environmental Response, Compensation and Liability Act
DSL:	Domestic Substances List
EPA:	Environmental Protection Agency
EU:	European Union
f/cc:	Fibers per cubic centimeter
HEPA:	High Efficiency Particulate Air

HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods Code
mg/m³:	Milligrams per cubic meter of air
mmpcf:	Million particles per cubic meter
NFPA:	National Fire Protection Association
NIOSH:	National Institute for Occupational Safety and Health
OSHA:	Occupational Safety and Health Administration
29 CFR 1910.134 & 1926.103:	OSHA Respiratory Protection Standards
29 CFR 1910.1200 & 1926.59:	OSHA Hazard Communication Standards
PEL:	Permissible Exposure Limit (OSHA)
PIN:	Product Identification Number
PNOC:	Particulates Not Otherwise Classified
PNOR:	Particulates Not Otherwise Regulated
PSP:	Product Stewardship Program
RCRA:	Resource Conservation and Recovery Act
REL:	Recommended Exposure Limit (NIOSH)
RID:	Carriage of Dangerous Goods by Rail (International Regulations)
SARA:	Superfund Amendments and Reauthorization Act
SARA Title III:	Emergency Planning and Community Right to Know Act
SARA Section 302:	Extremely Hazardous Substances
SARA Section 304:	Emergency Release
SARA Section 311:	SDS/List of Chemicals and Hazardous Inventory
SARA Section 312:	Emergency and Hazardous Inventory
SARA Section 313:	Toxic Chemicals and Release Reporting
STEL:	Short Term Exposure Limit
SVF:	Synthetic Vitreous Fiber
TDG:	Transportation of Dangerous Goods
TLV:	Threshold Limit Value (ACGIH)
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted Average
WHMIS:	Workplace Hazardous Materials Information System (Canada)

Revision Summary: Updated to align with OSHA HCS 2012. Replaces 01/03/2012 MSDS.

SDS Prepared By: UNIFRAX RISK MANAGEMENT DEPARTMENT

DISCLAIMER

The information presented herein is presented in good faith and believed to be accurate as of the effective date of this Safety Data Sheet. Employers may use this SDS to supplement other information gathered by them in their efforts to assure the health and safety of their employees and the proper use of the product. This summary of the relevant data reflects professional judgment; employers should note that information perceived to be less relevant has not been included in this SDS. Therefore, given the summary nature of this document, Unifrax I LLC does not extend any warranty (expressed or implied), assume any responsibility, or make any representation regarding the completeness of this information or its suitability for the purposes envisioned by the user.

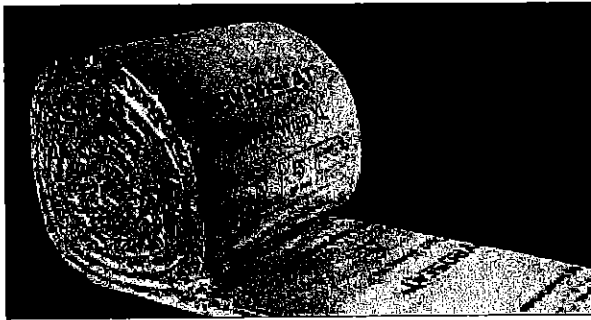
Pyroscat® Duct Wrap XL



Datasheet Code US: 714-237

SDS Code US: 406

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* Commonly referred to test method CA Section 01350 is CDPH Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.1, Feb 2010

Grease Duct Enclosure System

Air Ventilation Duct Enclosure System

Product Data & Installation Guide

1. Product Description

Thermal Ceramics Pyroscat® Duct Wrap XL is a flexible blanket composed of high temperature fibers classified for applications to 2192°F (1200°C) and fully encapsulated in a durable glass fiber reinforced foil facing for easy handling and installation. Pyroscat Duct Wrap XL is UL and ULC Listed for 1 and 2 hour fire resistive enclosure protection, zero clearance for kitchen exhaust ducts, electrical circuit protection, and as a component in UL firestop designs for fire resistance rated floors, ceilings, and walls. The core fibers in Pyroscat Duct Wrap XL are manufactured using Thermal Ceramics patented Superwool® fiber which is an alkaline-earth silicate wool with low biopersistence and therefore increased safety for installers. Pyroscat Duct Wrap XL is under UL's Follow-Up Service Program to ensure the consistent quality essential to this life-safety application.

Product Features

- Thin and Lightweight at 1-1/2" (38mm) thick, 6 pcf (96 kg/m³) density
- Contours easily to complex duct designs
- Grease duct installation UL and ULC Listed with butt joints at all seams on both layers
- Fully foil encapsulated for fast and clean installation
- Contains 2192°F (1200°C) rated fibers
- Microbial Resistance validated by UL Environment
- Good sound absorption
- Compliant to IMC, NFPA 96, UMC, CMC, CNBC

2. Applications

- 2 hour enclosure and firestop system for kitchen exhaust duct
- Zero clearance to combustibles
- 1, 2 and 3 hour enclosure and firestop system for hazardous exhaust ducts, pressurization ducts, clothes dryer exhaust ducts, trash and linen chutes, and other fire rated HVAC ducts
- 1 hour electrical circuit integrity protection
- Engineered and tested solutions for fire protection of structural steel and storage vessels per ASTM E119, ISO 834, and UL1709

3. Specifications - Division 23 07 00 (or 15080)

CSI Spec and AutoCAD available online, www.arcat.com/sd/clients/thermcenr.html.

Thermal Ceramics Pyroscat Duct Wrap XL is a flexible high temperature insulation rated to 2192°F (1200°C) that is fully encapsulated in FSP facing. The duct enclosure system shall be listed by UL and /or ULC per ASTM E 2336, CAN/ULC S144 and ISO 6944 for 1-, 2- and 3-hour rating and zero clearance to combustibles, and tested per ASTM E84 for a flame/smoke rating less than 25/50. Insulation shall have a nominal thickness of 1-1/2 inches (38 mm) and density of 6 lbs/ft³ (96 kg/m³). Insulation shall have a R-Value of 7.3 at 75°F. Installation shall be in strict accordance to manufacturers published installation instructions, UL or ULC Listings, and shop drawings. FastDoor™ XL shall be used for duct access where specified or as required by code.

Pyroscat® Duct Wrap XL



4. Physical Characteristics

Product	Unit	Size	Units/ Ctn.	Wt./ Ctn.
Pyroscat Duct Wrap XL	Roll	1-1/2" x 24" x 25'	1	37.5 lbs.
Pyroscat Duct Wrap XL	Roll	1-1/2" x 48" x 25'	1	75 lbs.

5. Performance Specifications

Reference Standard	Standard No.	Performance
Grease Duct Enclosure System	ASTM E2336	Pass
Section 16.1 - Non-Combustibility	ASTM E136	Pass
Section 16.2-Fire Resistance (wall)	ASTM E119	Pass
Section 16.3 - Durability Test	ASTM C518	Pass
Section 16.4 - Internal Fire Test	ASTM E2336	Pass
Section 16.5 - Fire Engulfment (duct)	ASTM E814/ E119	Pass
ULC Grease Duct Test Protocol		Pass
Standard Methods of Fire Resistance Tests - Grease Duct Assemblies	CAN/ULC S144	Pass
Grease Duct Clearances	UL 1978	Pass
Air Ventilation Duct Enclosure	ISO 6944	Pass
Surface Burning Characteristics	ASTM E84	<25/50
Thermal Resistance (R-value @ 75°F)	ASTM C518	7.3 per layer
Mold Growth	ASTM C1338	ULE Validated
Low VOCs	CA Standard 01350	ULE Validated

6. Listings/Building Code Reports

Listed Uses	Agency	Listing	Layers
Grease Duct Enclosure per ASTM E2336 and AC101 (2006, 2009, 2012 IMC, NFPA 96, UMC, CMC)	UL	G18	2
	ICC-ES	ESR 2213	
ULC Grease Duct Test Protocol and CAN/ULC S144*	ULC	FRD 4, 7"	2
Grease Duct Insulation (2003 IMC)	OPL	TC/BI 120-01	1
Through Penetration FireStop System per ASTM E814, UL 1479	UL	See Figure 2	1 or 2
	ULC		
1- or 2-hour Ventilation Duct Enclosure per ISO 6944-1985	UL	HNLJ.V1, 19, 29	1
	ULC	FRD 3, 5, 6, 18	
3-hour Ventilation Duct Enclosure per ISO 6944-1985	UL	HNLJ.V2	2
Electrical Circuit Protective System	UL	FHIT.5	2

7. Storage

Thermal Ceramics Pyroscat Duct Wrap XL must be stored in a dry warehouse environment on pallets. Pallets should not be stacked.

8. Installation

Thermal Ceramics Pyroscat Duct Wrap XL shall be installed by a qualified contractor in accordance with manufacturer's instructions and laboratory design listings.

Materials and Equipment

- Thermal Ceramics Pyroscat Duct Wrap XL blanket
- Aluminum foil tape
- Glass filament reinforced tape (optional)
- Carbon steel or stainless steel banding material, minimum 1/2" (13mm) wide, minimum 0.015" (0.4mm) thick, with steel banding clips
- Hand banding tensioner and crimping tool
- Minimum 12 gage (3mm) steel insulation pins; steel speed clips, minimum 1-1/2" (38mm) square or 1-1/2" (38mm) diameter, or equivalent sized cup-head pins;
- Capacitor discharge stud gun
- Thermal Ceramics FastDoor™ XL
- An approved firestop sealant

Pyroscat® Duct Wrap XL



General

Cut edges of the blanket shall be taped with aluminum foil tape to prevent exposed edges of the insulation absorbing grease and moisture in the event of a compromised grease duct joint or condensation. Overlaps and/or tightly butted joints are used to block heat transfer in the event of duct deformation resulting from thermal expansion. Filament tape is suggested to hold the blanket in place until steel banding or pinning is installed to permanently secure the blanket.

A. Installation on Grease Duct per ASTM E2336 and CAN/ULC S144 (Figure 1)

System requires two layers of insulation applied directly to the duct with tight butt joints at all seams on both layers. The first layer of insulation is cut to a length sufficient to wrap around the duct and provide a tight butt joint where the blanket ends meet. Adjacent blankets on the first layer are butted tightly together with longitudinal seams offset minimum 6" (150mm). The second layer of insulation is installed in the same method as the first layer, with seams between layers offset a minimum of 6" (150mm). Banding and/or pinning per Section D is used to permanently secure the insulation to the duct.

B. Installation on HVAC Duct per ISO 6944 (Figure 1)

System requires one layer of insulation applied directly to the duct with 3" (75mm) overlaps at all seams. The insulation is cut to a length sufficient to wrap around the duct and provide a 3" (75mm) overlap where the blanket ends meet. Adjacent blankets are installed to provide a minimum overlap of 3" (75mm). Banding and/or pinning per Section D is used to permanently secure the insulation to the duct.

C. 2 & 3 Sided Wrap Installation (Figure 4)

When space does not allow for a complete wrap applied to the duct on all four sides, the Pyroscat Duct Wrap XL is approved for 2 or 3 sided installations with mechanical attachment to a rated concrete or CMU assembly. (See Figure 4 for installation details.)

D. Mechanical Attachment Methods

- 1) **Banding (Figure 1)** - Minimum 1/2" (13mm) wide carbon steel or stainless steel banding, 0.015" (0.4mm) thick, is placed around the entire perimeter of the insulated duct on maximum 10-1/2" (270mm) centers and 1-1/2" (38mm) from each blanket edge or 1-1/2" (38mm) from each collar edge when using the

butt joint and collar method. The banding is placed around the blanket and tightened to firmly hold the Pyroscat Duct Wrap XL in place against the duct, but not cause any cutting or damage to the blanket.

- 2) **Pinning** - Pinning on all sides of the duct may be used as an alternative to banding. For ducts wider than 24" (610mm) pinning is required on the bottom of horizontal runs, or on one side of vertical runs (in addition to steel banding). When applicable, 12 Gage (0.4mm) steel pins are installed on 12" (305mm) centers along the width of the duct and 10-1/2" (270mm) centers along the length of the duct. Pins that extend beyond the outer blanket layer shall be turned down or the excessive length cut off to prevent sharp edges. Shoot through pins (cup head pins) may be used in conjunction with steel banding to prevent blanket sag.

E. Access Doors

- 1) **FastDoor™ XL (Figure 3)** - FastDoor XL is a UL Listed, liquid tight duct cover panel supplied complete with a single layer insulation cover per UL Listing HNK1 G18. The FastDoor XL is installed per included installation instructions. No field welding is required.
- 2) **Field Fabricated Access Doors** - Each access door assembly has four threaded rods 1/4 inch (6mm) in diameter and 5" (127mm) in length, with one welded to each corner of the door opening. Hollow steel tubes, 4-1/2" (114mm) long are installed outside the access cover plate and over the threaded rods. Four 12 gage (3mm) and 4-1/2" (114mm) long steel insulation pins are welded to the access cover plate to allow for installation of the three layers of Pyroscat Duct Wrap XL. One layer of Pyroscat Duct Wrap XL is cut to approximately the same size as the access panel, and impaled over the insulation pins on the panel. A second layer of Pyroscat Duct Wrap XL is cut so as to overlap the first layer a minimum of 1-1/2" (38mm). It is essential that the first and second layer fit tightly against the surrounding wrap with no through openings. The third and outside layer should be cut to overlap the second insulation layer by a minimum of 1-1/2" (38mm). Minimum 1-1/2" (38mm) round or square insulation clips are installed on the insulation pins to secure the three layers of insulation to the access cover plate.

Pyroscat® Duct Wrap XL



All cut edges of the insulation shall be taped with minimum 3" (75mm) wide aluminum foil tape. Wing nuts and washers are installed on the four threaded rods, and tightened against the hollow steel tubes to seal the access cover plate to the duct.

F. Through Penetration Firestop System (Figure 2) -

When the duct penetrates a fire rated assembly an approved fire stop system must be employed. Figure 2 provides a complete list of UL / ULC firestop design listings which can be found in the Certifications Directory at www.ul.com for US systems and www.ulc.ca for Canadian systems. Prior to installing any firestop system the surfaces of all openings and penetrating items must be clean and dry. The Pyroscat Duct Wrap XL core blanket (or mineral wool where allowed by the firestop design listing) must be compressed into the annular space. The packing material must be recessed a minimum depth from the surface of the concrete or gypsum assembly. The recessed opening must be filled with a minimum thickness of an approved firestop sealant. The packing material type and compression, minimum recess (typically 1/4" (6mm)), and approved firestop sealant and thickness (typically 1/4" (6mm)) shall be as specified in an approved UL / ULC firestop design listing. When there is not sufficient annular space around the duct to run the Pyroscat Duct Wrap XL enclosure system continuous through the fire rated assembly, the enclosure may terminate above and below the floor/ceiling assembly or on either side of a wall assembly as shown in Figure 2. When this method is used, the Pyroscat Duct Wrap XL must be mechanically attached on either side of the fire rated assembly using one of the attachment methods described in Section D, spaced a maximum of 1-1/2" (38mm) from the fire rated assembly.

G. Support Hanger Systems

- 1) **Grease ducts:** Trapeze support hangers shall be spaced on maximum 60 in. (1500 mm) centers. Hanger rods or straps shall be anchored with steel drop in or wedge expansion type masonry anchors. No additional protection is required for hangers and supports meeting the requirements of the Table below.

Hanger Cross Section	Maximum Perimeter, in (mm)	Trapeze Support (or equivalent Yield Strength), in (mm)
3/8 in (10 mm) threaded rod	148 (3759)	2 (51) x 2 (51) x 1/8 (3) in angle

- 2) **HVAC ducts:** Trapeze support hangers shall be spaced on maximum 60 in. (1500 mm) centers. Hanger rods or

straps shall be anchored with steel drop in or wedge expansion type masonry anchors. No additional protection is required for hangers and supports meeting the requirements of the Table below.

Hanger Cross Section	Max. Perimeter, in (mm)	Trapeze Support (or equivalent Yield Strength), in (mm)
1 in x 1/8 gage strap (25 mm x 1.5 gage strap)	100 (2540)	
1/4 in (6 mm) threaded rod	60 (1270)	1 1/2 (38) x 1 1/2 (38) x 3/16 (5) angle
3/8 in (10 mm) threaded rod	150 (3810)	1 1/2 (38) x 1 1/2 (38) x 3/16 (5) angle
1/2 in (12.7 mm) threaded rod	218 (5540)	2 (51) x 2 (51) x 1/4 (6) angle

9. Maintenance and Repair

No maintenance is required when installed in accordance with Thermal Ceramics (TC) installation instructions. If damage is limited to the foil facing, aluminum foil tape can be used to repair the foil facing. If an area of blanket is found to be damaged the following procedure must be incorporated. If the damaged area is larger than 8" (203mm) x 8" (203mm) the entire wrap section must be removed and replaced according to TC installation instructions. If the damaged area is small (less than 8" (203mm) x 8" (203mm)), the damaged area must be cut away and replaced with a new section 1" (25mm) larger in length and width than the cut out, such that the new section can be compressed tightly into the cut out area. All cut edges of the new section must be taped and sealed with aluminum foil tape. The new section must be held in place with either pinning or banding per TC installation instructions.

10. Limitations

Thermal Ceramics Pyroscat Duct Wrap XL shall be installed in accordance with these installation instructions and appropriate laboratory design listings. The integrity of Pyroscat Duct Wrap XL systems is limited to the quality of the installation.

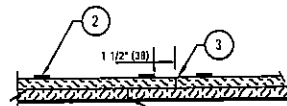
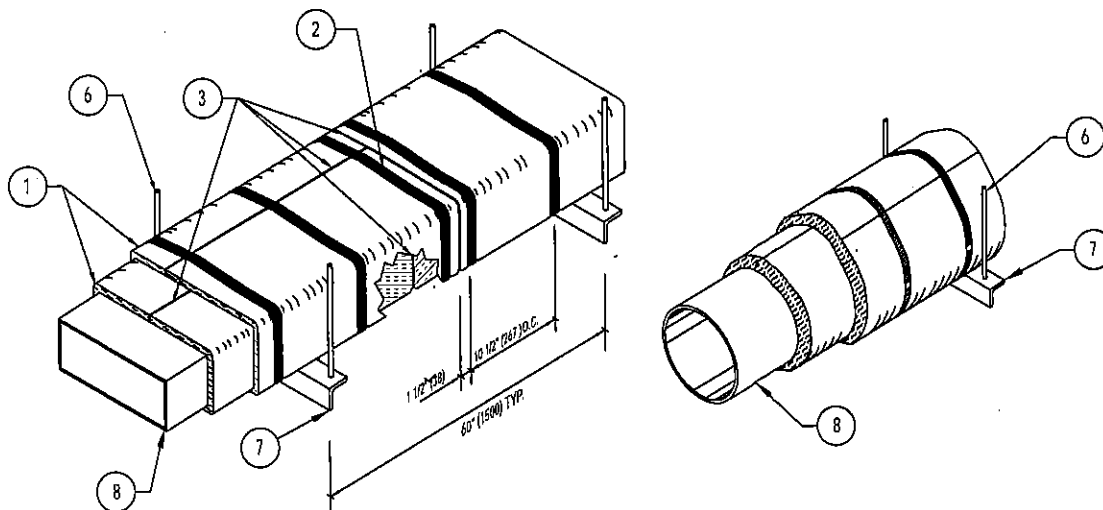
* For personal protective equipment recommendations, please see SDS.

Thermal Ceramics and Pyroscat are trademarks of Morgan Advanced Materials. Pyroscat products are manufactured by Thermal Ceramics and are distributed by authorized distributors.

Pyroscat® Duct Wrap XL

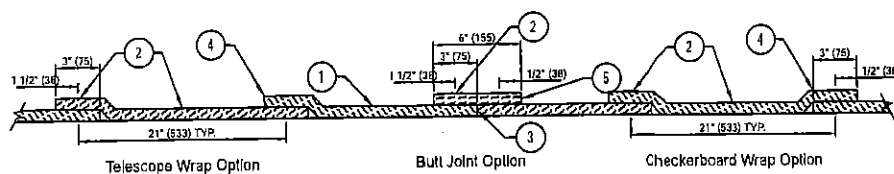


Grease and HVAC Duct Enclosure System 1 or 2 Hour Shaft Alternative / Zero Clearance to Combustibles



Butt Joint / Butt Joint Typical

TWO LAYER INSTALLATION (Grease Duct per ASTM E2336 and CAN/ULC S144)



SINGLE LAYER INSTALLATION OPTIONS (2-Hour rated HVAC Duct per UL HNLJ V-19)

LEGEND	
1	Two Layers of XL Insulation for ASTM E2336 and CAN/ULC S144 Grease Duct Enclosures One Layer of XL Insulation for 2-Hour Air Ventilation Duct Enclosures
2	Steel banding minimum 1/2" (13) wide by 0.015" (0.4) thick.
3	Tight butt joints (no overlap) at perimeter and longitudinal joints, both layers for grease ducts
4	Min. 3" (75) overlap on perimeter and between adjacent blankets
5	Optional 6" XL collar
6	Hangers - size dependent weight of assembly (see datasheet Section G)
7	Trapeze Supports - size dependent on weight of assembly (see datasheet Section G)
8	Steel Rectangular or Round Duct (size, gage and construction dependent per Listed Design)

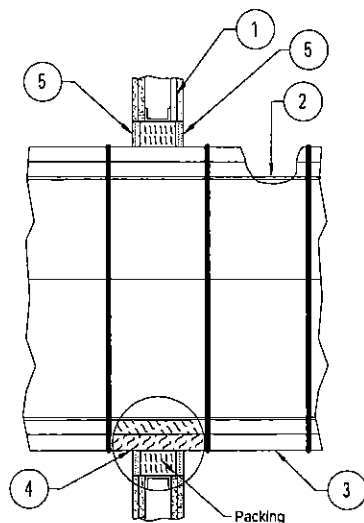
The integrity of Thermal Ceramics duct systems is limited to the quality of the installation.

XL001-10

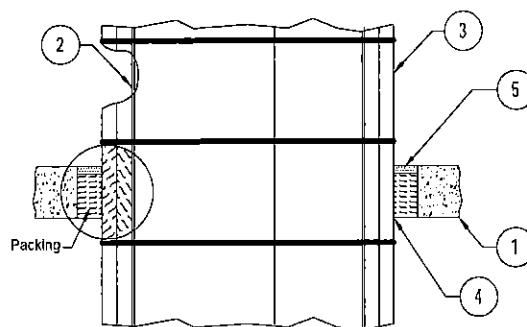
Pyroscat® Duct Wrap XL



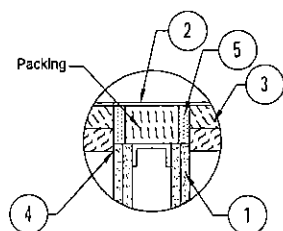
Commercial Kitchen Grease Duct Enclosure System Air Ventilation Duct Enclosure System Through Penetration Firestop Systems



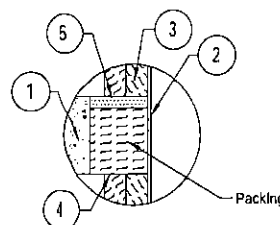
XL Insulation continuous through rated wall assembly



XL Insulation continuous through rated floor/ceiling assembly



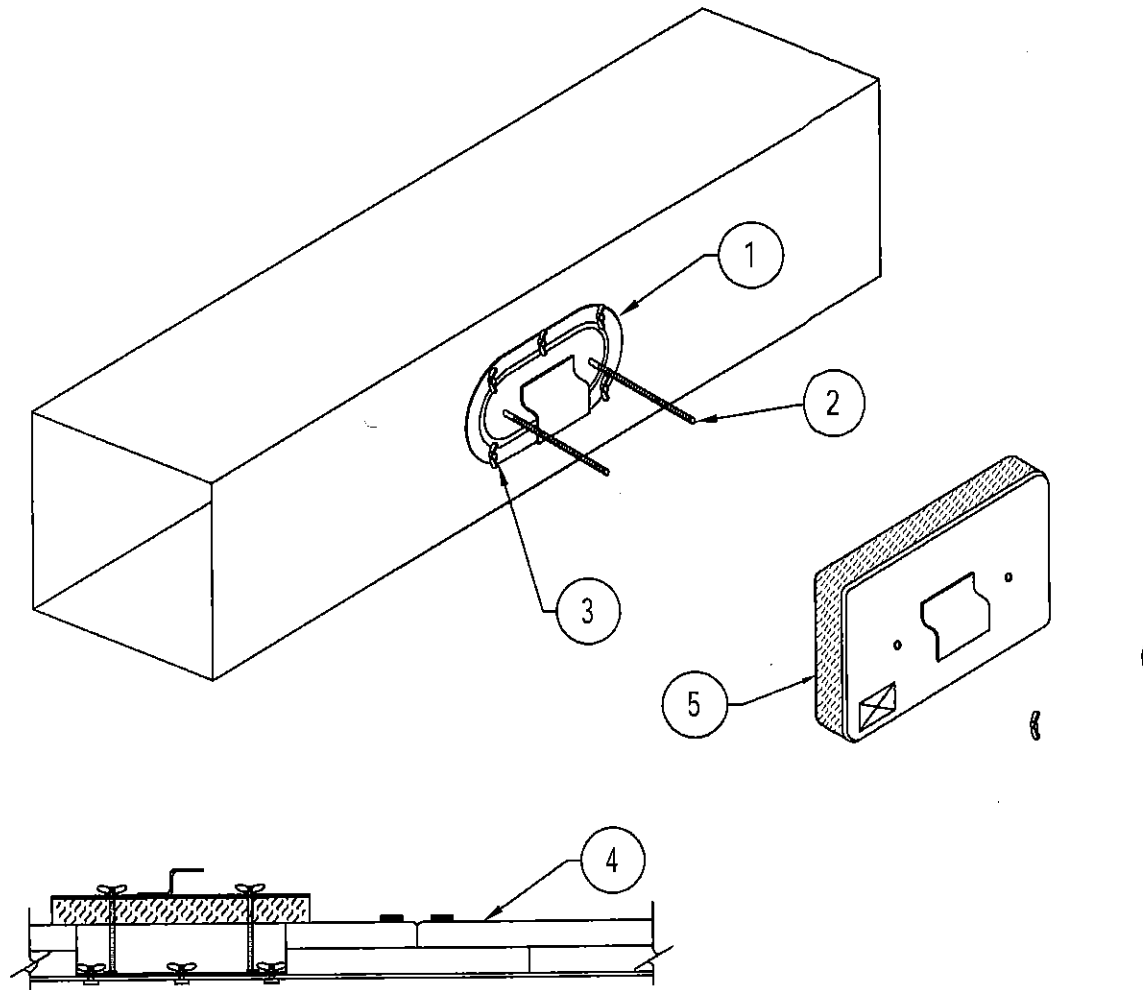
XL Insulation terminated on both sides of the rated wall assembly



XL Insulation terminated at the top and bottom surface of the floor/ceiling assembly

Firestop Designs per ASTM E814 / UL 1479 - Consult UL / ULC Directories for System Details						
UL Listing	F- & T-Rating	(1) Floor/Wall	(2) Penetrant	(3) Enclosure Per	(4) Termination	(5) Firestop Sealant Details
C-AJ-7012	2-hour	Concrete/CMU	84x24; 26 Ga Duct	V19; FRD3; 5; 18	wrap through	1/2 in; STI; Tremco
C-AJ-7014	3-hour	Concrete/CMU	84x24; 26 Ga Duct	V2;	wrap through	1/2 in; STI; Tremco
C-AJ-7019	1 or 2-hour	Concrete/CMU	84x24; 26 Ga Duct	V19; FRD3; 5; 18	terminate at	1/4 in; STI; Tremco
C-AJ-7021	2-hour	Concrete/CMU	49x24; 16 Ga Duct	G18; FRD4; 7	terminate at	1/4 in; STI; Tremco
C-AJ-7095	2-hour	Concrete/CMU	39x39; 22 Ga Duct	V19; FRD3; 5; 18	wrap through	1/4 in; STI; Hilti; Rectorseal; Tremco
C-AJ-7098	2-hour	Concrete/CMU	49x24; 16 Ga Duct	G18; FRD4; 7	wrap through	1/4 in; STI; Hilti; Rectorseal; Tremco
F-C-7036	1 or 2-hour	Wood/Gyp Floor	24x12; 16 Ga Duct	G18; FRD4; 7	wrap through	1/4 in; STI; Hilti; Rectorseal; Tremco
F-C-7055	1-hour	Wood/Gyp Floor	4 Dia; 30 Ga Duct	V29; FRD28	wrap through	1/4 in; STI
W-J-7086	2-hour	Concrete/CMU Wall	100x100; 26 Ga Duct	V19; FRD3; 5; 18	terminate at	1/4 in; STI
W-L-7121	1 or 2-hour	Gyp Wall	30x30; 16 Ga Duct	G18; FRD4; 7	wrap through	1/4 in; STI; Hilti; Rectorseal; Tremco
W-L-7145	1 or 2-hour	Gyp Wall	100x100; 26 Ga Duct	V19; FRD3; 5; 18	terminate at	5/8 in; STI

The Integrity of Thermal Ceramics duct systems is limited to the quality of the installation.
XL003-5



ASTM E 2336 Compliant Enclosure and Door System

FIGURE 3

1	UL listed FastDoor XL access panel
2	All Thread Rods and wing nuts
3	Retainer Clips with threaded nut and wing bolts
4	Insulation layers as required by UL or ITS Listings
5	FastDoor XL; 1-1/2 inch thick single layer Insulation

FastDoor XL1 Access Doors Sizes

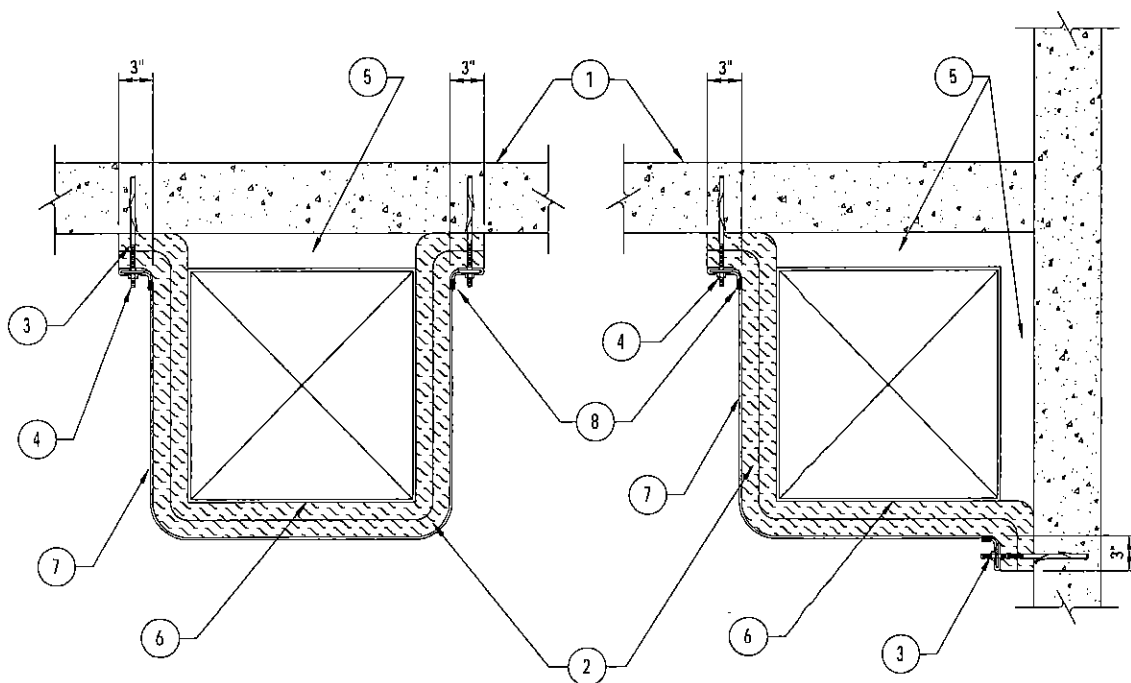
Available Opening Sizes	Ordering Code
10" x 4" Door Opening	*434-6970-033-99X1
10" x 6" Door Opening	434-6970-034-99X1
12" x 8" Door Opening	434-6970-035-99X1
12" x 12" Door Opening	434-6970-036-99X1
16" x 12" Door Opening	434-6970-037-99X1
20" x 20" Door Opening	434-6970-038-99X1
*Special Order; Curved and SS Available	

Pyroscat® Duct Wrap XL



Commercial Kitchen Grease Duct Enclosure System Air Ventilation Duct Enclosure System

1 Or 2 Or 3 Hour Shaft Alternative / Zero Clearance to Combustibles
2 and 3 Sided Wrap Detail for Attaching to Walls and/or Ceilings



Note: Ducts must be independently supported per code

LEGEND	
1	Rated Concrete floor/ceiling, or wall - with rating equal or greater than enclosure rating
2	Two layers of XL Insulation for Grease Duct Enclosures (install per UL G18)) One layer of XL Insulation for Air Ventilation Duct Enclosures (install per UL V19) Two layers of XL Insulation for 3-hr Air Ventilation Duct Enclosure (install per UL V2)
3	Concrete fastener system
4	3/16" (5) thick x 2" (50) - 3" (75) wide bar stock perforated 12" (305) o.c.
5	8" (203) maximum Air Gap
6	Duct
7	Steel banding min. 1/2" (13) wide by 0.015" (0.4) thick.
8	Banding clip

The Integrity of Morgan Thermal Ceramics duct systems is limited to the quality of the installation.



SAFETY DATA SHEET

MSDS No. M0406

Effective Date: 01/03/2012

1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

Trade Names: FYREWAP® 0.5 PLENUM INSULATION

Product Group: CMS SOLUBLE FIBER PRODUCT

Chemical Name: CALCIUM MAGNESIUM SILICATE FIBER

Synonym(s): Synthetic vitreous fiber (SVF), man-made vitreous fiber (MMVF), man-made mineral fiber (MMMF)

Manufacturer/Supplier: Unifrax I LLC
600 Riverwalk Parkway, Suite 120
Tonawanda, NY 14150
Product Stewardship Information Hotline
1-800-322-2293 (Monday - Friday 8:00 a.m. - 4:30 p.m. EST)

For additional MSDSs, visit our web page, <http://www.unifrax.com>, or call Unifrax Customer Service at (716) 768-6500

CHEMTREC Assist: CHEMTREC will provide assistance for chemical emergencies. Call 1-800-424-9300

2. HAZARDS IDENTIFICATION

RESPIRATORY TRACT (nose & throat) IRRITATION:

If inhaled in sufficient quantity, may cause temporary, mild mechanical irritation to respiratory tract. Symptoms may include scratchiness of the nose or throat, cough or chest discomfort.

EYE IRRITATION:

May cause temporary, mild mechanical irritation. Fibers may be abrasive; prolonged contact may cause damage to the outer surface of the eye.

SKIN IRRITATION:

May cause temporary, mild mechanical irritation. Exposure may also result in inflammation, rash or itching.

GASTROINTESTINAL IRRITATION:

Unlikely route of exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Pre-existing medical conditions, including dermatitis, asthma or chronic lung disease may be aggravated by exposure; individuals who have a history of allergies may experience greater amounts of skin and respiratory irritation.

HAZARD CLASSIFICATION

The Hazardous Materials Identification System (HMIS) –

Health 1 Flammability 0 Reactivity 0 Personal Protection Index: X (Employer Determined)

3. COMPOSITION / INFORMATION ON INGREDIENTS

STANDARD PRODUCT FORM

<u>COMPONENT</u>	<u>CAS NUMBER</u>	<u>% BY WEIGHT</u>
Amorphous calcium-magnesium-silicate (alkaline-earth-silicate) fiber	436083-99-7	100

ENCAPSULATED PRODUCT FORM

<u>COMPONENTS</u>	<u>CAS NUMBER</u>	<u>% BY WEIGHT</u>
Amorphous calcium-magnesium-silicate (alkaline-earth-silicate) fiber	436083-99-7	96-98

Aluminum foil with fiberglass reinforcement and inorganic adhesive.	NOT APPLICABLE	2-4

FIBER CHEMISTRY

Amorphous calcium-magnesium-silicate (alkaline-earth-silicate), produced and sold separately under the trade name Insulfrax® Thermal Insulation Products. (SiO₂ 62-67 %, CaO 28-33 %, MgO 1-6 %, trace elements 0-1%)

(See Section 8 "Exposure Controls / Personal Protection" for exposure guidelines)

4. FIRST AID MEASURES

FIRST AID PROCEDURES

RESPIRATORY TRACT (nose & throat) IRRITATION:

If respiratory tract irritation develops, move the person to a dust free location. Get medical attention if the irritation continues. See Section 8 for additional measures to reduce or eliminate exposure.

EYE IRRITATION:

If eyes become irritated, flush immediately with large amounts of lukewarm water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Do not rub eyes. Get medical attention if irritation persists.

SKIN IRRITATION:

If skin becomes irritated, remove soiled clothing. Do not rub or scratch exposed skin. Wash area of contact thoroughly with soap and water. Using a skin cream or lotion after washing may be helpful.

GASTROINTESTINAL IRRITATION:

If gastrointestinal tract irritation develops, move the person to a dust free environment.

NOTES TO PHYSICIANS:

Skin and respiratory effects are the result of temporary, mild mechanical irritation; fiber exposure does not result in allergic manifestations.

5. FIRE FIGHTING MEASURES

NFPA Codes: Flammability: 0 Health: 1 Reactivity: 0 Special: 0

NFPA Unusual Hazards: None
Flammable Properties: None
Flash Point: None
Hazardous Decomposition Products: None
Unusual Fire and Explosion Hazard: None
Extinguishing Media: Use extinguishing media suitable for type of surrounding fire

6. ACCIDENTAL RELEASE MEASURES

SPILL PROCEDURES

Minimize creating airborne dust. Dust suppressing cleaning methods such as wet sweeping or vacuuming should be used to clean the work area. If vacuuming, the vacuum must be equipped with a HEPA filter. Compressed air or dry sweeping should not be used for cleaning.

7. HANDLING AND STORAGE

STORAGE

Store in original container in a dry area. Keep container closed when not in use.

HANDLING

Handle fiber carefully. Limit use of power tools unless in conjunction with local exhaust. Use hand tools whenever possible. Frequently clean the work area with HEPA filtered vacuum or wet sweeping to minimize the accumulation of debris. Do not use compressed air for clean-up.

EMPTY CONTAINERS

Product packaging may contain residue. Do not reuse.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

INDUSTRIAL HYGIENE STANDARDS AND OCCUPATIONAL EXPOSURE LIMITS

<u>Components</u>	<u>OSHA</u>	<u>MANUFACTURER</u>
Calcium-magnesium-silicate fiber	None established*	See below**

*There is no specific regulatory standard for INSULFRAX® in the U.S. OSHA's "Particulate Not Otherwise Regulated (PNOR)" standard [29 CFR 1910.1000, Subpart Z, Air Contaminants] applies generally; Total Dust 15 mg/m³; Respirable Fraction 5 mg/m³.

OTHER OCCUPATIONAL EXPOSURE LEVELS (OEL)

ACGIH TLV's : Calcium-magnesium-silicate fiber -- Particulates Not Otherwise Classified (PNOC) : Inhalable particulate -- 10 mg/m³. Respirable particulate -- 3 mg/m³.

** Encapsulated Product Form: Encapsulation reduces (or eliminates) the potential for exposure to airborne fiber or particles. If product is cut or otherwise disturbed, exposure may result.

As with most industrial materials, it is prudent to minimize unnecessary exposure to respirable dusts. Note that Industrial hygiene standards and occupational exposure limits differ between countries and local jurisdictions. Check with your employer to identify any "respirable dust", "total dust" or "fiber" exposure standards to follow in your area. If no regulatory dust or fiber control standard apply, a qualified industrial hygiene professional can assist with a specific evaluation of workplace conditions and the identification of appropriate respiratory protection practices. In the absence of other guidance, the supplier has found that it is generally feasible to control occupational fiber exposure to 1 f/cc or less.

ENGINEERING CONTROLS:

Dust suppressing control technologies such as local exhaust ventilation, point of generation dust collection, down draft work stations, emission controlling tool designs, and materials handling equipment are effective means of minimizing airborne fiber emissions. For additional information, contact the Unifrax I LLC Product Stewardship Information Line at 1-800-322-2293 (See Section 16).

PERSONAL PROTECTION EQUIPMENT

Skin Protection:

Wear gloves, head coverings and full body clothing as necessary to prevent skin irritation. Washable or disposable clothing may be used. If possible, do not take unwashed clothing home. If soiled work clothing must be taken home, employers should ensure employees are thoroughly trained on the best practices to minimize non-work dust exposure (e.g., vacuum clothes before leaving the work area, wash work clothing separately, rinse washer before washing other household clothes, etc.).

Eye Protection:

Wear safety glasses with side shields or other forms of eye protection in compliance with appropriate OSHA standards to prevent eye irritation. The use of contact lenses is not recommended, unless used in conjunction with appropriate eye protection. Do not touch eyes with soiled body parts or materials. If possible, have eye-washing facilities readily available where eye irritation can occur.

Respiratory Protection:

When effective engineering and/or administrative controls are insufficient, the use of appropriate respiratory protection, pursuant to the requirements of OSHA 1910.134, is recommended. For dust concentrations below the applicable exposure limit value, PPE is not required. The evaluation of workplace hazards and the identification of appropriate respiratory protection is best performed on a case by case basis, by a qualified Industrial Hygienist.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR AND APPEARANCE:	White, odorless, fibrous material
CHEMICAL FAMILY:	Calcium Magnesium Silicate Fibers
BOILING POINT:	Not Applicable
WATER SOLUBILITY (%):	Not Soluble in Water
MELTING POINT:	1260° C (2300° F)
SPECIFIC GRAVITY:	2.60
VAPOR PRESSURE:	Not Applicable
pH:	Not Applicable
VAPOR DENSITY (Air = 1):	Not Applicable
% VOLATILE:	Not Applicable
MOLECULAR FORMULA:	SiO ₂ CaO.MgO.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable under conditions of normal use.
INCOMPATIBILITY:	Avoid direct contact with strong acid environments.

CONDITIONS TO AVOID:	None.
HAZARDOUS DECOMPOSITION PRODUCTS:	None.
HAZARDOUS POLYMERIZATION:	Not Applicable.

11. TOXICOLOGICAL INFORMATION

EPIDEMIOLOGY

This product has not been the subject of epidemiological study. Epidemiological studies related to other fiber chemistries of similar solubility have not identified a statistically significant incidence of exposure-related respiratory disease.

TOXICOLOGY

This product has been the subject of limited testing.

A review of available scientific literature suggests an inverse relationship between dissolution rate and potential health effects; i.e. the higher the dissolution rate of a fiber the lower its potential to produce health effects. The dissolution rate of INSULFRAX® fiber has been determined through standardized *in vitro* testing. The dissolution rate of INSULFRAX® fibers is higher than that of other fiber types that have been tested in chronic animal studies and did not produce respiratory disease.

This product possesses a fiber chemistry within the regulatory (European Commission Directive 97/69/EC) definition as a "man-made vitreous (silicate) fiber with random orientation with alkaline oxide and alkaline earth oxide (Na₂O + K₂O + CaO + MgO + BaO) content greater than 18% by weight". INSULFRAX® fibers have been tested pursuant to EU protocol ECB/TM/26, rev. 7, Nota Q, Directive 97/69/EC. The results for the short term biopersistence test by inhalation (IH test) was 7 days; well below the regulatory threshold of 10 days cited in Directive 97/69/EC. Based on testing results, INSULFRAX® based products are not regarded as potential carcinogens and they ARE EXEMPT from European classification as such. By virtue of these test results, these products ARE EXEMPT from European regulatory guidelines that require hazard warning labels with specific risk phrases citing respiratory disease potential. In addition, INSULFRAX® fibers have been tested in an independent laboratory, by intratracheal (IT test) instillation, under a protocol that was consistent with the requirements of the German Hazardous Substances Ordinance (BGBI. I pp. 1782, 2049, Third Amendment, Appendix V, No. 7). The half-life clearance of INSULFRAX® fibers was 30 days; well below the applicable regulatory thresholds. Based on the IT test results, INSULFRAX® products ARE EXEMPT from the requirements of the German Ordinance.

The definition of "irritant" contained in the hazard communication standard, 29 CFR 1900.1200, Appendix A, is "...a reversible inflammatory effect on living tissue by chemical action...". INSULFRAX® fiber is an inert material which doesn't interact chemically with exposed skin. However, there is a possibility that exposure to this product may cause temporary mechanical irritation to the eyes, skin or respiratory tract (nose, throat, lungs). This temporary irritation can be mitigated with proper handling practices designed to limit exposure and the use of protective clothing (glasses, gloves, clothing).

12. ECOLOGICAL INFORMATION

No ecological concerns have been identified.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT

To prevent waste materials from becoming airborne during waste storage, transportation and disposal, a covered container or plastic bagging is recommended.

DISPOSAL

INSULFRAX® fiber, as manufactured, is not classified as a hazardous waste according to Federal regulations (40 CFR 261). Any processing, use, alteration or chemical additions to the product, as purchased, may alter the disposal requirements. Under Federal regulations, it is the waste generator's responsibility to properly characterize a waste material, to determine if it is a "hazardous" waste. Check local, regional, state or provincial regulations to identify all applicable disposal requirements.

EUROPEAN UNION

Waste from this product is not classified as "hazardous" or "special" under European Union regulations. Disposal is permitted at landfills licensed for industrial waste.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

Hazard Class:	Not Regulated	United Nations (UN) Number:	Not Applicable
Labels:	Not Applicable	North America (NA) Number:	Not Applicable
Placards:	Not Applicable	Bill of Lading:	Product Name

INTERNATIONAL

Canadian TDG Hazard Class & PIN: Not regulated
Not classified as dangerous goods under ADR (road), RID (train) or IMDG (ship).

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS

EPA: **Superfund Amendments and Reauthorization Act (SARA)** Title III - This product does not contain any substances reportable under Sections 302, 304, 313, (40 CFR 372). Sections 311 and 312 (40 CFR 370) apply (delayed hazard).
Toxic Substances Control Act (TSCA) - All substances in this product are listed, as required, on the TSCA inventory.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the **Clean Air Act (CAA)** - INSULFRAX® contains fibers with an average diameter greater than one micron and thus is not considered a hazardous air pollutant.

OSHA: Comply with **Hazard Communication Standards** 29 CFR 1910.1200 and 29 CFR 1926.59 and the **Respiratory Protection Standards** 29 CFR 1910.134 and 29 CFR 1926.103.

States: INSULFRAX® products are not known to be regulated. However, state and local OSHA and EPA regulations may apply to these products. If in doubt, contact your local regulatory agency.

INTERNATIONAL REGULATIONS

Canada: **Canadian Workplace Hazardous Materials Information System (WHMIS):**
No Canadian Workplace Hazardous Materials Information System (WHMIS) categories apply to this product.
Canadian Environmental Protection Act (CEPA) - All substances in this product are listed, as required, on the Domestic Substance List (DSL)

European Union: **European Directive 97/69/EC** - By virtue of testing results, INSULFRAX® fiber has been

exempted from classification and labeling as a potential carcinogen.

16. OTHER INFORMATION

As produced, Insulfrax® fibers are vitreous (glassy) materials, which do not contain crystalline silica. Continued exposure to elevated temperatures may cause these fibers to devitrify (become crystalline). The first crystalline formations to occur are diopside and wollastonite, which begin to form at about 900° C (1652° F). Under recommended usage, it is unlikely that Insulfrax fibers will be exposed to the temperatures and conditions required for the formation of crystalline phase silica. The occurrence and extent of crystalline phase silica formation is highly dependent on temperature, the duration of time that the fibers are exposed to high temperatures, fiber chemistry, and the presence of fluxing agents. The presence of crystalline phase silica can only be confirmed through laboratory analysis of the "hot face" fiber.

IARC's evaluation of crystalline silica states "Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)" and additionally notes "carcinogenicity in humans was not detected in all industrial circumstances studied" (IARC Monograph Vol. 68, 1997). NTP lists all polymorphs of crystalline silica amongst substances which may "reasonably be anticipated to be carcinogens".

During removal operations, the use of a full face respirator is recommended to reduce inhalation exposure along with eye & respiratory tract irritation. A specific evaluation of workplace hazards and the identification of appropriate respiratory protection is best performed, on a case by case basis, by a qualified industrial hygiene professional. For more detailed information regarding respirable crystalline silica, call the Product Stewardship Information Hotline (see below).

PRODUCT STEWARDSHIP PROGRAM

Unifrax I LLC has established a program to provide customers with up-to-date information regarding the proper use and handling of fiber-based products, including INSULFRAX® THERMAL INSULATION PRODUCTS. In addition, Unifrax I LLC has also established a program to monitor airborne fiber concentrations at customer facilities. If you would like more information about this program, please call the Unifrax I LLC Product Stewardship Information Line at 1-800-322-2293.

DEFINITIONS

ACGIH:	American Conference of Governmental Industrial Hygienists
ADR:	Carriage of Dangerous Goods by Road (International Regulation)
CAA:	Clean Air Act
CAS:	Chemical Abstracts Service
CERCLA:	Comprehensive Environmental Response, Compensation and Liability Act
CMS:	Calcium Magnesium Silicate
DSL:	Domestic Substances List
EPA:	Environmental Protection Agency
EU:	European Union
f/cc:	Fibers per cubic centimeter
HEPA:	High Efficiency Particulate Air
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods Code
mg/m³:	Milligrams per cubic meter of air
mmpcf:	Million particles per cubic meter
NFPA:	National Fire Protection Association
NIOSH:	National Institute for Occupational Safety and Health
OSHA:	Occupational Safety and Health Administration
29 CFR 1910.134 & 1926.103:	OSHA Respiratory Protection Standards
29 CFR 1910.1200 & 1926.59:	OSHA Hazard Communication Standards
PEL:	Permissible Exposure Limit (OSHA)
PIN:	Product Identification Number
PNOC:	Particulates Not Otherwise Classified

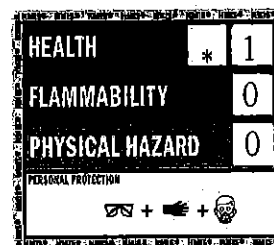
PNOR:	Particulates Not Otherwise Regulated
PSP:	Product Stewardship Program
RCRA:	Resource Conservation and Recovery Act
REL:	Recommended Exposure Limit (NIOSH)
RID:	Carriage of Dangerous Goods by Rail (International Regulations)
SARA:	Superfund Amendments and Reauthorization Act
SARA Title III:	Emergency Planning and Community Right to Know Act
SARA Section 302:	Extremely Hazardous Substances
SARA Section 304:	Emergency Release
SARA Section 311:	MSDS/List of Chemicals and Hazardous Inventory
SARA Section 312:	Emergency and Hazardous Inventory
SARA Section 313:	Toxic Chemicals and Release Reporting
STEL:	Short Term Exposure Limit
SVF:	Synthetic Vitreous Fiber
TDG:	Transportation of Dangerous Goods
TLV:	Threshold Limit Value (ACGIH)
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted Average
WHMIS:	Workplace Hazardous Materials Information System (Canada)

Revision Summary: Replaces 3/20/07 MSDS

MSDS Prepared By: UNIFRAX RISK MANAGEMENT DEPARTMENT

DISCLAIMER

The information presented herein is presented in good faith and believed to be accurate as of the effective date of this Safety Data Sheet. Employers may use this SDS to supplement other information gathered by them in their efforts to assure the health and safety of their employees and the proper use of the product. This summary of the relevant data reflects professional judgment; employers should note that information perceived to be less relevant has not been included in this SDS. Therefore, given the summary nature of this document, Unifrax I LLC does not extend any warranty (expressed or implied), assume any responsibility, or make any representation regarding the completeness of this information or its suitability for the purposes envisioned by the user.



MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATERIAL NAME: COMMERCIAL INSULATION

PRODUCT/TRADE NAME: CertaPro™ AcoustaTherm™ Batts (Unfaced & Kraft-Faced), CertaPro™ Partition Batts, CertaPro™ Thermal Kraft Faced Batts, CertainPro™ Thermal Foil Faced Batts, CertaPro™ Thermal FSK-25 Faced Batts, CertaPro™ Thermal Extended Flange Batts (FSK, White&Black PSK Faced), CertaPro™ AcoustaBoard™ Black, CertaPro™ AcoustaBlanket™ Black

PRODUCT DESCRIPTION: FIBER GLASS INSULATION

PRODUCT USE: Acoustical & Thermal Insulation

CHEMICAL NAME: Mixture
CAS NUMBER: None Assigned
EINECS: None Assigned
MOLECULAR FORMULA: No Data Available

Company Identification

CERTAINTEED CORPORATION
P.O. Box 860
Valley Forge, PA 19482
United States

WEB ADDRESS: www.certainteed.com

Phone Numbers

Technical Information: (610) 341-7000 - 9 AM – 5 PM (Eastern Time – USA)

Emergency: (800) 424-9300 - EMERGENCY TELEPHONE: CHEMTREC
Emergency: (703) 527-3887 - OUTSIDE OF THE U.S. CHEMTREC

Product Literature Code: 30-25-027

PREPARATION DATE: 8/1/2003
LAST REVISION DATE: 10/27/2011

SECTION 2 - HAZARDS IDENTIFICATION

Emergency Overview

This product may cause temporary irritation to the upper respiratory system, eyes, and skin. Avoid inhalation, skin and eye contact as temporary irritation may occur. Wear appropriate personal protective equipment as described in Section 8.

GHS

Temporary eye, skin, and respiratory irritation may occur. Avoid breathing dust, fume, gas, mist, vapors and/or spray. Contaminated work clothing should not be allowed out of the workplace. Wash thoroughly after handling. Wear protective gloves.



GHS: Skin Irritation - Category 3, Eye Irritation - Category 2B

NFPA/HMIS RATINGS:

	<u>Health</u>	<u>Fire</u>	<u>Reactivity</u>	<u>Degree of Hazard</u>
				0 - Minimal (Insignificant)
				1 - Slight
				2 - Moderate
				3 - Serious (High)
				4 - Severe (Extreme)
				* - Chronic Health Effect(s)
NFPA RATING:	0	0	0	
HMIS RATING:	1*	0	0	

PHYSICAL FORM: Solid

COLOR: Yellow

ODOR: Faint resin odor

HAZARDS: Mild/Slight Irritant, Mechanical Irritant

ROUTE OF ENTRY: Inhalation, Skin/Dermal, Eye/Ocular

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing conditions which may be aggravated by mechanical irritants upon inhalation or skin contact.

POTENTIAL HEALTH EFFECTS:

INHALATION:

ACUTE (IMMEDIATE): Temporary irritation of nose and throat may occur.

CHRONIC (DELAYED): Use of these products has not been shown to cause cancer in humans. Fiber glass wool is a possible cancer hazard. Fiber glass wool has caused cancer in animals but has not produced cancer by inhalation.

SKIN:

ACUTE (IMMEDIATE): Temporary irritation of the skin may occur in some individuals.

CHRONIC (DELAYED): No data available

EYE:

ACUTE (IMMEDIATE): Temporary irritation or redness may occur.

CHRONIC (DELAYED): No data available

INGESTION:

ACUTE (IMMEDIATE): Ingestion of this product unlikely.

CHRONIC (DELAYED): No data available

MUTAGENIC EFFECTS: None

CARCINOGENIC EFFECTS: This product contains glass wool insulation fibers. Following a thorough review of all the medical-scientific data available at a meeting in October 2001, the IARC panel lowered the classification for glass wool insulation fibers from a Group 2B classification ("possibly carcinogenic to humans") to a Group 3 classification ("not classifiable as to carcinogenicity to humans"). IARC said that there is "no evidence of increased risks of lung cancer or of mesothelioma from occupational exposures during manufacturing of these materials, and inadequate evidence over all of any cancer risk." This product contains antimony trioxide which is listed by IARC as Possibly Carcinogenic to Humans – Group 2B. This product contains Acetic acid ethenyl homopolymer and is classified by IARC as Group 3 – Not Classifiable as to Carcinogenicity to Humans.

REPRODUCTIVE EFFECTS: None

OTHER HEALTH EFFECTS: WARNING: To avoid danger of suffocation, do not place the plastic bag within reach of babies and children.

See Section 12 for Ecological Information

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Composition/Information on Ingredients

Product(s) Containing Component	Chemical Name	CAS	%(weight)	UN;EINICS	LD50/LC50	EU	OSHA PEL/TWA	ACGIH TLV/TWA	NIOSH REL
For CertaPro Acousta Therm Kraft Faced Batts adhesive contains:	Asphalt	8052-42-4	0% TO 17%	NA1999; 232-490-9	NDA	NDA	None	0.5 mg/m3	None
For CertainPro Thermal Foil Faced Batts, CertaPro Thermal FSK-25 Faced Batts, CertaPro Thermal Extended Flange Batts (FSK, White&Black PSK Faced), CertaPro AcoustaBoard Black, CertaPro AcoustaBlanket Black:	Fibrous glass	65997-17-3	97%	266-046-0	NDA	NDA	1f/cc (continuous filament glass fibers)	1f/cc (respirable fibers)	5 mg/m3 (total dust)
For CertaPro Acousta Therm Batts (Unfaced & Kraft-Faced), CertaPro Partition Batts, CertaPro Thermal Kraft Faced Batts, CertainPro Thermal Foil Faced Batts, CertaPro Thermal FSK-25 Faced Batts, CertaPro Thermal Extended Flange Batts (FSK, White&Black PSK Faced), CertaPro AcoustaBoard Black, CertaPro AcoustaBlanket Black:	Phenol, polymer with formaldehyde and urea	25104-55-6	3% TO 11%	NDA	NDA	NDA	None	None	None

Product(s) Containing Component	Chemical Name	CAS	%(weight)	UN;EINICS	LD50/LC50	EU	OSHA PEL/TWA	ACGIH TLV/TWA	NIOSH REL
For CertaPro Commercial Board Insulation FSK & ASJ adhesive contains:	Acetic acid, vinyl ester, polymer	9003-20-7	< 11%	NDA	NDA	NDA	None	None	None
For CertaPro Commercial Board Insulation FSK and ASJ adhesive contains:	Acetic acid, ethenyl ester, polymer with ethene, rubber	24937-78-8	< 7%	NDA	NDA	NDA	None	None	None
For CertaPro AcoustBlanket Black:	Acrylic-based polymer	Proprietary	< 5%	NDA	NDA	NDA	None	None	None
For ASJ faced products:	Poly(oxyethylen eoxyterephthalo yl)	25038-59-9	5%	NDA	NDA	NDA	None	None	None
Coated/Faced Products contain:	Antimony trioxide	1309-64-4	3%	215-175-0	NDA	Carc.Cat. 3; R40	0.5 mg/m3	0.5 mg/m3	0.5 mg/m3
Coated Products contain:	Aluminum oxide	1344-28-1	< 1.5%	215-691-6	NDA	NDA	Nuisance dust: 15 mg/m3	10 mg/m3	Fume: 1.5 mg/m3
Coated Products contain:	Clay (kaolin)	1332-58-7	1.5	NDA	NDA	NDA	Nuisance dust: 15 mg/m3	2 mg/m3	10 mg/m3

This product is considered Hazardous under 29 CFR 1910.1200 (Hazard Communication). This product may be regulated, have exposure limits or other information identified as the following: Fibrous Glass
In Canada, these products are considered Hazardous under the Workplace Hazardous Materials Information System (WHMIS). According to the Globally Harmonized Standard for Classification and Labeling (GHS) this product is considered Hazardous

See Section 11 for Toxicological Information

SECTION 4 - FIRST AID MEASURES

INHALATION: Remove to fresh air, apply artificial respiration and/or oxygen if necessary and get medical attention.

SKIN: Wash exposed skin with soap and water. If irritation develops or persists, seek medical attention.

EYE: Do not rub or scratch your eyes. If irritation persists get medical attention. In case of contact, immediately flush eyes with large amounts of water, continuing to flush for 15 minutes.

INGESTION: Consult a physician if unusual reaction is noted. Product is not intended nor is it likely to be ingested or eaten.

NOTES TO PHYSICIAN: Skin irritation responds well to mild hydrocortisone cream.

See Section 2 for Potential Health Effects

SECTION 5 - FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Use any media suitable for the surrounding fires

UNSUITABLE EXTINGUISHING MEDIA: No data available

FIREFIGHTING PROCEDURES: Fire fighters should avoid inhaling any combustion products.
 Firefighters should wear full-face, self contained breathing apparatus and impervious protective clothing

UNUSUAL FIRE AND EXPLOSION HAZARDS: These products contain a cured phenolic-based binder and various facings which contain retardant systems to reduce the possibility of fire. If burned, the materials could release toxic fumes as described below. The binder and kraft facings in a fire situation may emit toxic fumes and smoke containing carbon dioxide, carbon monoxide, sulfur dioxide and other potentially toxic volatile organic compounds. The FSK facings may decompose and release carbon monoxide, carbon dioxide, hydrogen chloride, chlorine gas, antimony and traces of arsenic, oxides of arsenic and oxides of nitrogen. The ASJ facing may decompose and release carbon monoxide, carbon dioxide, hydrogen chloride, chlorine gas, antimony and traces of arsenic, oxides of arsenic, bromine gas and hydrogen bromide. The airstream facings may release carbon monoxide, carbon dioxide, antimony, hydrogen bromide, formaldehyde and trace hydrogen cyanide.

HAZARDOUS COMBUSTION PRODUCTS: The FSK facings may decompose and release carbon monoxide, carbon dioxide, hydrogen chloride, chlorine gas, antimony and traces of arsenic, oxides of arsenic and oxides of nitrogen. The ASJ facing may decompose and release carbon monoxide, carbon dioxide, hydrogen chloride, chlorine gas, antimony and traces of arsenic, oxides of arsenic, bromine gas and hydrogen bromide. The airstream facings may release carbon monoxide, carbon dioxide, antimony, hydrogen bromide, formaldehyde and trace hydrogen cyanide.

FLASH POINT: NA

FLASH POINT TEST TYPE: N/A

EXPLOSION LIMITS

UPPER: N/A LOWER: N/A

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Avoid contact with skin and eyes during clean-up.

EMERGENCY PROCEDURES: Persons not wearing appropriate protective equipment should be excluded from area of spill until clean-up has been completed. Ventilate the contaminated area.

CONTAINMENT/CLEAN-UP MEASURES: Containment of this material should not be necessary. Remove sources of ignition. Collect dust or particulates using a vacuum cleaner with a HEPA filter. Avoid the generation of dusts during clean-up.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Do not breathe dust from this material. Keep this product from heat, sparks, or open flame. Use this product with adequate ventilation. Always wash work clothes separately from other clothing. Wipe out the washer or sink to prevent loose glass fibers from getting on other clothing. Wash thoroughly after handling. Use personal protective equipment as described in Section 8.

STORAGE: Store in a dry place and under cover to protect product.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

PPE:



RESPIRATORY PROTECTION: A properly fitted NIOSH approved N 95 series disposable dust respirator such as a 3M Brand #8210, #8511, #8233 or equivalent, in high humidity environments should be used when: high dust levels are encountered; the level of glass fibers in the air exceeds the occupational exposure limits; or if irritation occurs.

RESPIRATORS: Wear NIOSH-certified respirators when handling and applying fiber glass insulation products in accordance with established exposure guidelines:

Exposure	Respirator (or equivalent)
Less than 10 times exposure guideline	1/2 mask N95 or higher, such as 3M Brand #8210, #8511 or #8233
Less than 50 times exposure guideline	Full face N100 or higher, such as 3M Brand 6000 or 7000 series

EYE/FACE PROTECTION: Safety glasses with side shields should be worn at a minimum. In dusty environments chemical goggles should be worn

SKIN/BODY PROTECTION: Work clothing sufficient to prevent all skin contact should be worn, such as coveralls, long sleeves and cap.

GENERAL INDUSTRIAL HYGIENE CONSIDERATIONS: Use good industrial hygiene practices in handling this material. Availability of eye wash fountains are recommended.

ENGINEERING MEASURES/CONTROLS: Use general ventilation and use local exhaust, where possible, in confined or enclosed spaces. Avoid spread of fiber glass dust.

LISTED EXPOSURE LIMITS:

US State California

- Clay (kaolin) (1332-58-7): **PELs:** (2 mg/m³ PEL (respirable dust containing no asbestos and < 1% crystalline silica))
- Asphalt (8052-42-4): **PELs:** (5 mg/m³ PEL)
- Aluminum oxide (1344-28-1): **PELs:** (10 mg/m³ PEL (total dust); 5 mg/m³ PEL (respirable fraction, listed under Particulates not otherwise regulated))

United States - ACGIH

- Clay (kaolin) (1332-58-7): **TWAs:** (2 mg/m³ TWA (respirable fraction, particulate matter containing no asbestos and < 1% crystalline silica)) | **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen) | **TLV Basis - Critical Effects:** (pneumoconiosis)
- Antimony oxide (1309-64-4): **Carcinogens:** (A2 - Suspected Human Carcinogen (production)) | **TLV Basis - Critical Effects:** (cancer (lung, antimony trioxide production); pneumoconiosis (antimony trioxide production)) | **No Adopted Value:** (Exposure by all routes should be carefully controlled to levels as low as possible (production))
- Asphalt (8052-42-4): **TWAs:** (0.5 mg/m³ TWA (inhalable fraction, as benzene-soluble aerosol)) | **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen (as benzene soluble aerosol)) | **TLV Basis - Critical Effects:** (irritation (as benzene-soluble aerosol))
- Aluminum oxide (1344-28-1): **TWAs:** (10 mg/m³ TWA (particulate matter containing no asbestos and < 1% crystalline silica)) | **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen) | **TLV Basis - Critical Effects:** (lung; irritation)

LISTED EXPOSURE LIMITS:

United States – OSHA

- Clay (kaolin) (1332-58-7): **TWAs:** (15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)) | **TWAs:** (10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction))
- Aluminum oxide (1344-28-1): **TWAs:** (15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)) | **TWAs:** (10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction))

United States - NIOSH

- Clay (kaolin) (1332-58-7): **TWAs:** (10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust))
- Asphalt (8052-42-4): **Ceiling Limits:** (5 mg/m3 Ceiling (15 min, fumes)) |

Canada – British Columbia

- Fibrous Glass (65997-17-3): 1 fiber/cm3 TWA (fibers longer than 5 µm, with an aspect ratio of equal to/greater than 3:1) (related to Glass wool fibers)
- Clay (kaolin) (1332-58-7): **TWAs:** (2 mg/m3 TWA (respirable, particulate matter containing no asbestos and less than 1% crystalline silica))
- Antimony oxide (1309-64-4): **Carcinogens:** (ACGIH Category A2 - Suspected Human Carcinogen; IARC Category 2B - Possible Human Carcinogen) | **Designated Substances:** (ACGIH Category A2 - Suspected Human Carcinogen; IARC Category 2B - Possible Human Carcinogen; Exposure by all routes should be carefully controlled to levels as low as possible)
- Asphalt (8052-42-4): **TWAs:** (0.5 mg/m3 TWA (fume, as inhalable benzene-soluble aerosol)) | **Carcinogens:** (IARC Category 2B - Possible Human Carcinogen) | **Designated Substances:** (IARC Category 2B - Possible Human Carcinogen)
- Aluminum oxide (1344-28-1): **TWAs:** (10 mg/m3 TWA (particulate matter containing no asbestos and less than 1% crystalline silica))

Canada – Manitoba

- Fibrous Glass (65997-17-3): 1 fiber/cm3 TWA (respirable fibers, length >5 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination) (related to Glass wool fibers)
- Clay (kaolin) (1332-58-7): **TWAs:** (10 mg/m3 TWA (The value is for total dust containing no asbestos and < 1% crystalline silica))
- Antimony oxide (1309-64-4): **TWAs:** (0.5 mg/m3 TWA (Handling and use, as Sb)) | **Carcinogens:** (A2 - Suspected Human Carcinogen (production))
- Asphalt (8052-42-4): **TWAs:** (5 mg/m3 TWA (petroleum))
- Aluminum oxide (1344-28-1): **TWAs:** (10 mg/m3 TWA (as Al, the value is for total dust containing no asbestos and < 1% crystalline silica))

Canada – New Brunswick

- Fibrous Glass (65997-17-3): 1 fibre/cm3 TWA (fibers longer than 5 µm with a diameter less than 3 µm, aspect ratio greater than 5:1) (related to Glass wool fibers)
- Clay (kaolin) (1332-58-7): **TWAs:** (2 mg/m3 TWA (particulate matter containing no asbestos and < 1% crystalline silica, respirable fraction)) | **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Antimony oxide (1309-64-4): **Carcinogens:** (A2 - Suspected Human Carcinogen (production))
- Asphalt (8052-42-4): **TWAs:** (5 mg/m3 TWA (petroleum)) | **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Aluminum oxide (1344-28-1): **TWAs:** (10 mg/m3 TWA (particulate matter containing no asbestos and < 1% crystalline silica)) | **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

Canada – Northwest Territories

- Fibrous Glass (65997-17-3): 3 fibres/cm3 TWA (with a diameter <=3.5 µm and a length >=10 µm); 5 mg/m3 TWA (total mass) (related to Mineral wool fiber)
- Clay (kaolin) (1332-58-7): **TWAs:** (5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass))
- Antimony oxide (1309-64-4): **TWAs:** (0.5 mg/m3 TWA (production, handling and use, as Sb)) | **STELs:** (1.5 mg/m3 STEL (production, handling and use, as Sb))
- Asphalt (8052-42-4): **TWAs:** (5 mg/m3 TWA) | **STELs:** (10 mg/m3 STEL)
- Aluminum oxide (1344-28-1): **TWAs:** (10 mg/m3 TWA; 5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass)) | **STELs:** (20 mg/m3 STEL)

Canada – Nova Scotia

- Fibrous Glass (65997-17-3): 1 fiber/cm3 TWA (respirable fibers, length >5 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination) (related to Glass wool fibers)
- Clay (kaolin) (1332-58-7): **TWAs:** (2 mg/m3 TWA (respirable fraction, particulate matter containing no asbestos and < 1% crystalline silica)) | **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Antimony oxide (1309-64-4): **Carcinogens:** (A2 - Suspected Human Carcinogen (production))
- Asphalt (8052-42-4): **TWAs:** (0.5 mg/m3 TWA (inhalable fraction, as benzene-soluble aerosol)) | **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen (as benzene soluble aerosol))
- Aluminum oxide (1344-28-1): **TWAs:** (10 mg/m3 TWA (particulate matter containing no asbestos and < 1% crystalline silica)) | **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

LISTED EXPOSURE LIMITS:

Canada – Nunavut

- Fibrous Glass (65997-17-3): 3 fibre/cm³ TWA (with a diameter $\leq 3.5 \mu\text{m}$ and a length $\geq 10 \mu\text{m}$); 5 mg/m³ TWA (total mass) (related to Mineral wool fiber)
- Clay (kaolin) (1332-58-7): **TWAs:** (5 mg/m³ TWA (respirable mass); 10 mg/m³ TWA (total mass))
- Antimony oxide (1309-64-4): **TWAs:** (0.5 mg/m³ TWA (production, handling and use, as Sb)) | **STELs:** (1.5 mg/m³ STEL (production, handling and use, as Sb))
- Asphalt (8052-42-4): **TWAs:** (5 mg/m³ TWA) | **STELs:** (10 mg/m³ STEL)
- Aluminum oxide (1344-28-1): **TWAs:** (10 mg/m³ TWA; 5 mg/m³ TWA (respirable mass); 10 mg/m³ TWA (total mass)) | **STELs:** (20 mg/m³ STEL)

Canada – Ontario

- Fibrous Glass (65997-17-3): 1 fibres/cm³ TWAEV (respirable, length > 5 microns, aspect ratio ≥ 3.1) (related to Glass wool fibers)
- Clay (kaolin) (1332-58-7): **TWAEVs:** (2 mg/m³ TWAEV (respirable, containing no asbestos and less than 1% crystalline silica))
- Antimony oxide (1309-64-4): **TWAEVs:** (0.5 mg/m³ TWAEV (handling and use, as Sb))
- Asphalt (8052-42-4): **TWAEVs:** (5 mg/m³ TWAEV (fumes))
- Aluminum oxide (1344-28-1): **TWAEVs:** (10 mg/m³ TWAEV (total dust))

Canada – Quebec

- Fibrous Glass (65997-17-3): 2 fibres/cm³ TWAEV (respirable) (related to Insulation wool fibers, glass wool)
- Clay (kaolin) (1332-58-7): **TWAEVs:** (10 mg/m³ TWAEV (total dust, dust containing no asbestos and less than 1% crystalline silica))
- Antimony oxide (1309-64-4): **TWAEVs:** (0.5 mg/m³ TWAEV (as Sb)) | **Carcinogens:** (C3 carcinogen - effect detected in animals)
- Asphalt (8052-42-4): **TWAEVs:** (5 mg/m³ TWAEV (fume))
- Aluminum oxide (1344-28-1): **TWAEVs:** (10 mg/m³ TWAEV (total dust, dust containing no asbestos and less than 1% crystalline silica, as Al))

Canada – Yukon

- Fibrous Glass (65997-17-3): 30 mppcf TWA; 10 mg/m³ TWA (respirable mass) (related to Mineral wool fiber)
- Clay (kaolin) (1332-58-7): **TWAs:** (30 mppcf TWA; 10 mg/m³ TWA) | **STELs:** (20 mg/m³ STEL)
- Asphalt (8052-42-4): **TWAs:** (5 mg/m³ TWA) | **STELs:** (10 mg/m³ STEL (fume))
- Aluminum oxide (1344-28-1): **TWAs:** (30 mppcf TWA; 10 mg/m³ TWA) | **STELs:** (20 mg/m³ STEL)

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Solid

APPEARANCE/DESCRIPTION: Fibers assembled into blankets or loose fill. The blankets may be faced with kraft, aluminum foil or other facings.

COLOR: Yellow		ODOR: Faint resin odor	
TASTE: No data available		ODOR THRESHOLD: NDA	
BOILING POINT:	NDA	VAPOR PRESSURE:	NDA
MELTING POINT/FREEZING POINT:	= 2200 F(= 1204 C)	VAPOR DENSITY:	NDA
SPECIFIC GRAVITY:	= 2.5	EVAPORATION RATE:	NDA
DENSITY:	= 20.8625 lbs/gal	VOC (WT.):	NDA
BULK DENSITY:	NDA	VOC (VOL.):	NDA
WATER SOLUBILITY:	Slightly Soluble	VOLATILES (WT.):	NDA
SOLVENT SOLUBILITY:	NDA	VOLATILES (VOL.):	NDA
VISCOSITY:	@	FLASH POINT:	NDA
HALF-LIFE:	NDA	FLASH POINT TEST TYPE:	NDA
OCTANOL/WATER PARTITION COEFFICIENT:	NDA	UEL:	NDA
COEFFICIENT OF WATER/OIL DISTRIBUTION:	NDA	LEL:	NDA
BIOACCUMULATION FACTOR:	NDA	AUTOIGNITION:	NDA
PH:	NDA		

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions. This material is not sensitive to mechanical impact or static discharge.

HAZARDOUS POLYMERIZATION: Hazardous polymerization not indicated.

CONDITIONS TO AVOID: Keep away from heat, ignition sources and incompatible materials.

INCOMPATIBLE MATERIALS: Hydrofluoric acid (7664-39-3)

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition may occur generating toxic fumes/vapors, oxides of carbon (COx), oxides of nitrogen (NOx).

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY: Temporary irritation may be observed in the upper respiratory system, eyes, and skin. This product has not been tested as a separate entity. Therefore, the hazards must be evaluated on the basis of the individual ingredients, and those hazards must be assumed to be additive in the absence of complete information. The hazards described in this document have been evaluated on a threshold of 1.0% for all hazardous ingredients and 0.1% for all carcinogens.

CARCINOGENIC EFFECTS: This product contains glass wool insulation fibers. Following a thorough review of all the medical-scientific data available at a meeting in October 2001, the IARC panel lowered the classification for glass wool insulation fibers from a Group 2B classification ("possibly carcinogenic to humans") to a Group 3 classification ("not classifiable as to carcinogenicity to humans"). IARC said that there is "no evidence of increased risks of lung cancer or of mesothelioma from occupational exposures during manufacturing of these materials, and inadequate evidence over all of any cancer risk."

COMPONENT CARCINOGENICITY:

Fiberglass mat, which is made from either: Continuous filament fiber glass (encapsulated) or Fibrous glass (65997-17-3):

ACGIH:	A3 - Confirmed animal carcinogen with unknown relevance to humans (related to Glass wool fibers)
NTP:	Reasonably Anticipated To Be A Carcinogen (respirable size) (related to Glass wool) (Possible Select Carcinogen)
IARC:	Monograph 81 [2002] (listed under Man-made mineral fibers), Monograph 43 [1988] (related to Insulation glass wool) (Group 3 (not classifiable))

Antimony trioxide (1309-64-4):

OSHA:	Not Listed
NTP:	Not Listed
IARC:	Group 2B- Possibly carcinogenic to humans – 2B

Acetic Acid ethenyl ester homopolymer (24937-78-8):

OSHA:	Not Listed
NTP:	Not Listed
IARC:	Group 3 – Not classifiable as to carcinogenicity to humans

SECTION 12 - ECOLOGICAL INFORMATION

PRODUCT INFORMATION: Binder-coated fiber glass is hydrophobic. Therefore, no adverse environmental effects would be expected if this product were accidentally released in the water or soil. This material is not expected to be harmful to aquatic life.

This product is not manufactured with, nor does it contain any Class I Ozone depleting chemicals as defined by EPA in Title VI of the Clean Air Act Amendments of 1990 40 CFR Part 82, Protection of Stratospheric Ozone. This product is not classified as a hazardous air pollutant in Title III Clean Air Act of 1990.

ECOLOGICAL FATE: No information available for the product.

PERSISTENCE/DEGRADABILITY: No information available for the product.

SECTION 13 - DISPOSAL CONSIDERATIONS

PRODUCT: Dispose of waste material in an approved landfill in accordance with federal, state, and local regulations. If you are unsure of the regulations, contact your Public Health Department, or the local office of the Environmental Protection Agency (EPA). See Section 7 for Handling Procedures; see Section 8 for Personal Protective Equipment recommendations.

SECTION 14 - TRANSPORTATION INFORMATION

U.S. DOT 49 CFR 172.101:

SHIPPING NAME: Not Classified as a Hazardous Material for Transport

TDG - CANADA - TRANSPORT OF DANGEROUS GOODS:

SHIPPING NAME: Not Classified as a Dangerous Good for Transport

SECTION 15 - REGULATORY INFORMATION

SARA HAZARD CLASSIFICATIONS:

Acute Health: Yes Chronic Health: Yes Fire: No Pressure: No Reactive: No

US FEDERAL:

GENERAL PRODUCT INFORMATION:

Components of this product have been checked against the non-confidential TSCA inventory by CAS Registry Number. Components not identified on this non-confidential inventory are either exempt from listing (i.e. polymers, hydrates) or are listed on the confidential inventory as declared by the supplier.

CERCLA:

This material does not contain chemicals required to be identified under CERCLA (40 CFR 302.4).

STATE REGULATIONS:
COMPONENT ANALYSIS - STATE:

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	MA	MN	NJ	PA	RI
Fiberglass mat, which is made from either: Continuous filament fiber glass (encapsulated) or Fibrous glass (*related to Mineral wool fiber)	65997-17-3	Yes	Yes	Yes	No	Yes	Yes
Antimony Trioxide	1309-64-4	Yes	Yes	Yes	Yes	Yes	Yes
Asphalt	8052-42-4	Yes	Yes	Yes	Yes	Yes	Yes
Aluminum oxide	1344-28-1	No	Yes	Yes	Yes	Yes	Yes
Clay (kaolin)	1332-58-7	No	Yes	Yes	No	Yes	Yes

CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT (PROPOSITION 65):

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING!

This product contains a chemical known to the state of California to cause cancer.

CANADIAN WHMIS INFORMATION:
GENERAL PRODUCT INFORMATION:

Not classified

COMPONENT ANALYSIS - WHMIS IDL:

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List: None

ADDITIONAL REGULATORY INFORMATION:
GENERAL PRODUCT INFORMATION:

No information available for the product.

COMPONENT ANALYSIS – INVENTORY:

Component	CAS #	TSCA	DSL	EINECS
Fiberglass mat, which is made from either: Continuous filament fiber glass (encapsulated) or Fibrous glass	65997-17-3	Yes	Yes	Yes
Asphalt	8052-42-4	Yes	Yes	Yes
Antimony Trioxide	1309-64-4	Yes	Yes	Yes
Aluminum oxide	1344-28-1	Yes	Yes	Yes
Clay (kaolin)	1332-58-7	Yes	Yes	No

Component	CAS #	TSCA	DSL	EINECS
Phenol, polymer with formaldehyde and urea	25104-55-6	Yes	Yes	No
Acetic acid, vinyl ester, polymer	9003-20-7	Yes	Yes	No
Acetic acid, ethenyl ester, polymer with ethene, rubber	24937-78-8	Yes	Yes	No

SECTION 16 - OTHER INFORMATION

PREPARATION DATE: 2/1/2009

LAST REVISION DATE: 8/1/2003

DISCLAIMER: Reasonable care has been taken in the preparation of this information, but the supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product.

For reference to the acronyms/definitions used in this MSDS please visit www.certainteed.com.

MSDS HISTORY:

MSDS REVISION SUMMARY:

Date	MSDS No.	Changes
9/16/1999	CT 10053-1	New MSDS
10/26/2001	CT 10053-2	Revised MSDS
8/01/2003	CT 10053-3	Revised MSDS
6/12/2009	CT10137-1	- MSDS number change - MSDS format change (new ANSI Z400.2004 & GHS v .2007 format) - Section 2 – GHS (v. 2007) Classifications - Section 3 – Asphalt (8052-42-4) ACGIH TLV changed from 5 to 0.5 mg/m3
4/21/2010	CT10137-1	Updated CT Logo
9/22/2011	CT 10137-2	Correction to Typographical error
10/27/2011	CT 10137-3	Add Product Literature Code

This is the end of MSDS # CT 10137-3

Air Handling Insulation

Version 1.1

Revision Date 01/30/2015

Print Date 12/15/2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : Diffuser Board, ~~Duct Liner PM~~, Linacoustic® RC,
Linacoustic® R-300, Linacoustic® RC-HP, LinaTex®, Micro-
Aire® (Duct Board), Micro-Aire® LP (Duct Board), Spiral SG,
Spiracoustic® Plus, Super-Duct® RC (Duct Board),
Microlite® Standard

Manufacturer or supplier's details

Company : Johns Manville
Address : P.O. Box 5108
Denver, CO USA 80127
Telephone : 303-978-2000 8:00AM-5:00PM M-F
Emergency telephone : 1-800-424-9300 (Chemtrec, in English)
number

Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Not a hazardous substance or mixture.

GHS Label element

Not a hazardous substance or mixture.

Other hazards

Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to fibers or dust during handling of this product and cannot occur unless there is direct contact. Trace amounts of formaldehyde may be released when contacted with moisture, including humidity. This release is most prevalent in conditions of high heat and humidity.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

Glass Fiber Product

Hazardous components

Non-hazardous according to 29 CFR 1910.1200, when used as intended.

Relevant ingredients

Chemical Name	CAS-No.	Concentration (%)
Non-biopersistent (biosoluble) glass fibers	Not Assigned	>= 70 - <= 90 %
Cured urea extended phenol-formaldehyde resin	Not Assigned	>= 10 - <= 20 %

SECTION 4. FIRST AID MEASURES

General advice : Get medical attention if symptoms occur.

If inhaled : Move to fresh air.
If symptoms persist, call a physician.

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- In case of skin contact : Take off all contaminated clothing immediately.
If on skin, rinse well with water.
Get medical attention if irritation develops and persists.
- In case of eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If eye irritation persists, consult a specialist.
- If swallowed : If symptoms persist, call a physician.
Rinse mouth with water to remove dust or fibers and drink plenty of water to help reduce irritation.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid dust formation.
- Methods and materials for containment and cleaning up : Take up mechanically.
Pick up and arrange disposal without creating dust.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
- Conditions for safe storage : Keep in a dry, cool place.
- Materials to avoid : No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Non-biopersistent (biosoluble) glass fibers	Not Assigned	TWA (fibres)	1 fibre/cm3	ACGIH

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		TWA (Inhalable fraction)	5 mg/m3	ACGIH
		TWA (fibres)	1 fibre/cm3	ACGIH
Nuisance dust	Not Assigned	TWA (Total particulate)	15 mg/m3	OSHA
		TWA (Respirable fraction)	5 mg/m3	OSHA

As a member of NAIMA, JM subscribes to the NAIMA Product Stewardship Program (NPSP). Under the NPSP, JM recommends that exposures be limited to the voluntary concentration of 1 f/cc TWA. The NPSP also includes work practice and respiratory protection recommendations. For more information, see: <http://www.naima.org/insulation-knowledge-base/health-and-safety-aspects/product-stewardship-program-for-worker-protection.html>.

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hand protection
Remarks : For prolonged or repeated contact use protective gloves.
- Eye protection : Safety glasses
- Skin and body protection : Long sleeved clothing
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : solid
- Colour : coloured
- Odour : slight
- Odour Threshold : No data available
- pH : Not applicable
- Melting point/range : Not applicable
- Flash point : Not applicable
- Evaporation rate : Not applicable
- Flammability (solid, gas) : No data available
- Upper explosion limit : Not applicable
- Lower explosion limit : Not applicable

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Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Relative density	: No data available
Density	: Not applicable
Solubility(ies)	
Water solubility	: Not applicable
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: Not applicable
Viscosity	
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: Stable under recommended storage conditions. No hazards to be specially mentioned.
Conditions to avoid	: No data available

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Inhalation**

Respiratory sensitisation: Not relevant

IARC

Group 3: Not classifiable as to its carcinogenicity to humans

Non-biopersistent
(biosoluble) glass fibers**OSHA**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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Aspiration toxicity

Not relevant

Further information**Product:**

Remarks: Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to fibers or dust during handling of this product and cannot occur unless there is direct contact. Trace amounts of formaldehyde may be released when contacted with moisture, including humidity. This release is most prevalent in conditions of high heat and humidity.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Additional ecological information : Due to the properties of the product, a hazard to the environment may not be expected.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Disposal of residual product : In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION**International transport regulations**

These products are not classified as dangerous goods according to international transport regulations.

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

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This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL.

SECTION 16. OTHER INFORMATION**Further information**

Revision Date : 01/30/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Duct Insulation

Version 1.2

Revision Date 07/21/2015

Print Date 07/21/2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : Flex-Glas® EQ, Microlite® EQ Duct Wrap (FSK and PSK faced)

Manufacturer or supplier's details

Company : Johns Manville
Address : P.O. Box 5108
Denver, CO USA 80127
Telephone : 303-978-2000 8:00AM-5:00PM M-F
Emergency telephone : 1-800-424-9300 (Chemtrec, in English)
number
Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Not a hazardous substance or mixture.

GHS Label element

Not a hazardous substance or mixture.

Other hazards

Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to fibers or dust during handling of this product and cannot occur unless there is direct contact.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

Glass Fiber Product

Hazardous components

Non-hazardous according to 29 CFR 1910.1200, when used as intended.

Relevant ingredients

Chemical Name	CAS-No.	Concentration (%)
Non-biopersistent (biosoluble) glass fibers	Not Assigned	80 %

SECTION 4. FIRST AID MEASURES

General advice : Get medical attention if symptoms occur.

If inhaled : Move to fresh air.
If symptoms persist, call a physician.

In case of skin contact : Take off all contaminated clothing immediately.
If on skin, rinse well with water.
Get medical attention if irritation develops and persists.

In case of eye contact : In case of eye contact, remove contact lens and rinse

Duct Insulation

Version 1.2

Revision Date 07/21/2015

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immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If eye irritation persists, consult a specialist.

If swallowed

: If symptoms persist, call a physician.
Rinse mouth with water to remove dust or fibers and drink plenty of water to help reduce irritation.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid dust formation.

Methods and materials for containment and cleaning up : Take up mechanically.
Pick up and arrange disposal without creating dust.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.

Conditions for safe storage : Keep in a dry, cool place.

Materials to avoid : No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Glass fibers shown to be biosoluble	Not Assigned		1 fibre/cm ³	ACGIH
Nuisance dust	Not Assigned	TWA (Total particulate)	15 mg/m ³	OSHA
		TWA (Respirable fraction)	5 mg/m ³	OSHA

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Print Date 07/21/2015

As a member of NAIMA, JM subscribes to the NAIMA Product Stewardship Program (NPSP). Under the NPSP, JM recommends that exposures be limited to the voluntary concentration of 1 f/cc TWA. The NPSP also includes work practice and respiratory protection recommendations. For more information, see: <http://www.naima.org/insulation-knowledge-base/health-and-safety-aspects/product-stewardship-program-for-worker-protection.html>.

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hand protection
Remarks : For prolonged or repeated contact use protective gloves.
- Eye protection : Safety glasses
- Skin and body protection : Long sleeved clothing
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : solid
- Colour : beige
- Odour : slight
- Odour Threshold : No data available
- pH : Not applicable
- Melting point/range : Not applicable
- Flash point : Not applicable
- Evaporation rate : Not applicable
- Flammability (solid, gas) : No data available
- Upper explosion limit : Not applicable
- Lower explosion limit : Not applicable
- Vapour pressure : Not applicable
- Relative vapour density : Not applicable
- Relative density : No data available
- Density : Not applicable

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Solubility(ies)	
Water solubility	: Not applicable
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: Not applicable
Viscosity	
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: Stable under recommended storage conditions. No hazards to be specially mentioned.
Conditions to avoid	: No data available

SECTION 11. TOXICOLOGICAL INFORMATION

IARC	Group 3: Not classifiable as to its carcinogenicity to humans Glass fibers shown to be biosoluble
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Further information**Product:**

Remarks: Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to fibers or dust during handling of this product and cannot occur unless there is direct contact.

Duct Insulation

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Revision Date 07/21/2015

Print Date 07/21/2015

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:Additional ecological
information: Due to the properties of the product, a hazard to the
environment may not be expected.**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Disposal of residual product : In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION**International transport regulations**

These products are not classified as dangerous goods according to international transport regulations.

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65: This product does not contain any chemicals known to State
of California to cause cancer, birth defects, or any other
reproductive harm.**The components of this product are reported in the following inventories:**

TSCA

: On TSCA Inventory

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Version 1.2

Revision Date 07/21/2015

Print Date 07/21/2015

DSL : All components of this product are on the Canadian DSL.

SECTION 16. OTHER INFORMATION**Further information**

Revision Date : 07/21/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Duct Insulation

Version 1.2

Revision Date 07/21/2015

Print Date 07/21/2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : Flex-Glas® EQ, Microlite® EQ Duct Wrap (FSK and PSK faced)

Manufacturer or supplier's details

Company : Johns Manville
Address : P.O. Box 5108
Denver, CO USA 80127
Telephone : 303-978-2000 8:00AM-5:00PM M-F
Emergency telephone : 1-800-424-9300 (Chemtrec, in English)
number

Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Not a hazardous substance or mixture.

GHS Label element

Not a hazardous substance or mixture.

Other hazards

Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to fibers or dust during handling of this product and cannot occur unless there is direct contact.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

Glass Fiber Product

Hazardous components

Non-hazardous according to 29 CFR 1910.1200, when used as intended.

Relevant ingredients

Chemical Name	CAS-No.	Concentration (%)
Non-biopersistent (biosoluble) glass fibers	Not Assigned	80 %

SECTION 4. FIRST AID MEASURES

General advice : Get medical attention if symptoms occur.

If inhaled : Move to fresh air.
If symptoms persist, call a physician.

In case of skin contact : Take off all contaminated clothing immediately.
If on skin, rinse well with water.
Get medical attention if irritation develops and persists.

In case of eye contact : In case of eye contact, remove contact lens and rinse

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immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If eye irritation persists, consult a specialist.

If swallowed

: If symptoms persist, call a physician.
Rinse mouth with water to remove dust or fibers and drink plenty of water to help reduce irritation.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid dust formation.

Methods and materials for containment and cleaning up : Take up mechanically.
Pick up and arrange disposal without creating dust.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.

Conditions for safe storage : Keep in a dry, cool place.

Materials to avoid : No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Glass fibers shown to be biosoluble	Not Assigned		1 fibre/cm ³	ACGIH
Nuisance dust	Not Assigned	TWA (Total particulate)	15 mg/m ³	OSHA
		TWA (Respirable fraction)	5 mg/m ³	OSHA

Duct Insulation

Version 1.2

Revision Date 07/21/2015

Print Date 07/21/2015

As a member of NAIMA, JM subscribes to the NAIMA Product Stewardship Program (NPSP). Under the NPSP, JM recommends that exposures be limited to the voluntary concentration of 1 f/cc TWA. The NPSP also includes work practice and respiratory protection recommendations. For more information, see: <http://www.naima.org/insulation-knowledge-base/health-and-safety-aspects/product-stewardship-program-for-worker-protection.html>.

Personal protective equipment

Respiratory protection	: No personal respiratory protective equipment normally required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Hand protection	
Remarks	: For prolonged or repeated contact use protective gloves.
Eye protection	: Safety glasses
Skin and body protection	: Long sleeved clothing
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: solid
Colour	: beige
Odour	: slight
Odour Threshold	: No data available
pH	: Not applicable
Melting point/range	: Not applicable : Not applicable
Flash point	: Not applicable
Evaporation rate	: Not applicable
Flammability (solid, gas)	: No data available
Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Relative density	: No data available
Density	: Not applicable

Duct Insulation

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Solubility(ies)	
Water solubility	: Not applicable
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: Not applicable
Viscosity	
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: Stable under recommended storage conditions. No hazards to be specially mentioned.
Conditions to avoid	: No data available

SECTION 11. TOXICOLOGICAL INFORMATION

IARC	Group 3: Not classifiable as to its carcinogenicity to humans Glass fibers shown to be biosoluble
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Further information**Product:**

Remarks: Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to fibers or dust during handling of this product and cannot occur unless there is direct contact.

Duct Insulation

Version 1.2

Revision Date 07/21/2015

Print Date 07/21/2015

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:Additional ecological
information: Due to the properties of the product, a hazard to the
environment may not be expected.**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Disposal of residual product : In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION**International transport regulations**

These products are not classified as dangerous goods according to international transport regulations.

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65: This product does not contain any chemicals known to State
of California to cause cancer, birth defects, or any other
reproductive harm.**The components of this product are reported in the following inventories:**

TSCA : On TSCA inventory

Duct Insulation

Version 1.2

Revision Date 07/21/2015

Print Date 07/21/2015

DSL

: All components of this product are on the Canadian DSL.

SECTION 16. OTHER INFORMATION**Further information**

Revision Date

: 07/21/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Section 1 - Product and Company Identification

Hazard Label WARNING label

Company Information

Johns Manville
Insulation Systems
P.O. Box 5108
Denver, CO 80127 USA

Telephone: 303-978-2000 8:00AM-5:00PM M-F
Internet Address: <http://www.jm.com>
Emergency: 800-424-9300 (Chemtrec, In English)

Trade Names:

13/16" Micro-Aire® Duct Board
800 Series Spin-Glas® Board Insulations, faced
Grooved Duct Board
Mat-Faced Micro-Aire® Duct Board
Micro-Flex™ Large Diameter Pipe and Tank Wrap
Microlite® Standard
Micro-Lok® HP

Micro-Lok® HP
Micro-Lok® HP Ultra
Micro-Lok® Pipe Insulation
R Series Microlite® (FSK, PSK, & vinyl faced)
Spiracoustic Plus™
SuperDuct™ RC Boards

Section 2 - Hazards Identification

Emergency Overview

Inhalation of excessive amounts of dust from the product may cause temporary upper respiratory irritation and/or congestion--remove individual to fresh air.

In high temperature applications, treatment, curing, or in geographic areas of high heat and humidity, this product may release gases irritating to the eyes, nose and throat.

Inhalation

Temporary mechanical irritation may occur upon exposure to dust or fibers released from cutting this product.

Irritation of the upper respiratory tract, coughing, and congestion may occur in extreme exposures. Severe irritation of the mouth, nose, and throat, as well as signs of central nervous system depression (drowsiness, dizziness, headache), may occur upon inhalation of vapors or gases.

Skin

Temporary irritation (itching) or redness may occur.

Ingestion

This product is not intended to be ingested (eaten). If ingested, it may cause temporary irritation to the gastrointestinal (digestive) tract.

Eyes

Temporary irritation (itching) or redness may occur.

Ears

Temporary irritation (itching) or redness may occur.

Primary Routes of Entry (Exposure)

Eyes, skin, inhalation (breathing dust and fibers) and ingestion.

Target Organs

Nose (nasal passages), throat, lungs, skin, eyes

Medical Conditions Aggravated by Exposure

Pre-existing chronic respiratory, skin, or eye diseases or conditions.

Section 3 - Composition/Information on Ingredients

CAS #	Component	Percent
Not Applicable	Continuous Filament Glass Fiber	0-10**
Not Applicable	Fiber Glass Wool	50-98
Not Available	Non-woven, AP, FSK, PSK, or vinyl facings; or vinyl, acrylic, or latex coatings	0-40
Not Available	Urea extended phenol-formaldehyde binder (cured)	2-18*
Not Available	Urea extended phenol-melamine formaldehyde binder (cured)	2-18*
Not Available	Acrylic Coating (present in SuperDuct RC and Spiracoustic Plus™ only)	0-10
50-00-0	Formaldehyde	<1

1333-86-4	Carbon black, bound (present in black products only)	<1
1309-64-4	Antimony trioxide	0.1-3

Component Information

* Binder may be either of these.

** Component of scrim facings

Antimony trioxide (fire retardant) may be present in the facings and/or adhesives. Occupational exposure to airborne antimony trioxide is not expected to occur due to product form(s) and intended use(s). Exposure limit is given for reference only.

Formaldehyde may be released by partial hydrolysis of the urea formaldehyde polymer.

General Product Description

Fibrous glass blanket, board, or formed shapes, with or without facings.

Section 4 - First Aid Measures**First Aid: Inhalation**

If dust is inhaled in excess of exposure limits referenced in section 8 of this safety data sheet, remove individual to fresh air. Drink water to clear throat, and blow nose to remove dust. A saline spray in the nose may help clear any fibers.

First Aid: Skin

Wash gently with soap and water to remove dust and fibers. Alternatively, fibers can be removed from the skin by use of ordinary masking or wrapping tape. Should irritation persist, seek medical attention.

First Aid: Ingestion

Rinse mouth with water to remove dust and fibers and drink plenty of water to help reduce irritation. If irritation persists, seek medical attention.

First Aid: Eyes

Do not rub or scratch eyes. Dust particles may cause the eye to be scratched. Flush eyes with large amounts of water until irritation subsides. If irritation persists, seek medical attention.

First Aid: Ears

Wash exposed skin with soap and water. If irritation develops in the inner ear, seek medical attention.

First Aid: Notes to Physician

Dust from the product may cause mechanical irritation of the eyes, skin, and upper respiratory tract. Treat symptomatically. Irritating gases may be released under conditions of high heat or humidity. At high levels, these could cause severe upper respiratory and eye irritation. Formaldehyde gas is a skin and respiratory sensitizer. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.

Section 5 - Fire Fighting Measures**Flash Point:** Not applicable**Upper Flammable Limit (UFL):** Not applicable**Auto Ignition:** Not determined**Rate of Burning:** Not determined**General Fire Hazards**

There is no potential for spontaneous fire or explosion. Inorganic glass fibers are naturally non-combustible and non-flammable.

Extinguishing Media

Carbon dioxide (CO₂), water, water fog, dry chemical.

Fire Fighting Equipment/Instructions

No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

Section 6 - Accidental Release Measures**Clean-Up Procedures**

Pick up large pieces. Vacuum dusts. If sweeping is necessary, use a dust suppressant such as water. Do not dry sweep dust accumulation. These procedures will help to minimize potential exposures.

Section 7 - Handling and Storage**Handling Procedures**

Use protective equipment as described in Section 8 of this safety data sheet when handling uncontained material. Handle in accordance with good industrial hygiene and safety practices.

Storage Procedures

Warehouse storage should be in accordance with package directions, if any. Material should be kept clean, dry, and in original packaging.

Section 8 - Exposure Controls / Personal Protection**Exposure Guidelines****A: General Product Information**

The Occupational Safety and Health Administration (OSHA) has not adopted specific occupational exposure standards for fiber glass. Fiber glass is treated as a nuisance dust and is regulated by OSHA as a particulate not otherwise regulated (total dust) shown in CFR 1910.1000 Table Z-3.

Respirable fraction 5 mg/m³

Total dust 15 mg/m³

JM has adopted the fiber glass industry voluntary Product Stewardship Program (PSP), formerly the NAIMA-OSHA Health and Safety Partnership Program (HSPP). Under the PSP, JM recommends that exposures be limited to the voluntary concentration of 1 f/cc TWA for fibers longer than 5 microns with a diameter less than 3 microns. This will help minimize potential irritation effects. The PSP also includes the PPE recommendations described below.

B: Component Exposure Limits**Formaldehyde (50-00-0)**

OSHA: 0.75 ppm TWA

0.5 ppm Action Level; 0.75 ppm TWA; 2 ppm STEL (Irritant and potential cancer hazard - see 29

CFR 1910.1048)

3 ppm TWA (unless specified in 1910.1048)

ACGIH: 0.3 ppm Ceiling

Carbon black, bound (present in black products only) (1333-86-4)

OSHA: 3.5 mg/m³ TWA

3.5 mg/m³ TWA

ACGIH: 3.5 mg/m³ TWA

PERSONAL PROTECTIVE EQUIPMENT**Personal Protective Equipment: Eyes/Face**

Safety glasses with side shields are recommended to keep dust out of the eyes.

Personal Protective Equipment: Ears

Use ear protection (earplugs, hood, or earmuffs) to prevent airborne dust or fibers from entering the ear, if necessary.

Personal Protective Equipment: Skin

Leather or cotton gloves should be worn to protect against mechanical abrasion. See also Personal Protective Equipment: General, below.

Personal Protective Equipment: Respiratory

A NIOSH-approved respirator should be used if ventilation is unavailable, or is inadequate for keeping levels below the applicable exposure limits referenced in Section 8 of this SDS.

Ventilation

In fixed manufacturing settings, local exhaust ventilation should be provided at areas of cutting, milling or other processing to remove airborne dust and fibers.

Personal Protective Equipment: General

Wear a cap, a loose-fitting, long-sleeved shirt and long pants to protect skin from irritation. Exposed skin areas should be washed with soap and water after handling or working with fiber glass. Clothing should be washed separately from other clothes, and the washer should be rinsed thoroughly (run empty for a complete wash cycle). This will reduce the chances of fiber glass being transferred to other clothing.

Section 9 - Physical & Chemical Properties

Appearance:	Fibrous glass blanket, board, or formed shapes, with or without facings.	Odor:	Mild formaldehyde
Physical State:	Solid	pH:	Not applicable
Vapor Pressure:	Not applicable	Vapor Density:	Not applicable
Boiling Point:	Not applicable	Melting Point:	>704°C/1300°F
Solubility (H₂O):	Nil	Specific Gravity:	Variable
VOC:	Not determined		

Section 10 - Stability & Reactivity Information**Stability**

These products are not reactive.

Hazardous Decomposition

May form carbon dioxide and carbon monoxide.

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information**Acute Toxicity****A: General Product Information**

If dust evolves from this product during use it may cause temporary mechanical irritation or scratchiness of the throat and/or itching of the eyes and skin.

Exposure to formaldehyde may cause eye and upper respiratory irritation, and possible respiratory or skin sensitization (allergy). If sensitization occurs, subsequent exposures to formaldehyde may worsen asthma or other respiratory problems, and cause allergic-type reactions.

B: Component Analysis - LD50/LC50**Formaldehyde (50-00-0)**

Inhalation LC50 Rat: 0.578 mg/L/4H; Oral LD50 Rat: 500 mg/kg

Carbon black, bound (present in black products only) (1333-86-4)

Oral LD50 Rat: >15400 mg/kg; Dermal LD50 Rabbit: >3 g/kg

Antimony trioxide (1309-64-4)

Oral LD50 Rat: >34600 mg/kg

Carcinogenicity**A: General Product Information**

Exposure to formaldehyde has been associated with the development of nasopharyngeal cancer in laboratory animals and humans. Formaldehyde has been classified as a known human carcinogen, Group 1, by the International Agency for Research on Cancer (IARC). The US National Toxicology Program (NTP) consider formaldehyde as known to be a human carcinogen. OSHA specifically regulates formaldehyde under 29 CFR 1910.1048.

B: Component Carcinogenicity**Continuous Filament Glass Fiber**

ACGIH: A4 - Not Classifiable as a Human Carcinogen (listed under Synthetic Vitreous Fibers)

IARC: Group 3 - Not Classifiable (IARC Monograph 81 [2002] (listed under Man-made mineral fibres), Monograph 43 [1988])

Fiber glass wool

NTP: Not listed.

IARC: Group 3 - Not Classifiable (IARC Monograph 81 [2002] (listed under Man-made mineral fibres), Monograph 43 [1988])

Formaldehyde (50-00-0)

ACGIH: A2 - Suspected Human Carcinogen
OSHA: 0.5 ppm Action Level; 0.75 ppm TWA; 2 ppm STEL (Irritant and potential cancer hazard - see 29 CFR 1910.1048)
NTP: Known to be a human carcinogen
IARC: Group 1 - Known Human Carcinogen

Carbon black, bound (present in black products only) (1333-86-4)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Group 2B - Possibly Carcinogenic to Humans (IARC Monograph 93 [in preparation], Monograph 65 [1996])

Antimony trioxide (1309-64-4)

ACGIH: A2 - Suspected Human Carcinogen (production)
IARC: Group 2B - Possibly Carcinogenic to Humans (IARC Monograph 47 [1989])

Chronic Toxicity

Continuous Filament Glass Fiber: No chronic health effects are known to be associated with exposure to continuous filament fiber glass. Results from epidemiologic studies have not shown any increases in respiratory disease or cancer. The International Agency for Research on Cancer (IARC) has classified continuous filament fiber glass as a Group 3 substance, not classifiable as to its carcinogenicity to humans. Because of the large diameter of continuous filament fibers, these products are not considered respirable.

Fiber Glass Wool (non-durable glass fibers):

In October 2001, IARC classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans." The 2001 decision was based on current human and animal research that shows no association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease.

In 2011, the National Toxicology Program (NTP, a component of the United States Department of Health and Human Services) issued its *12th Report on Carcinogens* (Report). The Report makes clear that any glass fibers that have been successfully assessed in an animal study and shown no cancer hazard are NOT among those "certain" fibers and NOT listed in the Report.

The glass fibers comprising the products on this MSDS have either been successfully assessed by appropriate animal protocols and / or have modeled Kdis values such that they are considered non-durable and the current human and animal research that shows no association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease is applicable to these fibers.

Section 12 - Ecological Information**Ecotoxicity****A: General Product Information**

No data available for this product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity**Formaldehyde (50-00-0)**

96 Hr LC50 Pimephales promelas: 22.6-25.7 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 1510 µg/L [static]; 96 Hr LC50 Brachydanio rerio: 41 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 0.032-0.226 ml/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 100-136 mg/L [static]; 96 Hr LC50 Pimephales promelas: 23.2-29.7 mg/L [static]
96 Hr EC50 water flea: 20 mg/L; 48 Hr EC50 Daphnia magna: 2 mg/L

Carbon black, bound (present in black products only) (1333-86-4)

24 Hr EC50 Daphnia magna: >5600 mg/L

Antimony trioxide (1309-64-4)

96 Hr LC50 Pimephales promelas: >80 mg/L [static]; 96 Hr LC50 Brachydanio rerio: >1000 mg/L [static]
72 Hr EC50 Selenastrum capricornutum: 67 mg/L
48 Hr EC50 Daphnia magna: >1000 mg/L

Section 13 - Disposal Considerations**US EPA Waste Number & Descriptions****General Product Information**

This product is not expected to be a hazardous waste when it is disposed of according to the U.S. Environmental Protection Agency (EPA) under Resource Conservation and Recovery Act (RCRA) regulations. Product characterization after use is recommended to ensure proper disposal under federal and/or state requirements.

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Section 14 - Transport Information**International Transport Regulations**

These products are not classified as dangerous goods according to international transport regulations.

Section 15 - Regulatory Information**US Federal Regulations****A: General Product Information**

SARA 311/312: This product is not classified as hazardous under SARA 311/312.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Formaldehyde (50-00-0)

SARA 302: 500 lb TPQ

SARA 313: 0.1 % de minimis concentration

CERCLA: 100 lb final RQ; 45.4 kg final RQ

Antimony trioxide (1309-64-4)

CERCLA: 1000 lb final RQ; 454 kg final RQ

State Regulations**A: General Product Information**

The glass fibers in this product are not known to be regulated.

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Formaldehyde	50-00-0	Yes	No	Yes	Yes	Yes	Yes
Carbon black, bound (present in black products only)	1333-86-4	Yes	No	Yes	Yes	Yes	Yes
Antimony trioxide	1309-64-4	Yes	No	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer.

Component	CAS #
Fiber Glass Wool (*related to Fibrous glass)	Not Applicable
Formaldehyde	50-00-0
Antimony trioxide	1309-64-4

TSCA Status

This product and its components are listed on the TSCA 8(b) inventory.

None of the components listed in this product are listed on the TSCA Export Notification 12(b) list.

International Regulations**A: General Product Information**

These products are considered articles under both U.S. and international product regulations and as such, these products do not require registration or notification on the various country-specific inventories.

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Continuous Filament Glass Fiber	Not Applicable	1 % (related to Fibrous glass)
Fiber Glass Wool	Not Applicable	1 % (related to Fibrous glass)
Formaldehyde	50-00-0	0.1 %

WHMIS Classification

Controlled Product Classification: D2A

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations. This SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information**Other Information**

Prepared for:
Johns Manville
Insulation Systems
P. O. Box 5108
Denver, CO USA 80217-5108
Prepared by:
Johns Manville Technical Center
P.O. Box 625005
Littleton, CO USA 80162-5005

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Date	MSDS #	Reason
04/28/04	1009-2.0106	Regulatory update. Minor edits.
05/20/04	1009-2.0107	Sect. 1 Removal of discontinued trade names: 824 CAN Spin-Glas®; 830 CAN Spin-Glas®; Acoustic Backing Board; BS 476, EcoTherm™ Industrial Pipe Insulation; Fabricated Duct Board; Permacote Spiracoustic™; Pipe and Tank Insulation; Rigid Round™ (faced); Spiracoustic™; SuperRound®.
08/05/04	1009-2.0108	Sect. 1 Label ID edit. Removal of discontinued trade name, Micro-Flex CTS.
03/22/05	1009-2.0108	Sect. 1 addition of Insul-SHIELD® Coated Black from MSDS 1010. Addition of Blended Blowing Wool. Edits to Sect. 2 for new additions.
10/03/05	1009-2.0110	Section 1, SuperVane was removed. Discontinued product.
11/17/05	1009-2.0111	Regulatory update. Minor edits in Sections 8, 11, and 15. Removed all revision notes prior to 2004. Revision notes are stored in database archives.
01/31/07	1009-2.0112	Addition of Micro-Lok HP to trade names. Updates made throughout SDS for current trade names listed on this SDS. Section 15 TSCA 12b edits. Removed DBDO. These products are articles under TSCA and DBDO does not need to be reported under TSCA 12b.
06/26/07	1009-2.0113	Addition of Micromat Rx to trade names. Minor edits throughout. Addition of WHMIS classification in section 15.
04/28/08	1009-2.0114	Updated SDS to GHS format.
03/16/09	1009-2.0115	Addition of 13/16" Micro-Aire® Duct Board to trade names.
11/23/09	1009-2.0116	Removed Zeston Hi-Lo Temp® Insulation Inserts from trade names.
09/07/2011	1009-2.02	Regulatory Update

Material Name: Fiber Glass Wool Commercial & Industrial Insulation

**Safety Data Sheet
ID: 1009**

09/08/2011	1009-2.03
01/11/2013	1009-2.04
12/17/2013	1009-2.05

Correction sect. 8 respiratory
Update trade names and toxicological information in section 11.
Added Micro-Lok® HP Ultra trade name.

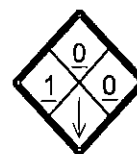
End of Sheet 1009

Knauf Insulation GmbH

Health Hazard	(1)
Fire Hazard	(0)
Physical Hazard	(0)
Personal Protection	(B)

HMIS RATING

MATERIAL SAFETY DATA SHEET



NFPA RATING

SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: Fiber Glass Insulation - ECOSE™ Technology

MSDS Number: 1014 (Rev. 6)

Trade Designations: EcoBatt™ (Unfaced and Faced) Building Insulation, EcoBatt™ QuietTherm® (Unfaced and Faced) Building Insulation, Acoustical/IB Board, Acoustical Board Smooth, Air Duct Board (Eclipse™, Type M), KB Blanket, Black Acoustical Board, Black Diffuser Board, Condensation Control Blanket, Duct Wrap (Faced and Unfaced), Earthwool™ 1000° Pipe Insulation*, ET Batt*, ET Blanket*, ET Board*, ET Panel*, Equipment Liner M, Fabrication Board*, Flexible Duct Material, Hullboard*, Insulation Board (Faced and Unfaced)*, KFR/ET Range Insulation*, KN Series, KwikFlex™*, Manufactured Housing Duct Board, Manufactured Housing Insulation, Metal Building Insulation, Metal Building Filler Insulation, Pipe & Tank Insulation*, Earthwool Redi-Klad® 1000° Pipe Insulation*, Rigid Plenum Liner, Sill Sealer, Sonic XP™ Duct Liner, Wall & Ceiling Liner M (* See Section VIII).

Manufacturer: Knauf Insulation GmbH

Date Issued: January 31, 2013

Address: One Knauf Drive

Product Stewardship Support Line: 317-398-4434, x8512

Shelbyville, IN 46176-1496

24 hr Emergency (Chemtrec) Phone: 800-424-9300

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	%	TLV	PEL
Fibrous Glass	65997-17-3	83-99	1 fiber/cc	1 fiber /cc
Proprietary Binder	N/A	1-17	None	None

Key: TLV = ACGIH, 8 hr. time weighted average (TWA); PEL = OSHA permissible exposure limit
TLV and PEL limits are for respirable fibers length <5um, diameter >3um, aspect ratio <5:1.

SECTION III - HAZARDS IDENTIFICATION

Emergency Overview:

OSHA regulations do not require respiratory protection as long as the exposure to fiber glass wool does not exceed 1 fiber/cubic centimeter (f/cc) TWA (8 hour time weighted average). Fiber Glass wool exposure in the home, commercial buildings, and manufacturing facilities are generally found to be less than 1 f/cc. Installers and fabricators should be aware of their exposure levels and take appropriate actions if needed per recommended work practices. Guidance on typical fiber exposures for various applications can be obtained from the North American Insulation Manufacturers Association, www.NAIMA.org. Knauf STRONGLY recommends following all safe work practices while working with and/or installing fiber glass wool products.

SECTION III - HAZARDS IDENTIFICATION

HMIS Rating: **Health:** 1 **Fire:** 0 **Physical Hazard:** 0 **Protection:** B

Primary Routes of Entry: Via respirable fibers to the lungs and respiratory system and airborne fibers to the skin and eyes.

Primary Target Organs: Lungs, respiratory system, skin and eyes.

Potential Health Effects:

Acute: Mechanical irritation of the skin, eyes and upper respiratory system. Fiber glass wool is classified as a nuisance dust by OSHA.

Chronic: Results from the most recent cohort and nested case-control epidemiological studies of U.S. workers exposed to glass wool have not provided evidence of an association between exposure to fibers and risk for respiratory cancer or mesothelioma.

Skin Contact: There are confirmed reports of contact dermatitis.

Eye Contact: A mechanical irritant which can cause moderate to severe eye irritation.

Ingestion: Non-hazardous when ingested. Potentially a mild irritant to the GI tract if excessive quantity is ingested.

Medical Conditions Aggravated by Exposure: Pre-existing chronic upper respiratory and lung diseases such as, but not limited to, bronchitis, emphysema and asthma. Skin disease such as dermatitis.

Biosolubility: All Knauf Insulation products covered by this MSDS are independently certified by EUCB to be manufactured using biosoluble glass formulations and thus exempt from labeling under NTP or California Prop 65 requirements.

SECTION IV - FIRST AID MEASURES

Inhalation: Remove to fresh air. Drink water to clear throat and blow nose to evacuate dust. If coughing and irritation develop, call a physician.

Eye Contact: Flush with large amounts of water until irritation subsides, as least 15 minutes. See a physician if irritation persists.

Skin Contact: Normal good personal hygiene practices. Wash with mild soap and warm water after each exposure.

Ingestion: Emergency procedures not normally required. May be a temporary irritant to the GI system.

SECTION V - FIREFIGHTING MEASURES

NFPA Rating: **Health:** 1 **Fire:** 0 **Reactivity:** 0 **Other:** 0

Extinguishing Method: Use water, foam, dry chemical or carbon dioxide.

Special Firefighting Procedures: Wear self contained breathing apparatus and protective clothing. Dense smoke may limit visibility in enclosed areas.

Fire or explosion Hazards: Resin, paper or plastic facings will burn causing dense acrid smoke.

SECTION VI - ACCIDENTAL RELEASE MEASURES

Clean-up Procedures: Pick up or shovel material into waste container taking care to minimize dust and fiber generation. Vacuum clean-up is preferred. If sweeping is required use a dust suppressant.

Personal Precautions: If dusty conditions exist, wear a face mask approved for use with dusts such as 3M 8210, N95 or equivalent.

Environmental Precautions: This product is not regulated under RCRA Hazardous Waste Regulations. May be disposed in landfill. Comply with federal, state and local regulations.

SECTION VII - HANDLING AND STORAGE

Storage Requirements: Store in dry area. Keep area clean. Vacuum clean dust. Use a dust suppressant if sweeping is necessary.

Special Sensitivity or Incompatibility: Hydrofluoric acid will react with and dissolve glass.

Handling Precautions: Assure proper respiratory protection if dust potential exceeds PEL/TLV.

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

*** Heat-Up Precautions:** During initial heat-up of high temperature insulation products to temperatures above 350°F, an odor and smoke may be given off. Adequate ventilation should be provided to protect against fumes. In confined spaces, occupants should wear self-contained breathing apparatus during this period.

Engineering Controls: Maintain sufficient mechanical or natural ventilation to assure fiber concentrations remain below PEL/TLV. Use local exhaust if necessary. Power equipment should be equipped with properly designed dust collection devices.

Respiratory Protection: When over PEL/TLV wear an approved respirator such as 3M 8210, N95 or equivalent, to protect against respirable glass wool fibers. Concentrations of fibers that exceed the recommendations of the mask manufacturer will need a higher level of respiratory protection, such as a half mask respirator with appropriate dust filters.

Eye Protection: Wear safety glasses with side shields, goggles or face shield when handling, installing or fabricating to protect eyes against dust and fibers.

Skin Protection (clothing): Long-sleeved, loose fitting clothes and head covering are recommended. Wash work clothes separately from other clothing, towels and linens to prevent fiber migration. Rinse washer thoroughly.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Brown or tan fibrous product.

Melting Point: >1300°F

Specific Gravity: Variable

Solubility in Water: Insoluble

Pure/Mixture: Mixture

SECTION X - REACTIVITY

Stability: This is a stable, non-reactive product.

Hazardous Decomposition Products: Thermal decomposition of the resin may include carbon dioxide, carbon monoxide, carbon particulate and traces of other decomposition products.

SECTION XI - TOXICOLOGICAL/ECOLOGICAL INFORMATION**LD₅₀:** N/Av**LC₅₀:** N/Av**Toxicological Hazards:** See the Emergency overview on page 1, Section II.**Ecological Hazards:** No data exists for this product.**Teratogenicity, Mutagenicity, other Reproductive Effects:** None known**SECTION XII - DISPOSAL CONSIDERATIONS**

Waste Disposal Method This product is not regulated under RCRA Hazardous Waste Regulations. May be disposed in landfill. If unsure, contact the local office of the USEPA, your local public health department or the local landfill regulators.

SECTION XIII - TRANSPORTATION INFORMATION**US DOT Shipping Name:** Not regulated**DOT Label:** None**UN/NA Number:** None**SECTION XIV - REGULATORY INFORMATION****OSHA Status:** This product is regulated as a nuisance dust under OSHA criteria.**TSCA/CEPA Status:** All components of this product are included in the TSCA and CEPA Chemical Inventories.**CERCLA Reportable Quantity:** N/Ap**SARA Title III:**

Section 302 Extremely Hazardous: This product contains no extremely hazardous substances as defined and listed in section #302.

Section 311/312 Hazard Categories: This product is not classified as hazardous.

Section 313 Toxic Chemicals: This product does not contain substances which are reportable under Section 313.

California Safe Drinking Water and Toxic Enforcement Act (Prop. 65) This product is exempt from labeling requirements under this Act.

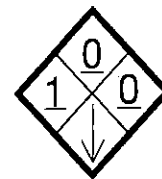
Canada (WHMIS): This product is a class D2A controlled product under Canadian WHMIS regulations.

SECTION XV - APPROVALS**Reason for Issue:** Update Sections XIV**Rev:** **Approval Date:** 1/31/13**Prepared by:** Knauf Insulation**Supersedes Date:** 1/23/13**SECTION XVI - DISCLAIMER**

As of the date of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state laws. However, no warranty or representation of law or fact, with respect to such information, is intended or given.

Health Hazard	①
Fire Hazard	①
Physical Hazard	①
Personal Protection	⑧

HMIS RATING



MATERIAL SAFETY DATA SHEET

SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT : FIBER GLASS INSULATION

MSDS NUMBER: 1004

Trade Designations: Alley-K™ Pipe Insulation*, Alley-K™ ASJ Pipe Insulation*, Alley-Wrap™, Alley-Wrap™ FSK, AK Board™, AK Board™ FSK, FDM, AK Blanket (* See Section VIII)

Manufacturer:
MANSON INSULATION PRODUCTS LTD.
4805 Lapinière, Suite 3000
Brossard, QC - CANADA - J4Z 0G2

Date Issued: January 25, 2010
Stewardship Support Line: 317-398-4434, X8212
24 hr Emergency (Chemtrec) Phone: 800-424-9300

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	%	TLV	PEL
Fibrous Glass	65997-17-3	83-97	1 fiber/cc	1 fiber /cc
Urea extended phenol formaldehyde resin	25104-55-6	3-17	None	None
Formaldehyde*	50-00-0	<0.1	0.3 ppm	0.75 ppm

Key: TLV = ACGIH, 8 hr. time weighted average (TWA); PEL = OSHA permissible exposure limit.
TLV and PEL limits are for respirable fibers length <5µm, diameter >3µm, aspect ratio <5:1.
* Formaldehyde: TLV = ACGIH Ceiling Limit for workshift; PEL = OSHA permissible exposure limit.

SECTION III - HAZARDS IDENTIFICATION

Emergency Overview: The 2002 Monograph issued by the International Agency for Research on Cancer (IARC) removed fiber glass wool from its' list of possible carcinogens (Group 2B). It is now classified as Group 3, not classifiable as to human carcinogenicity.

OSHA and other U.S. government agencies still require that a warning label be placed on this product. This warning identifies a possible hazard while not identifying the degree of risk. OSHA regulations do not require respiratory protection as long as the exposure to fiber glass wool does not exceed 1 fiber/cubic centimeter (f/cc) TWA (8 hour time weighted average). Fiber Glass wool exposure in the home, commercial buildings, and manufacturing facilities are generally found to be less than 1 f/cc. Installers and fabricators should be aware of their exposure levels and take appropriate actions if needed per recommended work practices. Guidance on typical fiber exposures for various applications can be obtained from the North American Insulation Manufacturers Association, www.NAIMA.org.

Manson STRONGLY recommends following all safe work practices while working with and/or installing fiber glass wool products.



SECTION III - HAZARDS IDENTIFICATION

PRODUCT : FIBER GLASS INSULATION

MSDS NUMBER: 1004

HMIS Rating: Health: 1 Fire: 0 Physical Hazard: 0 Protection: B

Primary Routes of Entry:

Via respirable fibers to the lungs and respiratory system and airborne fibers to the skin and eyes.

Primary Target Organs: Lungs, respiratory system, skin and eyes.

Potential Health Effects:

- Acute: Mechanical irritation of the skin, eyes and upper respiratory system.
- Chronic: Results from the most recent cohort and nested case-control epidemiological studies of U.S. workers exposed to glass wool have not provided evidence of an association between exposure to fibers and risk for respiratory cancer or mesothelioma.
- Skin Contact: There are confirmed reports of contact dermatitis.
- Eye Contact: A mechanical irritant which can cause moderate to severe eye irritation.
- Ingestion: Non-hazardous when ingested. Potentially a mild irritant to the GI tract if excessive quantity is ingested.

Medical Conditions Aggravated by Exposure:

Pre-existing chronic upper respiratory and lung diseases such as, but not limited to, bronchitis, emphysema and asthma. Skin disease such as dermatitis

Carcinogenicity:

While no longer listed as a possible carcinogen by IARC, respirable glass wool fibers are classified by NTP as Group IIB, (reasonably anticipated to be a human carcinogen). Fiber glass wool is classified as a nuisance dust by OSHA.

SECTION IV - FIRST AID MEASURES

PRODUCT : FIBER GLASS INSULATION

MSDS NUMBER: 1004

HMIS Rating: Health: 1 Fire: 0 Physical Hazard: 0 Protection: B

Primary Routes of Entry:

Inhalation: Remove to fresh air. Drink water to clear throat and blow nose to evacuate dust. If coughing and irritation develop, call a physician.

Eye Contact: Flush with large amounts of water until irritation subsides, as least 15 minutes. See a physician if irritation persists.

Skin Contact: Normal good personal hygiene practices. Wash with mild soap and warm water after each exposure.

Ingestion: Emergency procedures not normally required. May be a temporary irritant to the GI system.



SECTION V - FIREFIGHTING MEASURES

NFPA Rating: Health: 1 Fire: 0 Reactivity: 0 Other: 0

Extinguishing Method:

Use water, foam, dry chemical or carbon dioxide.

Special Firefighting Procedures:

Wear self contained breathing apparatus and protective clothing. Dense smoke may limit visibility in enclosed areas. Fire or explosion Hazards: Resin, paper or plastic facings will burn causing dense acrid smoke. In fire conditions, vinyl faced products give off hydrogen chloride, a highly irritating gas.

SECTION VI - ACCIDENTAL RELEASE MEASURES

Clean-up Procedures:

Pick up or shovel material into waste container taking care to minimize dust and fiber generation. Vacuum clean-up is preferred. If sweeping is required use a dust suppressant.

Personal Precautions: If dusty conditions exist, wear a face mask approved for use with dusts such as 3M 8210, N95 or equivalent.

Environmental Precautions: This product is not regulated under RCRA Hazardous Waste Regulations. May be disposed in landfill. Comply with federal, state and local regulations.

SECTION VII - HANDLING AND STORAGE

Storage Requirements:

Store in dry area. Keep area clean. Vacuum clean dust. Use a dust suppressant if sweeping is necessary.

Special Sensitivity or Incompatibility:

Hydrofluoric acid will react with and dissolve glass.

Handling Precautions:

Assure proper respiratory protection if dust potential exceeds PEL/TLV.

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

*** Heat-Up Precautions:** During initial heat-up of high temperature insulation products to temperatures above 350°F, an acrid odor and smoke may be given off. Adequate ventilation should be provided to protect against harmful fumes. In confined spaces, occupants should wear self-contained breathing apparatus during this period.

Engineering Controls: Maintain sufficient mechanical or natural ventilation to assure fiber concentrations remain below PEL/TLV. Use local exhaust if necessary. Power equipment should be equipped with properly designed dust collection devices.

Respiratory Protection: When over PEL/TLV wear an approved respirator such as 3M 8210, N95 or equivalent, to protect against respirable glass wool fibers. Concentrations of fibers that exceed the recommendations of the mask manufacturer will need a higher level of respiratory protection, such as a half mask respirator with appropriate dust filters.

Eye Protection: Wear safety glasses with side shields, goggles or face shield when handling, installing or fabricating to protect eyes against dust and fibers.

Skin Protection (clothing): Long-sleeved, loose fitting clothes and head covering are recommended. Wash work clothes separately from other clothing, towels and linens to prevent fiber migration. Rinse washer thoroughly.



SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Yellow or black fibrous product, slight phenol formaldehyde odor. Some products have vinyl, kraft paper, foil or glass cloth facing.

Melting Point: >1300°F

Specific Gravity: Variable

Solubility in Water: Insoluble

Pure/Mixture: Mixture

SECTION X - REACTIVITY

Stability: This is a stable, non-reactive product.

Hazardous Decomposition Products:

Thermal decomposition of the resin may include carbon dioxide, carbon monoxide, formaldehyde, carbon particulate and traces of hydrogen cyanide.

SECTION XI - TOXICOLOGICAL / ECOLOGICAL INFORMATION

LD₅₀: N/Av

LC₅₀: N/Av

Toxicological Hazards: See the Emergency overview on page 1, Section II.

Ecological Hazards: No data exists for this product.

Teratogenicity, Mutagenicity, other Reproductive Effects: None known

SECTION XII - DISPOSAL CONSIDERATIONS

Waste Disposal Method :

This product is not regulated under RCRA Hazardous Waste Regulations. May be disposed in landfill. If unsure, contact the local office of the USEPA, your local public health department or the local landfill regulators.

SECTION XIII - TRANSPORTATION INFORMATION

US DOT Shipping Name: Not regulated **DOT Label:** None **UN/NA Number:** None.

SECTION XIV - REGULATORY INFORMATION

OSHA Status: This product is regulated as a nuisance dust under OSHA criteria.

TSCA/CEPA Status: All components of this product are included in the TSCA and CEPA Chemical Inventories.

CERCLA Reportable Quantity: N/Ap

SARA Title III:

Section 302 Extremely Hazardous: This product contains no extremely hazardous substances as defined and listed in section #302.

Section 311/312 Hazard Categories: Reportable as a hazardous substance.
Check with your Local Emergency Planning Committee for reportable quantities.

Section 313 Toxic Chemicals: This product does not contain substances which are reportable under Section 313.

California Safe Drinking Water and toxic Enforcement Act (Prop. 65) Warning: This product contains the following substance known to the state to cause cancer: Glasswool, airborne particles of respirable size.

Canada (WHMIS): This product is a class D2A controlled product under Canadian WHMIS regulations.



SECTION XV - APPROVALS

Reason for Issue: Updated Product Listing
Prepared by: B. Gardner

Rev: 7 Approval Date: 01/25/10
Supersedes Date: 10/01/09

SECTION XVI - DISCLAIMER

As of the date of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state laws. However, no warranty or representation of law or fact, with respect to such information, is intended or given.



www.imanson.com



SAFE USE INSTRUCTION SHEET

Creation Date 16-Dec-1997

Revision Date 30-Oct-2015

Version 1

0. GENERAL INFORMATION

This Safe Use Instruction Sheet is the document provided by Owens Corning to communicate safe handling and use instructions for manufactured articles neither regulated by OSHA Hazard Communication Standard, 29 CFR 1910.1200 nor by the Canada Hazardous Products Regulation SOR/2015-17 (WHMIS 2015).

1. IDENTIFICATION

Product Name	700 Series Board (excludes 701 Board)
Synonyms	700 Series Board Unfaced (excludes 701 Board), AF 220, AF 500 Series, AT-400 Series, Equipment & Appliance, Fabrication Board, Fiberglass Basic for Molding, FLEXWRAP®, Insul-Quick®, Jet-Cel Acoustical, Marine Hullboard, Muffler Packing, NuKon® Insulation Blanks, Pipe & Tank Insulation, Railroad, SCR Board, SelectSound® Sanded Acoustical Board, SelectSound® Theater Board, SR & HT Range, TIW Thermal Insulation Wool, Transportation, Type 1000, QuietR® Duct Board
Product Code	OCIS00025
Recommended Use	Unfaced Insulation Board
Manufacturer Address	Owens Corning Insulating Systems, LLC One Owens Corning Parkway Toledo, Ohio 43659
Company Phone Number	1-800-GET-PINK or 1-800-438-7465
24 Hour Emergency Phone Number	Chemtrec 1-800-424-9300
Emergency Telephone	1-419-248-5330 (after 5 pm ET and weekends)
E-mail address	safetydatasheet@owenscorning.com
Company Website	http://owenscorning.com/

2. HAZARDS IDENTIFICATION

OSHA Regulatory Status

This product is considered an article. 29 CFR 1910.1200(c) definition of an article is as follows: "Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees.
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

WHMIS Regulatory Status

This product is considered an article per the Canadian Hazardous Products Regulation SOR/2015-17.
Manufactured articles which meet the definition of the Canadian Hazardous Products Act (any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, when being installed, if the intended use of the article requires it to be installed, and under normal conditions of use, will not release or otherwise cause an individual to be exposed to a hazardous product) are not regulated by the Canadian Hazardous Products

Regulation SOR/2015-17.

Other Hazards

May cause temporary skin and mucous membranes itching due to the mechanical abrasion effect of fibers.

3. COMPOSITION/INFORMATION ON INGREDIENTS

While fiberglass products may cause temporary skin and mucous membranes itching due to the mechanical abrasion effects of fibers, it does not meet the new classification definition of "irritant" contained in the OSHA HCS 29 CFR 1910.1000, Appendix A. OSHA now specifically defines an irritant as "a reversible inflammatory effect on living tissue by chemical action..." Owens Corning fiberglass is an inert material and does not interact chemically with the skin or mucous membranes.

Fiberglass, Wool 85-100
Binder - PUF 0-15

4. FIRST AID MEASURES**Description of First Aid Measures****Eye contact**

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
- DO NOT rub or scratch eyes.
- If eye irritation persists: Get medical advice/attention
- Rinse thoroughly with plenty of water, also under the eyelids
- If symptoms persist, call a physician

Skin contact

- Wash off immediately with soap and cold water
- DO NOT use warm water because this will open up the pores of the skin, which will cause further penetration of the fibers
- Use a wash cloth to help remove fibers
- DO NOT rub or scratch affected area
- Remove contaminated clothing and shoes
- If skin irritation persists, call a physician
- If fibers are seen penetrating from the skin, the fibers can be removed by applying and removing adhesive tape so that the fibers adhere to the tape and are pulled out of the skin
- Never use compressed air to remove fibers from skin
- Wash off immediately with plenty of water

Inhalation

- Remove to fresh air
- If symptoms persist, call a physician

Ingestion

- Accidental ingestion of this material is unlikely
- Rinse mouth with water and drink water to remove fibers from the throat
- If this does occur watch person for several days to make sure intestinal blockage does not occur.
- If symptoms persist, call a physician

5. FIRE-FIGHTING MEASURES**Suitable extinguishing media**

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Protective equipment and precautions for firefighters

- As in any fire, wear self-contained breathing apparatus (positive-pressure), MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

- Avoid contact with eyes and skin

Methods for cleaning up

- Use an industrial vacuum cleaner with a high efficiency filter to clean up dust and fiber contamination.
- Avoid dry sweeping.
- Pick up and transfer to properly labeled containers
- Use personal protective equipment as required
- Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry
- Take up mechanically, placing in appropriate containers for disposal
- Avoid creating dust
- Clean contaminated surface thoroughly

7. HANDLING AND STORAGE**Precautions for safe handling**

- Prevent and/or minimize dust formation.
- Do not breathe dust
- Wear appropriate personal protective equipment in case of direct contact with the product.

Storage Conditions

- Keep product in packaging until use to minimize potential dust generation.
- Product should be kept dry and undercover.

Incompatible materials

- None known based on information supplied

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL	Ontario TWA
Fiberglass wool 65997-17-3	TWA: 1 fiber/cm ³ respirable fibers: length >5 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination TWA: 5 mg/m ³ inhalable fraction	-	-	TWA: 1 fibre/cm ³ TWA: 5 mg/m ³
Formaldehyde 50-00-0	Ceiling: 0.3 ppm	TWA: 0.75 ppm (vacated) TWA: 3 ppm unless specified in 1910.1048 (vacated) STEL: 10 ppm 30 min unless specified in 1910.1048 (vacated) Ceiling: 5 ppm unless specified in 1910.1048 STEL: 2 ppm see 29 CFR 1910.1048	IDLH: 20 ppm Ceiling: 0.1 ppm 15 min TWA: 0.016 ppm	STEL: 1.0 ppm CEV: 1.5 ppm

NIOSH REL *Immediately Dangerous to Life or Health*

Engineering Controls

Provide local exhaust and/or general ventilation to maintain exposure below regulatory and recommended limits.
Dust collection system must be used in transferring operations, cutting or other dust generating processes, such as using power tools.
Vacuum or wet clean-up methods should be used.

Individual protection measures, such as personal protective equipment**Eye/face protection**

- Wear safety glasses with side shields (or goggles)

Skin and body protection

- Wear protective gloves

- Wear long-sleeved shirt and long pants.

Respiratory protection

- When workers are facing airborne particulates/dust concentrations above the exposure limits, they must use an appropriate certified respirator.
- A properly fitted NIOSH approved disposable N 95 type dust respirator or better is recommended.

General Hygiene Considerations

- Wash hands before breaks and immediately after handling products.
- Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Odor	Sweet Organic
Color	Tan, Pink, Yellow
Water solubility	Insoluble in water

10. STABILITY AND REACTIVITY

Possibility of Hazardous Reactions • None under normal processing

Hazardous Decomposition Products • None known based on information supplied

11. TOXICOLOGICAL INFORMATION**Product Information**

Fiberglass wool may cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibers.

IARC (International Agency for Research on Cancer)

In October 2001, the International Agency for Research on Cancer (IARC) classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans". The 2001 decision was based on human studies and animal research that have not shown an association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease.

NTP (National Toxicology Program)

In June 2011, The National Toxicology Program (NTP) removed biosoluble glass wool fibers from its list of possible carcinogens used for home and building insulation.

12. ECOLOGICAL INFORMATION

This product is not expected to be hazardous for the environment.

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable regional, national and local laws and regulations

14. TRANSPORT INFORMATION

This material is not subject to regulation as a hazardous material for shipping

15. REGULATORY INFORMATION**International Inventories**

This product is classified as an article. Articles are exempted from registration or listing under chemicals inventories like TSCA (USA), DSL/NDL (CAN), REACH (EU), ENCS (JP), IECSC (CN), KECL (KR), PICCS (PH), AICS (AUS).

California Proposition 65

WARNING! This product contains a chemical known in the State of California to cause cancer

16. OTHER INFORMATION

Creation Date
Revision Date
Revision Note

16-Dec-1997

30-Oct-2015

This product is classified as an Article according to OSHA 29 CFR 1910.1200 and to the Canadian Hazardous Products Regulation SOR/2015-17 (WHMIS 2015). therefore is not regulated. This Safe Use Instruction Sheet replaces the former Material Safety Data Sheet (MSDS) and is not regulated

Disclaimer

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

End of Safe Use Instruction Sheet



SAFE USE INSTRUCTION SHEET

Creation Date 01-Jun-2015

Revision Date 31-May-2015

Version 1

0. GENERAL INFORMATION

This Safe Use Instruction Sheet is the document provided by Owens Corning to communicate safe handling and use instruction for articles not regulated by OSHA Hazard Communication Standard, 29 CFR 1910.1200.

1. IDENTIFICATION

Product Name	Fiberglass Insulation Made with PureFiber® Technology Faced Products
Synonyms	Acoustical Backing Board, Attic Door Insulator, Attic Hatch Insulator, R-13 Basement Finishing System™, Batts in Bags, Cathedral Batt Insulation, Cavity Wall, Certified R, EcoTouch®, Extended Flange 25, Flame Spread 25 Hi-Perm Residential/Commercial Insulation, Insulation Batts, Insulation for Flexible Duct, Manufactured Housing Insulation, MBI Plus, Metal Building Insulation, Metal Building Utility Blanket, Metal Framing Batts, Metal Framing Insulation, NOISE Stop Blanket, PINK® Insulation, PROPINK® Fast Batt®, QuietZone® Acoustic Batt, Sonobatts®, Aishogar, Aislacoustic™, Deco SKY™, RA Series Insulation, UllCore® HP5
Product Code	OCIS00021
Recommended Use	Insulation
Manufacturer Address	Owens Corning Insulating Systems, LLC One Owens Corning Parkway Toledo, Ohio 43659
Company Phone Number	1-800-GET-PINK or 1-800-438-7465
24 Hour Emergency Phone Number	Chemtrec 1-800-424-9300
Emergency Telephone	1-419-248-5330 (after 5 pm ET and weekends)
E-mail address	safetydatasheet@owenscorning.com
Company Website	http://owenscorning.com/

2. HAZARDS IDENTIFICATION

OSHA Regulatory Status	This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is considered an article. 29 CFR 1910.1200(c) definition of an article is as follows: "Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees.
WHMIS Regulatory Status	Manufactured articles which meet the definition of the Canadian Hazardous Products Act (any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, when being installed, if the intended use of the article requires it to be installed, and under normal conditions of use, will not release or otherwise cause an individual to be exposed to a hazardous product) are not regulated by the Canadian Hazardous Products Regulation SOR/2015-17.

Other Hazards

May cause temporary skin and mucous membranes itching due to the mechanical abrasion effect of fibers.

3. COMPOSITION/INFORMATION ON INGREDIENTS

While fiberglass products may cause temporary skin and mucous membranes itching due to the mechanical abrasion effects of fibers, it does not meet the new classification definition of "irritant" contained in the OSHA HCS 29 CFR 1910.1000, Appendix A. OSHA now specifically defines an irritant as "a reversible inflammatory effect on living tissue by chemical action..." Owens Corning fiberglass is an inert material and does not interact chemically with the skin or mucous membranes.

Fiberglass, Wool 85-100%
Binder - EcoTouch - 0-15%

4. FIRST-AID MEASURES

Description of First Aid Measures

Eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
- DO NOT rub or scratch eyes.
- If eye irritation persists: Get medical advice/attention
- Rinse thoroughly with plenty of water, also under the eyelids
- If symptoms persist, call a physician

Skin contact

- Wash off immediately with soap and cold water
- DO NOT use warm water because this will open up the pores of the skin, which will cause further penetration of the fibers
- Use a wash cloth to help remove fibers
- DO NOT rub or scratch affected area
- Remove contaminated clothing and shoes
- If skin irritation persists, call a physician
- If fibers are seen penetrating from the skin, the fibers can be removed by applying and removing adhesive tape so that the fibers adhere to the tape and are pulled out of the skin
- Never use compressed air to remove fibers from skin
- Wash off immediately with plenty of water

Inhalation

- Remove to fresh air
- If symptoms persist, call a physician

Ingestion

- Accidental ingestion of this material is unlikely
- Rinse mouth with water and drink water to remove fibers from the throat
- If this does occur watch person for several days to make sure intestinal blockage does not occur.
- If symptoms persist, call a physician

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Protective equipment and precautions for firefighters

- As in any fire, wear self-contained breathing apparatus (positive-pressure), MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions**
- Avoid contact with eyes and skin
- Methods for cleaning up**
- Use an industrial vacuum cleaner with a high efficiency filter to clean up dust and fiber contamination.
 - Avoid dry sweeping.
 - Pick up and transfer to properly labeled containers
 - Use personal protective equipment as required
 - Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry
 - Take up mechanically, placing in appropriate containers for disposal
 - Avoid creating dust
 - Clean contaminated surface thoroughly

7. HANDLING AND STORAGE

- Precautions for safe handling**
- Prevent and/or minimize dust formation.
 - Do not breathe dust
 - Wear appropriate personal protective equipment in case of direct contact with the product.
- Storage Conditions**
- Keep product in packaging until use to minimize potential dust generation.
 - Product should be kept dry and undercover.
- Incompatible materials**
- None known based on information supplied

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL	Ontario TWA
Fiberglass wool 65997-17-3	TWA: 1 fiber/cm ³ respirable fibers: length >5 µm, aspect ratio ≥3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination TWA: 5 mg/m ³ inhalable fraction	-	-	TWA: 1 fibre/cm ³ TWA: 5 mg/m ³

Engineering Controls

Provide local exhaust and/or general ventilation to maintain exposure below regulatory and recommended limits.
Dust collection system must be used in transferring operations, cutting or other dust generating processes, such as using power tools.
Vacuum or wet clean-up methods should be used.

Individual protection measures, such as personal protective equipment

- Eye/face protection**
- Wear safety glasses with side shields (or goggles)
- Skin and body protection**
- Wear protective gloves
 - Wear long-sleeved shirt and long pants.
- Respiratory protection**
- When workers are facing airborne particulates/dust concentrations above the exposure limits, they must use an appropriate certified respirator.
 - A properly fitted NIOSH approved disposable N 95 type dust respirator or better is recommended.
- General Hygiene Considerations**
- Wash hands before breaks and immediately after handling products.
 - Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Odor	Sweet Organic
Color	Pink
Water solubility	Insoluble in water

10. STABILITY AND REACTIVITY

Possibility of Hazardous Reactions • None under normal processing

Hazardous Decomposition Products • None known based on information supplied

11. TOXICOLOGICAL INFORMATION

Product Information • Fiberglass wool may cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibers.

IARC (International Agency for Research on Cancer)

In October 2001, the International Agency for Research on Cancer (IARC) classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans". The 2001 decision was based on human studies and animal research that have not shown an association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease.

NTP (National Toxicology Program)

In June 2011, The National Toxicology Program (NTP) removed biosoluble glass wool fibers from its list of possible carcinogens used for home and building insulation.

12. ECOLOGICAL INFORMATION

This product is not expected to be hazardous for the environment.

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable regional, national and local laws and regulations

14. TRANSPORT INFORMATION

These products are not classified as dangerous goods according to international transport regulations.

15. REGULATORY INFORMATION

International Inventories

This product is classified as an article. Articles are exempted from registration or listing under chemicals inventories like TSCA (USA), DSL/NDL (CAN), REACH (EU), ENCS (JP), IECSC (CN), KECL (KR), PICCS (PH), AICS (AUS).

California Proposition 65

This product does not contain any Proposition 65 chemicals

16. OTHER INFORMATION

Creation Date
Revision Date
Revision Note

01-Jun-2015
31-May-2015

This product is classified as an Article according to OSHA 29 CFR 1910.1200 and to the Canadian Hazardous Products Regulation SOR/2015-17 (WHMIS 2015). therefore is not regulated. This Safe Use Instruction Sheet replaces the former Material Safety Data Sheet (MSDS) and is not regulated

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safe Use Instruction Sheet



SAFE USE INSTRUCTION SHEET

Creation Date 15-Apr-2015

Revision Date 30-Oct-2015

Version 1

0 GENERAL INFORMATION

This Safe Use Instruction Sheet is the document provided by Owens Corning to communicate safe handling and use instructions for manufactured articles neither regulated by OSHA Hazard Communication Standard, 29 CFR 1910.1200 nor by the Canada Hazardous Products Regulation SOR/2015-17 (WHMIS 2015).

1 IDENTIFICATION

Product Name	Pipe Insulation with Facing
Synonyms	Faced pipe insulation, ASJ 25 Pipe Insulation, ASJ MAX Insulation, ASJ/SSL II® Pipe Insulation, Heavy Density Pipe Insulation, No-Wrap Pipe Insulation, Pipesield, SSL® Pipe Insulation, SSL-II® Pipe Insulation, VaporWick®, Vitro Fibras Pipe Insulation, Evolution™ Paper-Free ASJ, Aislamiento para Tubería
Product Code	OCIS00029
Recommended Use	Pipe insulation
Manufacturer Address	Owens Corning Insulating Systems, LLC One Owens Corning Parkway Toledo, Ohio 43659
Company Phone Number	1-800-GET-PINK or 1-800-438-7465
24 Hour Emergency Phone Number	Chemtrec 1-800-424-9300
Emergency Telephone	1-419-248-5330 (after 5 pm ET and weekends)
E-mail address	safetydatasheet@owenscorning.com
Company Website	http://owenscorning.com/

2 HAZARDS IDENTIFICATION

OSHA Regulatory Status	This product is considered an article. 29 CFR 1910.1200(c) definition of an article is as follows: "Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees.
WHMIS Regulatory Status	This product is considered an article per the Canadian Hazardous Products Regulation SOR/2015-17. Manufactured articles which meet the definition of the Canadian Hazardous Products Act (any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, when being installed, if the intended use of the article requires it to be installed, and under normal conditions of use, will not release or otherwise cause an individual to be exposed to a hazardous product) are not regulated by the Canadian Hazardous Products Regulation SOR/2015-17.
Other Hazards	May cause temporary skin and mucous membranes itching due to the mechanical abrasion effect of fibers.

3. COMPOSITION/INFORMATION ON INGREDIENTS

While fiberglass products may cause temporary skin and mucous membranes itching due to the mechanical abrasion effects of fibers, it does not meet the new classification definition of "irritant" contained in the OSHA HCS 29 CFR 1910.1000, Appendix A. OSHA now specifically defines an irritant as "a reversible inflammatory effect on living tissue by chemical action..." Owens Corning fiberglass is an inert material and does not interact chemically with the skin or mucous membranes.

Components

Fiberglass, Wool 90-100
Binder - PUF 0-10

4. FIRST AID MEASURES

Description of First Aid Measures

Eye contact	• Rinse Immediately with plenty of water, also under the eyelids, for at least 15 minutes • DO NOT rub or scratch eyes. • If eye irritation persists: Get medical advice/attention
Skin contact	• Wash off Immediately with soap and cold water • DO NOT use warm water because this will open up the pores of the skin, which will cause further penetration of the fibers • Use a wash cloth to help remove fibers • DO NOT rub or scratch affected area • Remove contaminated clothing and shoes • If skin irritation persists, call a physician • If fibers are seen penetrating from the skin, the fibers can be removed by applying and removing adhesive tape so that the fibers adhere to the tape and are pulled out of the skin • Never use compressed air to remove fibers from skin
Inhalation	• Remove to fresh air • If symptoms persist, call a physician
Ingestion	• Accidental ingestion of this material is unlikely • Rinse mouth with water and drink water to remove fibers from the throat • If this does occur watch person for several days to make sure intestinal blockage does not occur. • If symptoms persist, call a physician

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	• Use extinguishing measures that are appropriate to local circumstances and the surrounding environment
Protective equipment and precautions for firefighters	• As in any fire, wear self-contained breathing apparatus (positive-pressure), MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	• Avoid contact with eyes and skin
Methods for cleaning up	• Use an industrial vacuum cleaner with a high efficiency filter to clean up dust and fiber contamination. • Avoid dry sweeping. • Pick up and transfer to properly labeled containers • Use personal protective equipment as required • Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry

- Take up mechanically, placing in appropriate containers for disposal
- Avoid creating dust
- Clean contaminated surface thoroughly

7. HANDLING AND STORAGE

Precautions for safe handling

- Prevent and/or minimize dust formation.
- Do not breathe dust
- Wear appropriate personal protective equipment in case of direct contact with the product.

Storage Conditions

- Keep product in packaging until use to minimize potential dust generation.
- Product should be kept dry and undercover.

Incompatible materials

- None known based on information supplied

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL	Ontario TWA
Fiberglass wool 65997-17-3	TWA: 1 fiber/cm ³ respirable fibers: length >5 µm, aspect ratio ≥3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination TWA: 5 mg/m ³ inhalable fraction	-	-	TWA: 1 fibre/cm ³ TWA: 5 mg/m ³
Formaldehyde 50-00-0	Ceiling: 0.3 ppm	TWA: 0.75 ppm (vacated) TWA: 3 ppm unless specified in 1910.1048 (vacated) STEL: 10 ppm 30 min unless specified in 1910.1048 (vacated) Ceiling: 5 ppm unless specified in 1910.1048 STEL: 2 ppm see 29 CFR 1910.1048	IDLH: 20 ppm Ceiling: 0.1 ppm 15 min TWA: 0.016 ppm	STEL: 1.0 ppm CEV: 1.5 ppm

NIOSH REL Immediately Dangerous to Life or Health

Engineering Controls

Provide local exhaust and/or general ventilation to maintain exposure below regulatory and recommended limits.

Dust collection system must be used in transferring operations, cutting or other dust generating processes, such as using power tools.

Vacuum or wet clean-up methods should be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

- Wear safety glasses with side shields (or goggles)

Skin and body protection

- Wear protective gloves
- Wear long-sleeved shirt and long pants.

Respiratory protection

- When workers are facing airborne particulates/dust concentrations above the exposure limits, they must use an appropriate certified respirator.
- A properly fitted NIOSH approved disposable N 95 type dust respirator or better is recommended.

General Hygiene Considerations • Wash hands before breaks and immediately after handling products.
• Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Odor	Faint resin
Color	Tan
Water solubility	Insoluble in water

10. STABILITY AND REACTIVITY

Possibility of Hazardous Reactions • None under normal processing

Hazardous Decomposition Products • None known based on information supplied

11. TOXICOLOGICAL INFORMATION

Product Information	Fiberglass wool may cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibers.
IARC (International Agency for Research on Cancer)	In October 2001, the International Agency for Research on Cancer (IARC) classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans". The 2001 decision was based on human studies and animal research that have not shown an association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease.
NTP (National Toxicology Program)	In June 2011, The National Toxicology Program (NTP) removed biosoluble glass wool fibers from its list of possible carcinogens used for home and building insulation.

12. ECOLOGICAL INFORMATION

This product is not expected to be hazardous for the environment.

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable regional, national and local laws and regulations

14. TRANSPORT INFORMATION

This material is not subject to regulation as a hazardous material for shipping

15. REGULATORY INFORMATION

International Inventories	This product is classified as an article. Articles are exempted from registration or listing under chemicals inventories like TSCA (USA), DSL/NDL (CAN), REACH (EU), ENCS (JP), IECSC (CN), KECL (KR), PICCS (PH), AICS (AUS).
California Proposition 65	WARNING! This product contains a chemical known in the State of California to cause cancer

16. OTHER INFORMATION

Creation Date	15-Apr-2015
Revision Date	30-Oct-2015
Revision Note	This product is classified as an Article according to OSHA 29 CFR 1910.1200 and to the Canadian Hazardous Products Regulation SOR/2015-17 (WHMIS 2015). therefore is not

regulated. This Safe Use Instruction Sheet replaces the former Material Safety Data Sheet (MSDS) and is not regulated

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safe Use Instruction Sheet

SAFETY DATA SHEET



Fiberglass H-BLOCK Insulation

Section I. Identification

Identity: Fiberglass H-BLOCK Insulation

Product Use: Pipe Support Insulation

Manufacturer's Name: ICA, Inc.

Address: 500 South Ninth Street, Lehigh, PA 18235

Emergency Telephone Number: (610) 377-6100

Telephone Number for Information: (610) 377-6100

Section II. Hazards Identification

Identifiable Components:	CAS#	OSHA PEL	ACGIH TLV
Formaldehyde	50-00-0	0.75 ppm TWA, 2 ppm STEL	0.3 ppm Ceiling

Biosolubility: The insulation products covered by this SDS are independently certified by EUCB to be manufactured using biosoluble glass formulations and thus exempt from labeling under NTP or California Prop 65 requirements.

	HMIS Rating	NFPA Rating
Health	1	1
Flammability	0	0
Reactivity:	0	0

Section III. Composition/Information on Ingredients

Common Name	Chemical Name	CAS#	Wt%
Fiberglass Wool	Fibrous Glass	65997-17-3	82-93
Cured Binder	Urea extended phenol-formaldehyde resin	25104-55-6	7-18
Formaldehyde (trace)	Formaldehyde	50-00-0	<0.1



Section IV. First Aid Measures

Primary Routes of Entry: Inhalation (breathing dust and fibers), skin, and eye contact.

Inhalation: Inhalation of excessive amounts of dust from the product may cause a scratchy throat, slight coughing, temporary upper respiratory irritation and/or congestion. Breathing large amounts of dust or fibers from this product may lead to chronic health effects as discussed in Section 11 of this safety data sheet.

Skin: Temporary irritation (itching) or redness may occur.

Ingestion: Ingestion of this material is unlikely. If ingested, it may cause temporary irritation to the gastrointestinal (digestive) tract.

Eyes: Temporary irritation (itching) or redness may occur.

Inhalation: Move to fresh air. Seek medical attention if irritation persists. Drink water to clear throat, and blow nose to remove dust. A saline spray in the nose may help clear any fibers.

Eye Contact: Do not rub or scratch eyes. Dust particles may cause the eye to be scratched. Wash eyes with running water for at least 15 minutes. Seek medical attention if irritation persists.

Skin Contact: Wash with mild soap and running water. Use a washcloth to help remove fibers. To avoid further irritation, do not rub or scratch irritated areas. Rubbing or scratching may force fiber into skin. Seek medical attention if irritation persists.

Ingestion: Ingestion of this material is unlikely. If this does occur, rinse mouth with water to remove dust and fibers and drink plenty of water to help reduce irritation. If irritation persists, seek medical attention.

Section V. Fire Fighting Measures

Flash Point, °C, Test Method:

None

Auto-Ignition Temperature:

NA

Upper Flammable Limit (UFL):

Not applicable

Lower Flammable Limit (LFL):

Not applicable

General Fire Hazards: There is no potential for spontaneous fire or explosion. Inorganic mineral wool fibers are naturally non-combustible and nonflammable. Organic binder can thermally decompose with elevated temperatures.

Extinguishing Media: Carbon dioxide (CO₂), water, water fog, dry chemical.

Fire Fighting Instructions: No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases. Use self contained breathing apparatus in a sustained fire.

Unusual Fire and Explosion Hazards: None

Section VI. Accidental Release Measures

Clean-Up Procedures: Pick up large pieces. Vacuum dusts. Place in closable container for disposal.

Section VII. Handling and Storage

No special storage or handling procedures is required for this material.

Work/Hygienic Practices: Wash work clothing separately. Wash exposed skin area immediately with warm, soapy water.

Section VIII. Exposure Controls / Personal Protection

Ingredient	OSHA PEL	ACGIH TLV
Fibrous Glass	15 mg/m ³ TWA (total particulate) 5 mg/m ³ TWA (respirable particulate)	1 fiber/cc TWA for respirable fibers longer than 5 μ m with a diameter less than 3 μ m
Cured Binder	None	None
Formaldehyde	0.75 ppm TWA, 2 ppm STEL	0.3 ppm Ceiling

Respiratory protection: Use 3M Model 8210, 8710, 9900 (in high humidity or high heat environment) or equivalent, NIOSH-certified dust respirator with efficiency rating of N95 or higher (under 42 CFR 84) when working with this product.

Skin Protection: Long-sleeved, loose fitting clothing and gloves.

Eye Protection: Goggles or face shield.

Engineering Control: General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below regulatory limits. Dust collection systems should be used in operations involving cutting or machining and may be required in operations using power tools.

Section IX. Physical and Chemical Properties

Boiling Point, °C:	NA
Vapor Pressure, mmHg at 20°C:	NA
Vapor Density (Air=1):	NA
Solubility in Water:	Insoluble
VOC, g/liter (Lb/Gallon):	0
Appearance & Odor:	Amber insulation - may possess faint resin odor.
Specific Gravity (H₂O=1):	Unknown
Volatile volume %:	0
Evaporation Rate (n-Bu. Ac.=1):	NA
pH:	Around 9
Viscosity:	NA

Section X. Stability & Reactivity Information

Stability: ☐ Unstable ☒ Stable

Incompatibility (Material to Avoid): Hydrofluoric acid.

Hazardous Polymerization: ☐ Will occur ☒ Will not occur

Photochemical Reactivity: ☐ Yes ☒ No

Hazardous Decomposition products: The decomposition products from this material are those that would be expected from any organic (carbon-containing) material, and are mainly derived from pyrolysis, or burning, of the resin. These decomposition products may include carbon monoxide, carbon dioxide and carbon particles. Formaldehyde gas may also be released during decomposition.

Section XI. Toxicological Information

Component Carcinogenicity: Mineral Wool:

A: Fiberglass Wool

IARC: Group 3 (not classifiable)
NTP: Not listed
OSHA: Not listed
ACGIH: A3 (animal carcinogen with unknown relevance to humans)

B: Formaldehyde

IRAC: Group I (carcinogen to humans)
NTP: Reasonably Anticipated to Be a Human Carcinogen
OSHA: Cancer hazard (29 CFR 1910.1048)
ACGIH: A2 (suspected human carcinogen)

Medical Conditions Aggravated by Exposure:

Chronic respiration or skin condition may temporarily worsen from exposure to these products.

Section XII. Ecological Information

Ecotoxicity

A: General Product Information

No data available for this product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Formaldehyde (50-00-0)

96 Hr EC50 water flea: 20 mg/L; 48 Hr EC50 Daphnia magna: 2 mg/L

Section XIII. Disposal Considerations

Spill Response:

Land Spill: Scoop up or vacuum material and put into suitable container for disposal as a non-hazardous waste.

Water Spill: This material will sink and disperse along the bottom of waterways and ponds. It can not easily be removed after it is waterborne; however, the material is non-hazardous in water.

Air Release: This material will settle out of the air. It can then be scooped up or vacuumed for disposal as non-hazardous waste.

RCRA Hazard Class: Non-Hazardous

Disposal Instructions: Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Section XIV. Transport Information

DOT Proper Shipping Name:

Not Regulated

ID Number:

None

DOT Classification:

Non-hazardous

Label Required:

None

Packaging Requirements:

None

RQ:

None

Max. Net Quantity in One Package:

None

International Transport Regulations: These products are not classified as dangerous goods according to international transport regulations.

Section XV. Regulatory Information

TSCA: All components are listed on TSCA Inventory: ☒ Yes ☐ No

SARA Title III:

Hazard Categories:

Acute Health: Yes

Chronic Health: Yes

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 302 Extremely Hazardous Substance List, 40 CFR 355: ☐ Yes ☒ No

Section 313 Toxic Chemical Lists, 40 CFR 372.65: ☐ Yes ☒ No

California Proposition 65:

Formaldehyde is listed as a chemical known to the state of California to cause cancer.

Glass Wool Fibers: It is exempt from labeling requirements under this act.

Section XVI. Other Information

Superseded: January 31, 2013

Revised: December 29, 2014

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Issued Date: January 26, 2016

SAFETY DATA SHEET



IAMFAB TYPE 1000°

Section I. Identification

Identity: HAMFAB TYPE 1000° Insulation - Board, Fitting Insulators

Product Use: Insulation Board, Fitting Insulators

Manufacturer's Name: ICA, Inc.

Address: 500 South Ninth Street, Lehighton, PA 18235

Emergency Telephone Number: (610) 377-6100

Telephone Number for Information: (610) 377-6100

Section II. Hazards Identification

Identifiable Components:	CAS#	OSHA PEL	ACGIH TLV
None	N/A	N/A	N/A

Biosolubility:

The insulation products covered by this SDS are independently certified by EUCB to be manufactured using biosoluble glass formulations and thus exempt from labeling under NTP or California Prop 65 requirements.

	HMIS Rating	NFPA Rating
Health	1	1
Flammability	0	0
Reactivity:	0	0

Section III. Composition/Information on Ingredients

Common Name	Chemical Name	CAS#	Wt%
Fiberglass Wool	Fibrous Glass	65997-17-3	83-92
Proprietary Cured Binder	N/A	N/A	8-17



Section IV. First Aid Measures

Primary Routes of Entry: Via respirable fibers to the lungs and respiratory system and airborne fibers to the skin and eyes.

Primary Target Organs: Lungs, respiratory system, skin and eyes.

Potential Health Effects:

Acute: Mechanical irritation of the skin, eyes and upper respiratory system. Fiber glass wool is classified as a nuisance dust by OSHA.

Inhalation: Move to fresh air. Seek medical attention if irritation persists. Drink water to clear throat, and blow nose to remove dust. A saline spray in the nose may help clear any fibers.

Eye Contact: Do not rub or scratch eyes. Dust particles may cause the eye to be scratched. Wash eyes with running water for at least 15 minutes. Seek medical attention if irritation persists.

Skin Contact: Wash with mild soap and running water. Use a washcloth to help remove fibers. To avoid further irritation, do not rub or scratch irritated areas. Rubbing or scratching may force fiber into skin. Seek medical attention if irritation persists.

Ingestion: Ingestion of this material is unlikely. If this does occur, rinse mouth with water to remove dust and fibers and drink plenty of water to help reduce irritation. If irritation persists, seek medical attention.

Section V. Fire Fighting Measures

Flash Point, °C, Test Method:

None

Auto-Ignition Temperature:

NA

Upper Flammable Limit (UFL):

Not applicable

Lower Flammable Limit (LFL):

Not applicable

General Fire Hazards: There is no potential for spontaneous fire or explosion. Inorganic glass fibers are naturally non-combustible and nonflammable. Binder can thermally decompose with elevated temperatures causing dense smoke.

Extinguishing Media: Carbon dioxide (CO₂), water, water fog, dry chemical.

Fire Fighting Instructions: No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases. Use self contained breathing apparatus in a sustained fire.

Unusual Fire and Explosion Hazards: None

Section VI. Accidental Release Measures

Clean-Up Procedures: Pick up large pieces. Vacuum dusts. Place in closable container for disposal.

Section VII. Handling and Storage

No special storage or handling procedures is required for this material.

Work/Hygienic Practices: Wash work clothing separately. Wash exposed skin area immediately with warm, soapy water.

Section VIII. Exposure Controls / Personal Protection

Ingredient	OSHA PEL	ACGIH TLV
Fibrous Glass	15 mg/m ³ TWA (total particulate) 5 mg/m ³ TWA (respirable particulate)	1 fiber/cc TWA for respirable fibers longer than 5 μ m with a diameter less than 3 μ m
Cured Binder	None	None

Respiratory protection: Use 3M Model 8210, 8710, 9900 (in high humidity or high heat environment) or equivalent, NIOSH-certified dust respirator with efficiency rating of N95 or higher (under 42 CFR 84) when working with this product.

Skin Protection: Long-sleeved, loose fitting clothing and gloves.

Eye Protection: Goggles or face shield.

Engineering Control: General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below regulatory limits. Dust collection systems should be used in operations involving cutting or machining and may be required in operations using power tools.

Section IX. Physical and Chemical Properties

Boiling Point, °C:	NA
Vapor Pressure, mmHg at 20°C:	NA
Vapor Density (Air=1):	NA
Solubility in Water:	Insoluble
VOC, g/liter (Lb/Gallon):	0
Appearance & Odor:	Brown insulation - may possess faint resin odor.
Specific Gravity (H₂O=1):	Unknown
Volatile volume %:	0
Evaporation Rate (n-Bu. Ac.=1):	NA
Melting Point: >1300°F	Viscosity: NA

Section X. Stability & Reactivity Information

Stability: ☐ Unstable ☒ Stable
Incompatibility (Material to Avoid): Hydrofluoric acid.
Hazardous Polymerization: ☐ Will occur ☒ Will not occur
Photochemical Reactivity: ☐ Yes ☒ No

Hazardous Decomposition products: The decomposition products from this material are those that would be expected from any organic (carbon-containing) material, and are mainly derived from pyrolysis, or burning, of the resin. These decomposition products may include carbon monoxide, carbon dioxide and carbon particles.

Section XI. Toxicological Information

A: LD50: N/Av **LC50:** N/Av

B: Component Carcinogenicity: Fiberglass Wool

IARC: Group 3 (not classifiable)

NTP: Not listed

OSHA: Not listed

ACGIH: A3 (animal carcinogen with unknown relevance to humans)

Medical Conditions Aggravated by Exposure: Pre-existing chronic upper respiratory and lung diseases such as, but not limited to, bronchitis, emphysema and asthma. Skin disease such as dermatitis.

Section XII. Ecological Information

Ecotoxicity: No data exists for this product.

Section XIII. Disposal Considerations

Spill Response:

Land Spill: Scoop up or vacuum material and put into suitable container for disposal as a non-hazardous waste.

Water Spill: This material will sink and disperse along the bottom of waterways and ponds. It can not easily be removed after it is waterborne; however, the material is non-hazardous in water.

Air Release: This material will settle out of the air. It can then be scooped up or vacuumed for disposal as non-hazardous waste.

RCRA Hazard Class: Non-Hazardous

Disposal Instructions: Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Section XIV. Transport Information

DOT Proper Shipping Name:

Not Regulated

ID Number:

None

DOT Classification:

Non-hazardous

Label Required:

None

Packaging Requirements:

None

RQ:

None

Max. Net Quantity in One Package:

None

International Transport Regulations: These products are not classified as dangerous goods according to international transport regulations.

Section XV. Regulatory Information

OSHA: This product is regulated as a nuisance under OSHA criteria.

TSCA: All components are listed on TSCA Inventory: ☒ Yes ☐ No

SARA Title III:

Hazard Categories:

Acute Health: Yes

Chronic Health: Yes

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 302 Extremely Hazardous Substance List, 40 CFR 355: ☐ Yes ☒ No

Section 311/312 Hazard categories: ☐ Yes ☒ No

Section 313 Toxic Chemical Lists, 40 CFR 372.65: ☐ Yes ☒ No

California Proposition 65: This product is exempt from labeling requirements under this Act.

Canada (WHMIS): This product is a class D2A controlled product.

Section XVI. Other Information

Superseded: December 10, 2013

Revised: December 29, 2014

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Issued Date: January 20, 2016



SECTION 1 – IDENTIFICATION

Product Name: FOAMGLAS® insulation, FOAMGLAS® ONE™ insulation, FOAMGLAS® HLB insulation

Manufacturer/Supplier:
Pittsburgh Corning Corporation
800 Presque Isle Drive
Pittsburgh, PA 15239

Information Number: 724-327-6100
CHEMTREC: 800/424-9300

Generic Name: Cellular glass insulation

Use: Insulation of tanks, spheres, piping, roofs and equipment. For professional use only.

Chemical Family: Mixture

General
Comments: General information and emergency information available 8:00 AM – 5:00 PM
Monday through Friday.

CHEMTREC telephone number is to be used only in the event of chemical transportation emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to technical service.

SECTION 2 – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION: Potential Irritant

SIGNAL WORD: **WARNING**

HAZARD STATEMENT: Dust in contact with skin will cause irritation.
Direct contact of dust with eyes will cause eye irritation.



HAZARDOUS
POLYMERIZATION: Will Not Occur

ROUTES OF EXPOSURE: Inhalation, Skin, Eyes and Ingestion.

IMMEDIATE EFFECTS:

INHALATION: Inhalation of cell gas may produce headache, nausea, and difficult breathing, dizziness. The sense of smell may be fatigued over time. The odor and irritating effects do not offer dependable warning to workers who may be exposed to gradually increasing amounts and therefore become used to it.

SKIN CONTACT: Irritation or abrasion from glass particles.

EYE CONTACT: Contact can cause severe irritation, inflammation of the mucous membrane, tearing, and sensitivity to light.

INGESTION: May be harmful if ingested, although this is not a likely route of entry. Ingestion can cause possible abrasion of mouth and throat from glass particles.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

ACUTE: Preexisting skin and eye disorders may be aggravated by direct contact to this product.

CHRONIC: Prolonged or repeated overexposure to airborne glass dust can lead to inflammation and scarring of lung tissue.

CARCINOGENICITY: There are no components in this product that are listed as a carcinogen by NTP, IARC, ACGIH or OSHA.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	App. % by Vol.	CAS #
Hydrogen Sulfide	< 0.1	7783-06-4
Carbon Monoxide	< 0.1	630-08-0
Carbon Dioxide	> 90	124-38-9
Glass Dust	Varies	NA

SECTION 4 - FIRST AID MEASURES

GENERAL ADVICE: Obtain special instructions before use. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible)

INHALATION: Move the exposed person to fresh air at once, apply artificial respiration if needed. Call poison center, physician or emergency medical service giving CAS names and numbers of gases. Encourage victim to cough, spit out, and blow nose to remove dust. If breathing is difficult, GET MEDICAL ATTENTION.

SKIN CONTACT: Wash thoroughly without pressure. If irritation persists or skin is broken, consult physician.

EYE CONTACT: Flush with potable water for 15 minutes, do not rub or apply pressure. Consult physician or emergency medical service.

INGESTION: An unlikely route of entry. Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Call a physician immediately

SECTION 5 – FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Fine Water Spray, CO₂, Dry Chemical, Foam. If entering a confined area, use self-contained breathing apparatus.

EXPLOSION DATA:

SENSITIVITY TO MECHANICAL IMPACT: NA

SENSITIVITY TO STATIC DISCHARGE: NA

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None. This product is not flammable.

HAZARDOUS COMBUSTION PRODUCTS:

None known.

SPECIAL FIRE FIGHTING MEASURES:

May release small amounts of hydrogen sulfide and carbon monoxide gas when involved in a fire. The small amounts of hydrogen sulfide and carbon monoxide released are not expected to contribute to the intensity of a fire. Wear self-contained breathing apparatus and protective clothing.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

PRECAUTIONS FOR PERSONNEL:

Do not get in eyes, on skin, or on clothing. Do not breathe dust. Avoid generating dust

Wear personal protective equipment. Refer to recommendations in section 8.

Avoid contact with eyes, skin and clothing.

Wash thoroughly after handling and before eating or drinking.

ENVIRONMENTAL PRECAUTIONS:

Ensure adequate ventilation. Use dustless methods. All in accordance with local, state and federal government regulations.

PROCESS FOR CLEANING:

Collect in sift proof containers. Avoid generation of dust.

REGULATORY REQUIREMENTS:

Follow applicable OSHA regulations (29 CFR 1910.120).

SECTION 7 – HANDLING AND STORAGE

HANDLING: Avoid generation of dust. Wash hands before eating, drinking, smoking or using toilet. Keep out of reach of children.

STORAGE: If storing for long periods, protect product from weather.

SECTION 8 – EXPOSURE RESTRICTIONS AND PERSONAL PROTECTION**EXPOSURE LIMITS**

Ingredient	App. % by Vol.	TLV	NIOSH REL TWA	PEL	CAS #
Hydrogen Sulfide	<0.1	1 ppm	UN	10 ppm TWA	7783-06-4
Carbon Monoxide	<0.1	25 ppm	UN	50 ppm TWA	630-08-0
Carbon Dioxide	>90	5000 ppm	UN	5000 ppm TWA	124-38-9
Glass Dust	Varies	10 mg/m ³	UN	15 mg/m ³ 5 mg/m ^{3a} (^a respirable)	NA

EXPOSURE GUIDELINES:

When exposed to dust above recommended limits, wear a suitable NIOSH-approved respirator with a protection factor appropriate for the level of exposure. Seek guidance from a qualified industrial hygienist or safety professional, prior to respirator selection and use.

ENGINEERING CONTROLS:

When cutting, grinding, crushing, or drilling FOAMGLAS® insulation, provide general or local ventilation systems, as needed, to maintain airborne dust concentrations below the regulatory limits. Local vacuum collection is preferred since it prevents release of contaminants into the work area by controlling it at the source. Other technologies that may aid in controlling airborne respirable dust include wet suppression, ventilation, process enclosure, and enclosed employee work stations.

PERSONAL PROTECTIVE EQUIPMENT:**EYE PROTECTION:**

When cutting, grinding, crushing, or drilling FOAMGLAS® insulation, wear safety glasses with side shields or dust goggles in dusty environments. Wear goggles for dust protection while cutting or abrading in wind or overhead work.

SKIN PROTECTION:

Wear rubber impregnated canvas gloves for abrasion protection. Wear normal protective work clothing with long sleeved shirt.

**RESPIRATORY
PROTECTION:**

Use nuisance dust mask when cutting or abrading with adequate ventilation. Seek guidance from a qualified industrial hygienist or safety professional, prior to dust mask/respirator selection and use. (Supplied air or self-contained breathing apparatus in poorly ventilated areas is required when cutting or crushing of FOAMGLAS® insulation causes PEL of hydrogen sulfide and carbon monoxide gases to be exceeded.

**ENVIRONMENTAL EXPOSURE
CONTROL:**

Use local exhaust when cutting. Use mechanical ventilation when crushing large volumes.

WORK/HYGIENIC PRACTICES:

Avoid contact with eyes and skin. Wash thoroughly after handling and before eating or drinking.

SPECIAL PRECAUTIONS:

Respirable dust particles may be generated by crushing, cutting, grinding or drilling FOAMGLAS® insulation. Follow protective controls listed in the Exposure Guidelines above when handling these products.

SECTION 9 – PHYSICAL PROPERTIES

Appearance:	Black cellular solid	Flash Point : °C (°F) TCC	NA
Odor:	no odor unless cut or crushed, rotten egg odor when cells are crushed or cut	Ignition Temperature: °C (°F)	NA
Odor Threshold:	0.002 ppm	Evaporation Rate (BuAC=1)	NA
pH	NA	Flammability:	Non-Flammable
Melting Point/Freezing Point: °C (°F)	732 (1350)	Flammable Limits: LEL	NA
		UEL	NA
Boiling Point: °C (°F)	NA	Vapor Pressure: (MM Hg): pH:	NA
Solubility in Water:	Insoluble	Vapor Density: (Air = 1)	NA
Partition Coefficient: n-octanol/water:	NA	Specific Gravity: (H ₂ O = 1):	0.11 – 0.22
Viscosity	NA	Evaporation Rate: (BuAC=1)	NA
VOC: g/l (lbs./gal)	0.0 (0.0)	Percent Volatile By Volume: (%)	NA

SECTION 10 – STABILITY AND REACTIVITY**REACTIVITY:**

Hazardous reactions will not occur under normal conditions.

STABILITY:

Stable

**POSSIBILITY OF HAZARDOUS
REACTIONS:**

Hazardous reaction will not occur

CONDITIONS TO AVOID:

NA

MATERIALS TO AVOID:

NA

DECOMPOSITION PRODUCTS:

None

SECTION 11 – TOXICOLOGICAL INFORMATION

CAS #	INGREDIENT	DERMAL LD50	INHALATION LD50	ORAL LD50
7783-06-4	Hydrogen Sulfide	NE	444 ppm-rat 634 ppm-mus	NE
630-08-0	Carbon Monoxide	NE	1807 ppm-rat 2444 ppm-mus	NE
124-38-9	Carbon Dioxide	NE	NE	NE
NA	Glass Dust	NE	NE	NE

CAS #	INGREDIENT	CARCINOGENICITY		TERATOGENICITY	MUTAGENICITY
		ACGIH	IARC		
7783-06-4	Hydrogen Sulfide	NE	NE	NE	NE
630-08-0	Carbon Monoxide	NE	NE	NE	NE
124-38-9	Carbon Dioxide	NE	NE	NE	NE
NA	Glass Dust	NE	NE	NE	NE

SECTION 12 – ECOLOGICAL INFORMATION

BIODEGRADATION: NA

BIOACCUMULATION: NA

AQUATIC TOXICITY: NA

OTHER INFORMATION: None

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

SECTION 14 – TRANSPORT INFORMATION

SPECIAL SHIPPING INFORMATION: Not regulated
DOT SHIPPING CLASS: Not regulated.
TDG: Not regulated.
IATA: Not regulated

SECTION 15 – REGULATORY INFORMATION

US Regulatory Information

OSHA 29 CFR 1910-1200

TSCA

Irritant

All components of this product are listed on TSCA Inventory

SARA Title III:

SARA SECTION 302: None

SARA SECTION 304: NA

SARA (311,312) HAZARD CLASS: None

SARA (313) CHEMICALS: None

CERCLA:

RCRA:

CPSC CLASSIFICATION:

NA

Refer to section 13

NA

HMIS: FLAMMABILITY: 0 REACTIVITY: 0 HEALTH: 0

NFPA: FLAMMABILITY: 0 REACTIVITY: 0 HEALTH: 0

WHMIS CLASSIFICATION:

D2B

**CALIFORNIA PROPOSITION 65:**

- ☐ A. This product contains a chemical known to the State of CA to cause birth defects or other reproductive harm.
- ☐ B. This product contains a chemical known to the State of CA to cause cancer.
- ☐ C. This product contains a chemical known to the State of CA to cause cancer and birth defects or other reproductive harm.

SECTION 16 – OTHER INFORMATION

Prepared in accordance with 29 CFR 1910.1200

This Product has been classified in accordance with the hazard criteria of the Controlled Products

NA = not applicable

NE = not established

UN = unavailable

CL = Ceiling Limit

NEGL = Negligible

PROP. = Proprietary

"THE DATA INCLUDED HEREIN ARE PRESENTED IN ACCORDANCE WITH THE VARIOUS ENVIRONMENT, HEALTH AND SAFETY REGULATIONS. IT IS THE RESPONSIBILITY OF A RECIPIENT OF THIS DATA TO REMAIN CURRENTLY INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS OWN PROGRAM AND TO COMPLY WITH ALL NATIONAL, FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS APPLICABLE TO SAFETY, OCCUPATIONAL HEALTH, RIGHT-TO-KNOW AND ENVIRONMENTAL PROTECTION."

WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE, PITTSBURGH CORNING MAKES NO WARRANTY WITH RESPECT THERETO, AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

FOAMGLAS® is a registered trademark of Pittsburgh Corning.



SECTION 1 – IDENTIFICATION

Product Name: PITTWRAP® B80 jacketing

Manufacturer/Supplier:
Pittsburgh Corning Corporation
800 Presque Isle Drive
Pittsburgh, PA 15239

Information Number: 724-327-6100
CHEMTREC: 800/424-9300

Generic Name: Aluminum-butyl laminate jacket

Use: PITTWRAP® B80 jacketing is a self-sealing aluminum foil laminate membrane for protecting above ground FOAMGLAS® insulation systems.

Chemical Family: Mixture

General Comments: General information and emergency information available 8:00 AM – 5:00 PM Monday through Friday.

CHEMTREC telephone number is to be used only in the event of chemical transportation emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to technical service.

SECTION 2 – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION: Potential Irritant

SIGNAL WORD: **WARNING**

HAZARD STATEMENT: Repeated or prolonged contact with skin may cause irritation.



HAZARDOUS POLYMERIZATION: Will Not Occur

ROUTES OF EXPOSURE: Skin

IMMEDIATE EFFECTS:

INHALATION: Due to the physical nature of this product, inhalation is unlikely.

SKIN CONTACT: Skin contact can cause irritation. Prolonged skin contact can result in dermatitis.

EYE CONTACT: Due to the physical nature of this product, eye contact is unlikely. Direct contact can cause irritation.

INGESTION: Due to the physical nature of this product, ingestion is unlikely. Effects include: Nausea, vomiting and diarrhea. May cause irritation of the mouth, throat and digestive system. Wash hands before eating.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

ACUTE: Individuals with pre-existing skin disorders may be at increased risk for worsening their condition from exposure to this product.

CHRONIC: Prolonged contact may defat and dry the skin leading to possible irritation and dermatitis.

Carcinogenicity – There are no components in this product that are listed as a carcinogen by NTP, IARC, ACGIH or OSHA.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

This product does not contain any hazardous chemicals as defined by OSHA regulations found in 29 CFR 1910.1200.

SECTION 4 – FIRST AID MEASURES

GENERAL ADVICE: Exposure to product can produce symptoms which include skin irritation

INHALATION: An unlikely route of entry. If symptoms develop remove to fresh air. Consult a physician immediately.

SKIN CONTACT: In case of skin contact, clean fingernails and wash skin with waterless hand-cream or abrasive soap followed by soap and water. If residue remains, clean with waterless hand-cream or abrasive soap. Never use solvents. Remove contaminated clothing and wash before reuse. If irritation rash or other symptoms develop, get medical attention immediately.

EYE CONTACT: Immediately flush eyes with water for at least 15 minutes while holding eyelids open. Get immediate medical attention.

INGESTION: An unlikely route of entry. If swallowed, contact a physician immediately. Never give anything by mouth to an unconscious person. The decision to induce vomiting should only be made by a physician.

SECTION 5 – FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Fine Water Spray, CO₂, Dry Chemical, Foam. If entering a confined area, use self-contained breathing apparatus.

EXPLOSION DATA:

SENSITIVITY TO MECHANICAL IMPACT: NA

SENSITIVITY TO STATIC DISCHARGE: NA

UNUSUAL FIRE AND EXPLOSION HAZARDS: None. This product is not considered flammable.

HAZARDOUS COMBUSTION PRODUCTS: Thermal decomposition may produce smoke, toxic fumes, Carbon Monoxide, Carbon dioxide, and hydrocarbons.

SPECIAL FIRE FIGHTING MEASURES: Wear self-contained breathing apparatus and complete personal protective equipment when potential for exposure to vapors or products of combustion exist. Avoid breathing hazardous vapors or products of combustion, keep upwind. Isolate area and keep unnecessary people away. Prevent run-off from fire, control or dilution from entering streams or drinking water supplies.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

PRECAUTIONS FOR PERSONNEL: Ensure adequate ventilation. No special clothes are required, but do wear gloves. Promptly cleanse hands with waterless hand cleaner, clean

fingernails and wash with soap and water after handling. Avoid contact with eyes, skin and clothing. Practice good personal hygiene to avoid ingestion. Wash thoroughly after handling and before eating or drinking. Use only with adequate ventilation. Wash clothing before reuse. Refer to recommendations in section 8.

ENVIRONMENTAL PRECAUTIONS: No special procedures normally needed. Avoid contact with strong oxidizers like chlorine, pure oxygen or calcium hypochlorite.

PROCESS FOR CLEANING: Scrape up and place in a container fitted with a lid.

REGULATORY REQUIREMENTS: Follow applicable OSHA regulations (29 CFR 1910.120).

SECTION 7 – HANDLING AND STORAGE

HANDLING: Avoid direct contact with product. General ventilation is recommended.

STORAGE: Store under dry warehouse conditions away from heat and all ignition sources.

SECTION 8 – EXPOSURE RESTRICTIONS AND PERSONAL PROTECTION

EXPOSURE LIMITS

Ingredient	App. % by wt.	TLV	NIOSH REL TWA	PEL	CAS #
None					

EXPOSURE GUIDELINES:

No established limits.

ENGINEERING CONTROLS:

No specific controls are needed.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION:

Wear safety glasses or goggles to avoid eye contact.

SKIN PROTECTION:

Wear oil impervious gloves to minimize contact with skin. Wear normal protective work clothing with long sleeved shirt.

RESPIRATORY PROTECTION:

Not required.

ENVIRONMENTAL EXPOSURE CONTROL:

No specific controls are needed.

WORK/HYGIENIC PRACTICES:

Avoid contact with eyes and skin. Wash thoroughly after handling and before eating or drinking.

SECTION 9 – PHYSICAL PROPERTIES

Appearance:	An aluminum foil sheet with a grey rubberized backing.	Flash Point : °C (°F) COC	>185(365)
Odor:	Negligible	Ignition Temperature: °C (°F)	NA
Odor Threshold:	NE	Evaporation Rate (BuAC=1)	NA
pH	NE	Flammability:	Non-Flammable
Melting Point/Freezing Point: °C (°F)	UN	Flammable Limits: LEL	NA
Boiling Point: °C (°F)	NE	UEL	NA
Solubility in Water:	Insoluble	Vapor Pressure: (MM Hg): pH:	NA
Partition Coefficient: n-octanol/water:	NE	Vapor Density: (Air = 1)	NA
Decomposition Temperature	NE	Specific Gravity: (H₂O = 1):	1.5 – 1.7
Viscosity	NA	Density: kg/l (lbs./gal)	1.5 – 1.7
VOC: g/l (lbs./gal)	0.0 (0.0)	(Calculated)	(12.5 – 14.2)
		Evaporation Rate: (BuAC=1)	NA
		Percent Volatile By Volume: (%)	Negligible

SECTION 10 – STABILITY AND REACTIVITY

REACTIVITY: Can react with strong oxidizers. Material is combustible and should be stored away from excessive heat and flames.

STABILITY: Stable

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous reaction will not occur

CONDITIONS TO AVOID: Open Flame.

MATERIALS TO AVOID: Strong oxidizers like chlorine, pure oxygen or calcium hypochlorite

DECOMPOSITION PRODUCTS: Will produce fumes, carbon monoxide, sulfur oxides, and various other complex hydrocarbons during combustion.

SECTION 11 – TOXICOLOGICAL INFORMATION

CAS #	INGREDIENT	DERMAL LD50	INHALATION LD50	ORAL LD50
	None			

CAS #	INGREDIENT	CARCINOGENICITY ACGIH IARC	TERATOGENICITY	MUTAGENICITY
	None			

SECTION 12 – ECOLOGICAL INFORMATION

BIODEGRADATION: No information is available.

BIOACCUMULATION: No information is available.

AQUATIC TOXICITY: No information is available.

OTHER INFORMATION: None

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Disposal should be made in accordance with Federal, State and Local regulations. Before attempting clean up, refer to hazardous information listed on this sheet. Waste of this product is not defined as hazardous according to U.S. EPA (40 CFR § 261.3) Incinerate at EPA (Environmental Protection Agency) approved facility or dispose of waste in compliance with state and local regulations.

SECTION 14 – TRANSPORT INFORMATION

SPECIAL SHIPPING INFORMATION: None

DOT SHIPPING CLASS: Not regulated.

TDG: Not available.

PIN: Not available

SECTION 15 – REGULATORY INFORMATION

Rotterdam Convention (PIC) Annex III: NA

US Regulatory Information

OSHA 29 CFR 1910-1200

TSCA

SARA Title III:

Irritant

All components of this product are listed on TSCA Inventory

SARA SECTION 302: None

SARA SECTION 304: None

SARA (311,312) HAZARD CLASS: None

SARA (313) CHEMICALS: None

CERCLA:

RCRA:

CPSC CLASSIFICATION:

NA

Refer to section 13

NA

HMIS: FLAMMABILITY: 1 REACTIVITY: 0 HEALTH: 0

NFPA: FLAMMABILITY: 1 REACTIVITY: 0 HEALTH: 0

WHMIS CLASSIFICATION: D2B

CALIFORNIA PROPOSITION 65:

☐ A. This product contains a chemical known to the State of CA to cause birth defects or other reproductive harm.☐ B. This product contains a chemical known to the State of CA to cause cancer.☐ C. This product contains a chemical known to the State of CA to cause cancer and birth defects or other reproductive harm.

SECTION 16 – OTHER INFORMATION

Prepared in accordance with 29 CFR 1910.1200

This Product has been classified in accordance with the hazard criteria of the Controlled Products

NA = not applicable

NE = not established

UN = unavailable

CL = Ceiling Limit

NEGL = Negligible

PROP. = Proprietary

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PITTWRAP® and FOAMGLAS® are registered trademarks of Pittsburgh Corning.

Safety Data Sheet

SECTION 1 – IDENTIFICATION

Product Name: PITWRAP® jacketing

Manufacturer/Supplier:
Pittsburgh Corning
800 Presque Isle Drive
Pittsburgh, PA 15239

Information Number: 724-327-6100
CHEMTREC: 800/424-9300

Generic Name: Bitumen resin tape

Use: PITWRAP® jacketing is a heat sealable multiple laminate, modified bituminous membrane for protecting underground FOAMGLAS® insulation systems.

General Comments: General information and emergency information available 8:00 AM – 5:00 PM Monday through Friday.

CHEMTREC telephone number is to be used only in the event of chemical transportation emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to technical service.

SECTION 2 – HAZARD(S) IDENTIFICATION

HAZARDOUS POLYMERIZATION: Will Not Occur

ROUTES OF EXPOSURE: Inhalation, Skin, Eyes and Ingestion.

IMMEDIATE EFFECTS:

INHALATION: Due to the nature of the product, there is no inhalation hazard. Heated vapors may cause irritation of nasal passages and throat.

SKIN CONTACT: Normally not irritating. If rash develops or irritation persists, seek physician.

EYE CONTACT: If eye contact is made and irritation develops, contact physician.

INGESTION: Due to nature of product ingestion is not likely. If ingested, see physician.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

ACUTE: Inhalation – exposure during hot process may cause respiratory, eye, or nose irritation.

CHRONIC: Inhalation – Long term exposure to concentrated hot processing fumes may reduce lung function and cause chronic bronchitis

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	App. % by wt.	CAS #
Asphalt	80 -95	8052-42-4
Aromatic Oil	5-15	64742-04-7
Petroleum Resins	<2	64742-16-1

Safety Data Sheet

SECTION 4 – FIRST AID MEASURES

GENERAL ADVICE:

INHALATION: Due to the nature of the product, there is no inhalation hazard. Heated vapors may cause irritation of nasal passages and throat. If a person breathes large amounts of heated product vapors, move the exposed person to fresh air at once. If breathing difficult, GET MEDICAL ATTENTION.

SKIN CONTACT: Normally not irritating. If rash develops or irritation persists, seek physician.

EYE CONTACT: Remove contact lenses. Flush eyes with large amounts of water, preferably lukewarm water, for at least 15 minutes. If irritation persists, GET MEDICAL ATTENTION.

INGESTION: Due to nature of product ingestion is not likely. If ingested, see physician.

SECTION 5 – FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Foam, Carbon Dioxide or dry chemical. If entering a confined area, use self-contained breathing apparatus if applicable

EXPLOSION DATA:

SENSITIVITY TO MECHANICAL IMPACT: Stable.

SENSITIVITY TO STATIC DISCHARGE: Stable.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

PRECAUTIONS FOR PERSONNEL: No special clothes are required, but do wear gloves.

ENVIRONMENTAL PRECAUTIONS: No special procedures normally needed.

PROCESS FOR CLEANING: Absorb with inert material. Remove sources of ignition. Scoop material with non-sparking tools.

SECTION 7 – HANDLING AND STORAGE

HANDLING: Avoid direct contact with product. No special ventilation required.

STORAGE: Store away from ignition sources and open flames.

SECTION 8 – EXPOSURE RESTRICTIONS AND PERSONAL PROTECTION

Ingredient	App. % by wt.	EXPOSURE LIMITS			CAS #
		TLV	NIOSH REL TWA	PEL	
Asphalt	80 -95	0.5 mg/m ³ *	0.5 mg/m ³	NE	8052-42-4
Aromatic Oil	5-15	0.2 mg/m ³ *	0.2 mg/m ³	0.2 mg/m ³	64742-04-7
Petroleum Resins	<2	UN	5 mg/m ³	UN	64742-16-1

* As Fumes

ADDITIONAL ADVICE: No special clothes are required, but do wear gloves.

Safety Data Sheet

SECTION 9 – PHYSICAL PROPERTIES

Freezing Point: °C (°F)	NA	Flash Point : °C (°F) TCC	>316(600)
Boiling Point: °C (°F)	NA	Ignition Temperature: °C (°F)	
Vapor Pressure (MM Hg):	NA	Flammable Limits: LEL	NA
		UEL	NA
Vapor Density (Air = 1)	NA	Specific Gravity (H ₂ O = 1):	1.0
Solubility in Water:	Insoluble	Percent Volatile By Volume (%)	Nil
Appearance and Odor:	Black bitumen compound with clear polyester top film. Odor is asphaltic.	pH:	NA
		Evaporation Rate (BuAC=1)	NA

SECTION 10 – STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Open Flame.

MATERIALS TO AVOID: None known

DECOMPOSITION PRODUCTS: Carbon Monoxide, Carbon Dioxide and Oxides of Nitrogen.

SECTION 11 – TOXICOLOGICAL INFORMATION

CAS #	INGREDIENT	DERMAL LD50	INHALATION LD50	ORAL LD50
8052-42-4	Asphalt	NE	NE	NE
64742-04-7	Aromatic Oil	NE	NE	NE
64742-16-1	Petroleum Resins	> 5000 mg/kg (Rat)	> 4000 mg/kg (Rat)	> 5000 mg/kg (Rat)

CAS #	INGREDIENT	CARCINOGENICITY		TERATOGENICITY	MUTAGENICITY
		ACGIH	IARC		
8052-42-4	Asphalt	NE	NE	NE	NE
64742-04-7	Aromatic Oil	NE	YES	NE	NE
64742-16-1	Petroleum Resins	NE	NE	NE	NE

SECTION 12 – ECOLOGICAL INFORMATION

VOLATILE ORGANIC COMPOUNDS: 0 Grams per Liter (g/l). 0 Pounds per Gallon (lb/g).

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Disposal should be made in accordance with Federal, State and Local regulations.

SECTION 14 – TRANSPORT INFORMATION

SHIPPING CLASS: Not Regulated

Safety Data Sheet

SECTION 15 – REGULATORY INFORMATION

SARA SECTION 302:

SARA (311,312) HAZARD CLASS:

SARA (313) CHEMICALS:

NONE

CERCLA:

NA

CPSC CLASSIFICATION:

HMIS: FLAMMABILITY: 1 REACTIVITY: 0 HEALTH: 1

NFPA: FLAMMABILITY: 1 REACTIVITY: 0 HEALTH: 1

WHMIS CLASSIFICATION: CLASS D Division 2B CLASS B Division 2

CALIFORNIA PROPOSITION 65:

☐ A. This product contains a chemical known to the State of CA to cause birth defects or other reproductive harm.☒ B. This product contains a chemical known to the State of CA to cause cancer.☐ C. This product contains a chemical known to the State of CA to cause cancer and birth defects or other reproductive harm.

SECTION 16 – OTHER INFORMATION

NA = not applicable

NE = not established

UN = unavailable

CL = Ceiling Limit

NEGL = Negligible

PROP. = Proprietary

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PITTWRAP® and FOAMGLAS® are registered trademarks of Pittsburgh Corning.

SECTION 1 – IDENTIFICATION

Product Name: PITTWRAP® SS jacketing

Manufacturer/Supplier:
Pittsburgh Corning Corporation
800 Presque Isle Drive
Pittsburgh, PA 15239

Information Number: 724-327-6100
CHEMTREC: 800/424-9300

Generic Name: Bitumen resin membrane

Use: PITTWRAP® SS jacketing is a self-sealing membrane for protecting underground FOAMGLAS® insulation systems.

Chemical Family: Mixture

General Comments: General information and emergency information available 8:00 AM – 5:00 PM Monday through Friday.

CHEMTREC telephone number is to be used only in the event of chemical transportation emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to technical service.

SECTION 2 – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION: Potential Carcinogen
Potential Irritant



SIGNAL WORD: **DANGER**

HAZARD STATEMENT: May cause cancer.
Repeated or prolonged contact with skin may cause irritation.
Inhalation of heated vapors may cause irritation of nasal passages and throat.
Eye contact may cause irritation.

HAZARDOUS POLYMERIZATION: Will Not Occur

ROUTES OF EXPOSURE: Inhalation, Skin, Eyes and Ingestion

IMMEDIATE EFFECTS:

INHALATION: Due to the physical nature of this product, inhalation is unlikely. Heated vapors may cause irritation of nasal passages and throat.

SKIN CONTACT: Normally not irritating. If rash develops or irritation persists, seek.

EYE CONTACT: Due to the physical nature of this product, eye contact is unlikely. Direct contact can cause irritation. If eye contact is made and irritation develops, contact a physician.

INGESTION: Due to the physical nature of this product, ingestion is unlikely. If ingested, contact a physician. Wash hands before eating after using this product.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

ACUTE: Inhalation – exposure to heated vapors may cause respiratory, eye, or nose irritation.

CHRONIC: Inhalation – Long term exposure to concentrated heated vapors may reduce lung function and cause chronic bronchitis

Carcinogenicity – Components in this product are listed as a carcinogen by NTP, IARC, ACGIH or OSHA.

COMPONENT	CAS #
Aromatic Oil	64742-04-7

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	App. % by wt.	CAS #
Asphalt	45 -55	8052-42-4
Aromatic Oil	5-15	64742-04-7
Carbon Black	10-25	1333-86-4
Petroleum Resins	<2	64742-16-1

SECTION 4 – FIRST AID MEASURES

GENERAL ADVICE: See below.

INHALATION: An unlikely route of entry if used properly. If symptoms develop remove to fresh air. Consult a physician immediately.

SKIN CONTACT: Normally not irritating. If rash develops or irritation persists, seek physician.

EYE CONTACT: Immediately flush eyes with water for at least 15 minutes while holding eyelids open. Get immediate medical attention.

INGESTION: An unlikely route of entry. If swallowed, contact a physician immediately. Never give anything by mouth to an unconscious person. The decision to induce vomiting should only be made by a physician.

SECTION 5 – FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Foam, CO₂, Dry Chemical. If entering a confined area, use self-contained breathing apparatus.

EXPLOSION DATA:

SENSITIVITY TO MECHANICAL IMPACT:	Stable
SENSITIVITY TO STATIC DISCHARGE:	Stable

UNUSUAL FIRE AND EXPLOSION HAZARDS: None. This product is not considered flammable.

HAZARDOUS COMBUSTION PRODUCTS: Thermal decomposition may produce smoke, toxic fumes, Carbon Monoxide, Carbon dioxide, hydrocarbons, and Oxides of Nitrogen.

SPECIAL FIRE FIGHTING MEASURES: Wear self-contained breathing apparatus and complete personal protective equipment when potential for exposure to vapors or products of combustion exist. Avoid breathing hazardous vapors or products of combustion, keep upwind. Isolate area and keep unnecessary people away. Prevent run-off from fire, control or dilution from entering streams or drinking water supplies.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

PRECAUTIONS FOR PERSONNEL: Ensure adequate ventilation. No special clothes are required, but do wear gloves. Promptly cleanse hands with waterless hand cleaner, clean fingernails and wash with soap and water after handling. Avoid contact with eyes, skin and clothing. Practice good personal hygiene to avoid ingestion. Wash thoroughly after handling and before eating or drinking. Use only with adequate ventilation. Wash clothing before reuse. Refer to recommendations in section 8.

ENVIRONMENTAL PRECAUTIONS: No special procedures normally needed. Avoid contact with strong oxidizers like chlorine, pure oxygen or calcium hypochlorite.

PROCESS FOR CLEANING: Scrape up material with non-sparking tools and place in a container fitted with a lid.

REGULATORY REQUIREMENTS: Follow applicable OSHA regulations (29 CFR 1910.120).

SECTION 7 – HANDLING AND STORAGE

HANDLING: Avoid direct contact with product. General ventilation is recommended.

STORAGE: Store under dry warehouse conditions away from heat and all ignition sources.

SECTION 8 – EXPOSURE RESTRICTIONS AND PERSONAL PROTECTION**EXPOSURE LIMITS**

Ingredient	App. % by wt.	TLV	NIOSH REL TWA	PEL	CAS #
Asphalt	45 -55	0.5 mg/m ³ *	0.5 mg/m ³	NE	8052-42-4
Aromatic Oil	5-15	0.2 mg/m ³ *	0.2 mg/m ³	0.2 mg/m ³	64742-04-7
Carbon Black	10-25	3.5 mg/m ³ *	2.4 mg/m ³	3.5 mg/m ³	1333-86-4
Petroleum Resins	<2	UN	5 mg/m ³	UN	64742-16-1

*as fumes

EXPOSURE GUIDELINES:

See above.

ENGINEERING CONTROLS:

Normally not needed. If heating product use local exhaust when the general ventilation is not sufficient to keep the airborne contaminant concentration below the exposure limit shown above.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION:

Wear safety glasses or goggles to avoid eye contact.

SKIN PROTECTION:

Wear oil impervious gloves to minimize contact with skin. Wear normal protective work clothing with long sleeved shirt.

RESPIRATORY PROTECTION:

Not required under normal conditions of use. Wear appropriate, properly fitted NIOSH/MSHA approved organic vapor or supplied air respirator when airborne contaminant level(s) are expected to exceed exposure limits indicated above. Follow manufacturer's directions for respirator use.

ENVIRONMENTAL EXPOSURE CONTROL:

No specific controls are needed.

WORK/HYGIENIC PRACTICES:

Avoid contact with eyes and skin. Wash thoroughly after handling and before eating or drinking.

SECTION 9 – PHYSICAL PROPERTIES

Appearance:	Black bitumen compound with rose colored top film.	Flash Point : °C (°F) TCC	>316(600)
Odor:	asphaltic	Ignition Temperature: °C (°F)	UN
Odor Threshold:	UN	Evaporation Rate (BuAC=1)	NA
pH	NA	Flammability:	Combustible
Melting Point/Freezing Point: °C (°F)	UN	Flammable Limits: LEL	NA
		UEL	NA
Boiling Point: °C (°F)	UN	Vapor Pressure: (MM Hg): pH:	NA
Solubility in Water:	Insoluble	Vapor Density: (Air = 1)	NA
Partition Coefficient: n-octanol/water:	NE	Specific Gravity: (H ₂ O = 1):	1.0
Decomposition Temperature	NE	Density: kg/l (lbs./gal) (Calculated)	1.0 (8.35)
Viscosity	NA	Evaporation Rate: (BuAC=1)	NA
VOC: g/l (lbs./gal)	0.0 (0.0)	Percent Volatile By Volume: (%)	Negligible

SECTION 10 – STABILITY AND REACTIVITY

REACTIVITY: Can react with strong oxidizers. Material is combustible and should be stored away from excessive heat and flames.

STABILITY: Stable

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous reaction will not occur

CONDITIONS TO AVOID: Open Flame.

MATERIALS TO AVOID: Strong oxidizers like chlorine, pure oxygen or calcium hypochlorite

DECOMPOSITION PRODUCTS: Will produce fumes, carbon monoxide, carbon dioxide and oxides of nitrogen and various other complex hydrocarbons during combustion.

SECTION 11 – TOXICOLOGICAL INFORMATION

CAS #	INGREDIENT	DERMAL LD50	INHALATION LD50	ORAL LD50
8052-42-4	Asphalt	NE	NE	NE
64742-04-7	Aromatic Oil	NE	NE	NE
1333-86-4	Carbon Black	NE	NE	NE
64742-16-1	Petroleum Resins	> 5000 mg/kg (Rat)	> 4000 mg/kg (Rat)	> 5000 mg/kg (Rat)

CAS #	INGREDIENT	CARCINOGENICITY ACGIH IARC		TERATOGENICITY	MUTAGENICITY
8052-42-4	Asphalt	NE	NE	NE	NE
64742-04-7	Aromatic Oil	NE	YES	NE	NE
1333-86-4	Carbon Black	NE	NE	NE	NE
64742-16-1	Petroleum Resins	NE	NE	NE	NE

SECTION 12 – ECOLOGICAL INFORMATION

BIODEGRADATION: No information is available.
BIOACCUMULATION: No information is available.
AQUATIC TOXICITY: No information is available.
OTHER INFORMATION: None

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Disposal should be made in accordance with Federal, State and Local regulations. Before attempting clean up, refer to hazardous information listed on this sheet. Waste of this product is not defined as hazardous according to U.S. EPA (40 CFR § 261.3) Incinerate at EPA (Environmental Protection Agency) approved facility or dispose of waste in compliance with state and local regulations.

SECTION 14 – TRANSPORT INFORMATION

SPECIAL SHIPPING INFORMATION: None
DOT SHIPPING CLASS: Not regulated.
TDG: Not regulated.
PIN: Not available

SECTION 15 – REGULATORY INFORMATION

Rotterdam Convention (PIC) Annex III: NA

US Regulatory Information

OSHA 29 CFR 1910-1200

Irritant

TSCA

All components of this product are listed on TSCA Inventory

SARA Title III:

SARA SECTION 302: None

SARA SECTION 304: None

SARA (311,312) HAZARD CLASS: None

SARA (313) CHEMICALS: None

CERCLA:

NA

RCRA:

Refer to section 13

CPSC CLASSIFICATION:

NA

HMIS: FLAMMABILITY: 1 REACTIVITY: 0 HEALTH: 1

NFPA: FLAMMABILITY: 1 REACTIVITY: 0 HEALTH: 1

WHMIS CLASSIFICATION: D2B

CALIFORNIA PROPOSITION 65:

☐ A. This product contains a chemical known to the State of CA to cause birth defects or other reproductive harm.

☒ B. This product contains a chemical known to the State of CA to cause cancer.

☐ C. This product contains a chemical known to the State of CA to cause cancer and birth defects or other reproductive harm.

SECTION 16 – OTHER INFORMATION

Prepared in accordance with 29 CFR 1910.1200

This Product has been classified in accordance with the hazard criteria of the Controlled Products

NA = not applicable

NE = not established

UN = unavailable

CL = Ceiling Limit

NEGL = Negligible

PROP. = Proprietary

"THE DATA INCLUDED HEREIN ARE PRESENTED IN ACCORDANCE WITH THE VARIOUS ENVIRONMENT, HEALTH AND SAFETY REGULATIONS. IT IS THE RESPONSIBILITY OF A RECIPIENT OF THIS DATA TO REMAIN CURRENTLY INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS OWN PROGRAM AND TO COMPLY WITH ALL NATIONAL, FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS APPLICABLE TO SAFETY, OCCUPATIONAL HEALTH, RIGHT-TO-KNOW AND ENVIRONMENTAL PROTECTION."

WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE, PITTSBURGH CORNING MAKES NO WARRANTY WITH RESPECT THERETO, AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

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SAFETY DATASHEET

(Following Regulations (EC) No 1907/2006 & (EC) No 1272/2008)

SDS Number: 353 Date of first issue: 05 October 1994 Date of last revision: 22 October 2014

1 - Identification of product

Tradenames: FireMaster Marine Paper, Superwool Papers,

Product Group

ALKALINE EARTH SILICATE (AES) WOOL PRODUCT

Chemical Name

Calcium-Magnesium-Silicate Wool or Calcium-Magnesium-Zirconium-Silicate Wool

Intended Release

Application as thermal insulation, heat shields, heat containment, gaskets and expansion joints in industrial furnaces, ovens, kilns, boilers and other process equipment and in the aerospace, automotive and appliance industries, and as passive fire protection systems and firestops.
(Please refer to specific technical data sheets for more information)

Synonyms

AES Wool, Synthetic Vitreous Fiber (SVF), Man-made Vitreous Fiber (MMVF), Man-made Mineral Fiber (MMMF)

Trade Names

Superwool™ Paper
Superwool™ Flex-Wrap
Superwool™ HT Paper
FireMaster® Marine Paper

NOTE

This product may be covered by one or more of the following patents or foreign equivalents:
US5332699, US5714421, US5811360, US5821183, US5928975, US5955389, US5994247,
US6180546, EP0906250, GB2348640. A list of foreign patent numbers is available upon request to The Morgan Crucible Company plc.
Thermal Ceramics, Superwool, 607 and MAX are trademarks of The Morgan Crucible Company plc.

Company

Morgan Advanced Materials

Thermal Ceramics Inc.
P. O. Box 923; Dept. 300
Augusta, GA 30903-0923

For Product Stewardship and Emergency Information:
Hotline - 1-800-722-5681
Fax - 706-560-4054

For additional SDSs and to confirm this is the most current SDS for the product, visit our web page www.morganthermalceramics.com or send a request to MT.NorthAmerica@morganplc.com

2 - Hazard Identification

Chronic Effects

None Applicable

Possible Health Effects

None Applicable

Hazard Classification Info

CLASSIFICATION OF THE SUBSTANCE/MIXTURE

Not Applicable

LABELING ELEMENTS

Not Applicable

OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure.

These effects are usually temporary.

3 - Composition / Information On Ingredients

COMPONENTS	CAS NUMBER	% BY WEIGHT
Alkaline-Earth Silicate Wool ⁽¹⁾	436083-99-7	92 - 96
Acrylic Binder	Proprietary	2 - 10
⁽¹⁾ CAS definition: Alkaline Earth Silicate (AES) consisting of silica (50-82 wt %), calcia and magnesia (18-43 wt %), alumina, titania and zirconia (less than 6 wt %), and trace oxides. This CAS composition also covers Morgan Thermal Ceramics products Calcium-Magnesium-Silicate Wool (CAS no. 329211-92-9) and Calcium-Magnesium-Zirconium-Silicate Wool (CAS no. 308084-09-5).		

(See Section 8 "Exposure Controls / Personal Protection" for exposure guidelines)

4 - First-Aid measures

4.1 - Eyes

If eyes become irritated, flush immediately with large amounts of lukewarm water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Do not rub eyes.

4.2 - Skin

If skin becomes irritated, remove soiled clothing. Do not rub or scratch exposed skin. Wash area of contact thoroughly with soap and water. Using a skin cream or lotion after washing may be helpful.

4.3 - Respiratory Tract

If respiratory tract irritation develops, move the person to a dust free location. See Section 8 for additional measures to reduce or eliminate exposure.

4.4 - Gastrointestinal

If gastrointestinal tract irritation develops, move the person to a dust free environment.

If the above symptoms persist, seek medical attention

NOTES TO PHYSICIANS:

Skin and respiratory effects are the result of temporary, mild mechanical irritation; fiber exposure does not result in allergic manifestations.

5 - Fire-fighting measures

5.1 - NFPA Codes

Flammability: 0 Health: 1 Reactivity: 0 Special: 0

5.2 - NFPA Unusual Hazards

None

5.3 - Flammable Properties

None

5.4 - Flash Point

None

5.5 - Hazardous decomposition products

None

5.6 - Unusual Fire and explosion hazard

None

5.7 - Extinguishing media

Use extinguishing media suitable for type of surrounding fire

6 - Accidental Release Measures

Avoid creating airborne dust. Dust suppressing cleaning methods such as wet sweeping or vacuuming should be used to clean the work area. If vacuuming, the vacuum should be equipped with a HEPA filter. Compressed air or dry sweeping should not be used for cleaning.

7 - Handling and storage

7.1 - Handling

Limit the use of power tools unless in conjunction with local exhaust. Use hand tools whenever possible. Frequently clean the work area with HEPA filtered vacuum or wet sweeping to minimize the accumulation of debris. Do not use compressed air for clean-up.

7.2 - Storage

Store in original container in a dry area. Keep container closed when not in use.

Product packaging may contain residue. Do not reuse.

8 - Risk Management Measures / Exposures Controls / Personal Protection

It is prudent to reduce exposure to respirable dusts to the lowest attainable level through the use of engineering controls such as ventilation and dust collection devices. Industrial hygiene standards and occupational exposure limits may vary between countries, state and local jurisdictions. Contact your employer to determine which exposure levels apply to your facility. If no regulatory dust or other standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection. In the absence of such guidance, the manufacturer generally recommends the control of AES wool exposures to 1 fiber/cc or less.

Exposure Limit/Guidelines Table

EXPOSURE GUIDELINES			
MAJOR COMPONENT	OSHA PEL	ACGIH TLV	MANUFACTURER'S REG
Alkaline-Earth Silicate Wool	None Established	None Established	1 f/cc, 8-hr TWA
Latex*	None Established	None Established	None
*Trace amounts of formaldehyde may release from latex during initial heating of this product.. The current OSHA PELs for formaldehyde are: 0.75 ppm (8hr.TWA) and 2 ppm (STEL).			

Engineering controls

Use feasible engineering controls such as local exhaust ventilation, point of generation dust collection, down draft work stations, emission controlling tool designs, and materials handling equipment designed to minimize airborne fiber emissions.

PPE - Skin

Wear gloves (e.g. cotton), head coverings and full body clothing as necessary to prevent skin irritation. Washable or disposable clothing may be used. If possible, do not take unwashed work clothing home. If soiled work clothing must be taken home, employers should ensure employees are trained on the best practices to minimize or avoid non-work dust exposure (e.g., vacuum clothes before leaving the work area, wash work clothing separately, rinse washer before washing other household clothes, etc.).

PPE - Eye

Wear safety glasses with side shields or other forms of eye protection in compliance with appropriate OSHA standards to prevent eye irritation. The use of contact lenses is not recommended, unless used in conjunction with appropriate eye protection. Do not touch eyes with soiled body parts or materials. If possible, have eye-washing facilities readily available where eye irritation can occur.

PPE - Respiratory (general text)

When it is not possible or feasible to reduce respirable dust exposures through engineering controls, employees are encouraged to use good work practices together with respiratory protection. For dust exposure below the REG, respiratory protection is not required, but particulate respirator equipped with N-95 or higher may be used on a voluntary basis. Comply with OSHA Respiratory Protection Standards, 29 CFR 1910.134 and 29 CFR 1926.103, for the particular hazard or airborne concentrations to be encountered in the work environment. For the most current information on respirator selection, contact your supplier.

9 - Physical and chemical properties

ODOR & APPEARANCE

White odorless material with a wool type appearance

CHEMICAL FAMILY

Calcium, Magnesium, Silicate Mixture

BOILING POINT

Not Applicable

WATER SOLUBILITY (%)

Less than 1 mg/litre

MELTING POINT

1275 - 1300°C (2327 - 2372°F)

SPECIFIC GRAVITY

2.5 - 3.0

VAPOR PRESSURE

Not applicable

pH

Not applicable

VAPOR DENSITY (Air = 1)

Not applicable

% VOLATILE

Not applicable

MOLECULAR FORMULA

Not applicable

LENGTH WEIGHTED GEOMETRIC MEAN DIAMETER OF FIBERS CONTAINED IN THE PRODUCT

1.4 - 3 micron

10 - Stability and Reactivity

Chemical stability

Stable under conditions of normal use

Incompatibilities

Avoid contact with strong acids

Conditions to avoid

None

Hazardous decomposition products

Upon heating above 1650°F (900°C) for sustained periods, this amorphous material begins to transform to mixtures of crystalline phases. For further information, please refer to Section 16.

Hazardous polymerization

Not applicable

11 - Toxicological information

Acute Toxicity

IRRITANT PROPERTIES

Superwool fibers are negative when tested using approved methods (Directive 67/548/EEC, Annex 5, Method B4). Like all man-made mineral fibers and some natural fibers, fibers contained in this product can produce a mild mechanical irritation resulting in temporary itching or rarely, in some sensitive individuals, in a slight temporary reddening. Unlike other irritant reactions, this is not the result of allergy or chemical skin damage but is caused by mechanical effects.

Toxicology

Fibers contained in the products listed in the title have been designed to be rapidly cleared from lung tissue. This low biopersistence has been confirmed in many studies on AES using EU protocol ECB/TM/27 (rev 7). When inhaled, even at very high doses, they do not accumulate to any level capable of producing a serious adverse biological effect. In lifetime chronic studies there was no exposure-related effect more than would be seen with any "inert" dust. Subchronic studies at the highest doses achievable produced at worst a transient mild inflammatory response. Fibers with the same ability to persist in tissue do not produce tumors when injected into the peritoneal cavity of rats.

12 - Ecological information

Adverse effects of this material on the environment are not anticipated.

13 - Disposal Considerations

13.1 - Waste Management

Unless wetted, such a waste is normally dusty and should therefore be properly sealed in containers for disposal. At some authorized disposal sites dusty waste may be treated differently, in order to ensure that they are dealt with promptly and to avoid them being windblown. Check for any national and/or regional regulations which may apply.

13.2 - Disposal

RCRA

Superwool, as manufactured, is not classified as a hazardous waste according to Federal regulations (40 CFR 261). As manufactured, Superwool was tested using EPA's Toxicity Characteristics Leaching Procedure (TCLP). Results showed there were no detectable contaminants or detectable leachable contaminants that exceeded the regulatory levels. Any processing, use, alteration or chemical additions to the product, as purchased, may alter the disposal requirements. Under Federal regulations, it is the waste generator's responsibility to properly characterize a waste material, to determine if it is a "hazardous" waste. Check local, regional, state or provincial regulations to identify all applicable disposal requirements.

14 - Transport information

Hazard Class: Not Regulated United Nations (UN) Number: Not Applicable
Labels: Not Applicable North America (NA) Number: Not Applicable
Placards: Not Applicable Bill of Lading: Product Name

INTERNATIONAL

Canadian TDG Hazard Class & PIN: Not regulated
Not classified as dangerous goods under ADR (road), RID (train), IATA (air) or IMDG (ship).

15 - Regulatory information

UNITED STATES REGULATIONS

SARA Title III: This product does not contain any substances reportable under Sections 302, 304, 313 (40 CFR 372). Sections 311 and 312 apply.

OSHA: Comply with Hazard Communication Standards 29 CFR 1910.1200 and 29 CFR 1926.59 and Respiratory Protection Standards 29 CFR 1910.134 and 29 CFR 1926.103.

TSCA: AES wools have been assigned several CAS numbers; however, they are not required to be listed on the TSCA inventory

CERCLA: AES wool contains fibers with an average diameter greater than one micron and thus is not considered a CERCLA hazardous substance.

CAA: AES wool contains fibers with an average diameter greater than one micron and thus is not considered a hazardous air pollutant.

California: According to our raw material supplier, latex used in this product contains small amounts of the following chemicals listed in Proposition 65, Safety Drinking Water and Toxic Enforcement Act of 1986 as chemical(s) known to the state of California to cause cancer:

-Formaldehyde	CAS No. 50-00-0
-Acrylamide	CAS No. 79-06-1
-Ethyl Acrylate	CAS No. 140-88-5

States: AES wools are not known to be regulated by any State. If in doubt, contact your local regulatory agency.

INTERNATIONAL REGULATIONS

Canada WHMIS: No Canadian Workplace Hazardous Materials Information System categories apply to this product.

Canadian EPA: All substances in this product are listed, as required, on the Domestic Substance List (DSL).

European Union: These products are exonerated from any carcinogenic classification in the countries of the European Union under the provisions of Nota Q of the European Commission Directive 97/69/EC.

16 - Other Information

Devitrification

PRECAUTIONARY MEASURES TO BE TAKEN AFTER SERVICE UPON REMOVAL

High temperature insulating wool (HTIW) is typically used in insulation applications to keep temperature exposure at 900°C or above in a closed space. The exposure temperature maximum occurs at the hot face surface of the insulation. The heat exposure on the insulation decreases from the hot face to the cold face as the insulation "insulates itself". As a result, only thin layers of the hot face surface of the insulation become devitrified and respirable dust generated during removal operations typically do not contain detectable levels of crystalline silica (CS).

Toxicological evaluation of the effect of the presence of CS in artificially heated HTIW material has not shown any increased toxicity in vitro and in vivo. The results from different factor combinations such as increased brittleness of fibers or micro crystals embedded in the glass structure of the fiber and therefore not biologically available, may explain the lack of toxicological effects. IARC evaluation as provided in Monograph 68 is not relevant since CS is not biologically available in after-service HTIW.

PRODUCT STEWARDSHIP PROGRAM:

Morgan Thermal Ceramics has established a program to provide customers with up-to-date information regarding the proper use and handling of RCF. In addition, Thermal Ceramics has established a program to monitor airborne fiber concentrations at customer facilities. If you would like more information about this program, please call your local supplier or visit one of the following web sites.

Morgan Thermal Ceramics - Global www.morganthermalceramics.com
Refractory Ceramic Fibers Coalition (USA) www.RCFC.net
ECFA (Europe) www.ecfa.eu

As product information labels may be required on Superwool™ packages, check local destination regulations before shipping.

HMIS HAZARD RATING

HMIS Health: 1
HMIS Flammable: 0
HMIS Reactivity: 0
HMIS Personal Protective: To be determined by user

TECHNICAL DATASHEETS

1114-120, 714-202

Revision Summary

Section 16: Disclaimer Updated

SDS prepared by

SDS Prepared By: MORGAN THERMAL CERAMICS ENVIRONMENTAL, HEALTH & SAFETY DEPARTMENT

Disclaimer

The information presented herein is presented in good faith and believed to be accurate as of the effective date of this Safety Data Sheet. Employers may use this SDS to supplement other information gathered by them in their efforts to assure the health and safety of their employees and the proper use of the product. This summary of the relevant data reflects professional judgment; employers should note that information perceived to be less relevant has not been included in this SDS. Therefore, given the summary nature of this document, Morgan Thermal Ceramics does not extend any warranty (expressed or implied), assume any responsibility, or make any representation regarding the completeness of this information or its suitability for the purposes envisioned by the user.

Fire Resistant Mineral Wool Insulation

Version 1.1

Revision Date 03/19/2014

Print Date 08/20/2014

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : TempControl Batts, Sound & Fire Block Batts

Chemical nature : Mineral Fiber Product

Manufacturer or supplier's details

Company : Johns Manville

Address : P.O. Box 5108
Denver, CO USA 80127

Telephone : 303-978-2000 8:00AM-5:00PM M-F

Emergency telephone number : 1-800-424-9300 (Chemtrec, in English)

Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Carcinogenicity : Category 2

Label elements

Hazard pictograms



Signal word : Warning

Hazard statements : Suspected of causing cancer.

Precautionary statements : **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.

Response:
IF exposed or concerned: Get medical advice/ attention.

Storage:
Store locked up.

Disposal:
Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mineral Fiber Product

Hazardous components

Fire Resistant Mineral Wool Insulation

Version 1.1

Revision Date 03/19/2014

Print Date 08/20/2014

Chemical Name	CAS-No.	Concentration (%)
Mineral wool fibres	65997-17-3	>= 50 - < 70 %
non-durable glass wool fiber		>= 5 - < 10 %

SECTION 4. FIRST AID MEASURES

- If inhaled : If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Protection of first-aiders : Do not leave the victim unattended.

SECTION 5. FIREFIGHTING MEASURES

- Hazardous combustion products : No hazardous combustion products are known
- Specific extinguishing methods : Standard procedure for chemical fires.
- Special protective equipment for firefighters : Wear self contained breathing apparatus for fire fighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid dust formation.
- Methods and materials for containment and cleaning up : Pick up and arrange disposal without creating dust.
Sweep up and shovel.
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
- Conditions for safe storage : Keep in a dry, cool place.

Fire Resistant Mineral Wool Insulation

Version 1.1

Revision Date 03/19/2014

Print Date 08/20/2014

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Form of exposure	Permissible concentration	Basis Update
Mineral wool fibres	65997-17-3	TWA	1 fibre/cm ³	ACGIH (2010-03-01)
non-durable glass wool fiber	65997-17-3	TWA	1 fibre/cm ³	ACGIH (2010-03-01)

*Any OSHA PELs with Issue Date 1989: Vacated by court of appeals in 1992.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection
Remarks : For prolonged or repeated contact use protective gloves.

Eye protection : Safety glasses

Skin and body protection : If used and stored as directed, no special protective equipment is necessary.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Written instructions for handling must be available at the work place.**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : fibres

Colour : brown

Odour : odourless

Odour Threshold : no data available

pH : not applicable

Melting point/freezing point : > 1,150 °C

Boiling point/boiling range : not applicable

Flash point : not applicable

Evaporation rate : not applicable

Flammability (solid, gas) : no data available

Upper explosion limit : not applicable

Lower explosion limit : not applicable

Vapour pressure : not applicable

Fire Resistant Mineral Wool Insulation

Version 1.1

Revision Date 03/19/2014

Print Date 08/20/2014

Relative vapour density : not applicable
Relative density : no data available

Solubility(ies)

Water solubility : insoluble
Solubility in other solvents : no data available

Partition coefficient: n-octanol/water : no data available

Auto-ignition temperature : no data available
Thermal decomposition : no data available

Viscosity

Viscosity, dynamic : no data available
Viscosity, kinematic : no data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
Chemical stability : Formaldehyde may be released by partial hydrolysis of the urea formaldehyde polymer, especially in high temperature applications or
Possibility of hazardous reactions : Stable under recommended storage conditions. No hazards to be specially mentioned.
Conditions to avoid : no data available

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**Product

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Fire Resistant Mineral Wool Insulation

Version 1.1

Revision Date 03/19/2014

Print Date 08/20/2014

Carcinogenicity**IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is maintained in the OSHA Hazard Communication standard (29 CFR 1910.1200) and sections 1910.1001-1052.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

no data available

STOT - single exposure

no data available

STOT - repeated exposure

no data available

Aspiration toxicity

no data available

Further information**Product**

no data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

Results of PBT and vPvB assessment

no data available

Other adverse effects**Product:**

Fire Resistant Mineral Wool Insulation

Version 1.1

Revision Date 03/19/2014

Print Date 08/20/2014

Additional ecological information : no data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
Packaging that can not be reused after cleaning must be disposed or recycled in accordance with all federal, national and local regulations.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Carcinogen

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
formaldehyde	50-00-0	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
formaldehyde	50-00-0	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations**Massachusetts Right To Know**

formaldehyde	50-00-0	0 - 0.1 %

Pennsylvania Right To Know

Mineral wool fibres	65997-17-3	50 - 70 %

Fire Resistant Mineral Wool Insulation

Version 1.1

Revision Date 03/19/2014

Print Date 08/20/2014

Urea, polymer with formaldehyde	9011-05-6	10 - 20 %
non-durable glass wool fiber	65997-17-3	5 - 10 %
formaldehyde	50-00-0	0 - 0.1 %

New Jersey Right To Know

Mineral wool fibres	65997-17-3	50 - 70 %
Urea, polymer with formaldehyde	9011-05-6	10 - 20 %
non-durable glass wool fiber	65997-17-3	5 - 10 %

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

Mineral wool fibres	65997-17-3
formaldehyde	50-00-0

The components of this product are reported in the following inventories:

TSCA On TSCA Inventory

DSL All components of this product are on the Canadian DSL.

SECTION 16. OTHER INFORMATION**Further information**

Prepared by productsafety@jm.com

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**Product identifier**

Product name: Glass Mineral Wool Insulation (Yellow)

Synonyms, trade names: Alley-K™ Pipe Insulation*, Alley-K™ ASJ Pipe Insulation*, Alley-Wrap™, AK-110™, Alley-Wrap™ FSK, AK Board™, AK Board™ FSK, FDM, AK Blanket™, AK Flex™, Unfaced Metal Building Insulation, Alley-Kat Air Duct Board™, High Temperature Blanket, High Temperature Batt, High Temperature HD Blanket, High Temperature Panel, High Temperature Board
(*See section 2, 8, 10)

Revision: Date: 2015-12-08

Relevant identified uses of the substance or mixture and uses advised against

Identified use(s): Thermal and/or acoustic insulation for use in technical applications, industrial applications and in building construction.

Uses advised against: None known.

Details of the supplier of the safety data sheet

Head Office Manson Insulation Products Ltd
One Knauf Drive
IN 46176-1 Shelbyville
Tel: 800 825 4434
sds@knaufinsulation.com
www.imanson.com

Region: United States, Central & South America's

Emergency telephone number

Emergency telephone: 24hr: Chemtrec Tel: 800 424 9300

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SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to the OSHA Hazard Communication Standard (29 CFR 1910.1200)

: The product is not classified.

Label elements

Contains: None.

Hazard pictogram: None.

Signal word: None.

Hazard statements: None.

Precautionary statements:

- Prevention None.

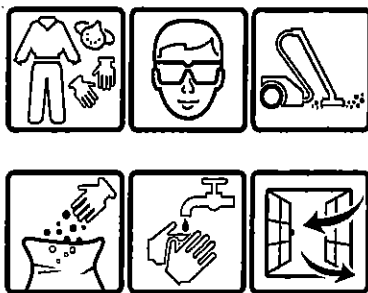
- Response None.

- Storage None.

- Disposal None.

Supplemental label information: None.

The following sentences and pictograms are printed on packaging: The mechanical effect of fibers in contact with skin may cause temporary itching.



www.knaufinsulation.com/comfort-and-handling

Other hazards

None.

Hazard summary

Physical Hazards: None.

Health Hazards: Mechanical irritation of the skin, eyes and upper respiratory system.

Environmental Hazards: None.

Main symptoms: Contact with skin, eyes and upper respiratory system may cause mechanical irritation.

Biosoluble glass mineral wool is classified as a nuisance dust by OSHA.

* Heat-Up Precautions: When heated to temperatures above 400°F for the first time, release of binder components and binder decomposition products can occur which, in high concentrations, may irritate eyes and the respiratory system.- 8 & 10

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances

<u>%:</u>	<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
83-97	-	Biosoluble glass mineral wool	-	(1), (2), (3)
3-17	-	Thermo set, inert polymer based on cured phenol formaldehyde resin	-	(1)
<0.1	50-00-0.	Formaldehyde	-	-

Notes:

- (1) Specific chemical identity and/or exact percent concentration is withheld as trade secret.
- (2) Man made vitreous (silicate) fibers with random orientation with alkaline oxide and alkali earth oxide ($\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{CaO}+\text{MgO}+\text{BaO}$) content greater than 18% by weight meeting the requirements of Note Q of regulation n° 1272/2008 and therefore not classified carcinogenicity.
- (3) All Knauf Insulation products covered by this SDS are independently certified by EUCB to be manufactured using biosoluble glass formulations and thus exempt from labeling under NTP or California Prop 65 requirements.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General Information:

Show this Safety Data Sheet to the medical professional in attendance. If symptoms occur, follow first aid measures as appropriate.

Notes to Physician: None specific.

Inhalation: Remove from exposure. Rinse the throat and clear dust from airways.

Skin contact: If mechanical irritation occurs, remove contaminated clothing and wash skin gently with cold water and soap.

Eye contact: Rinse abundantly with water for at least 15 minutes.

Ingestion: Drink plenty of water if accidentally ingested.

Most important symptoms and effects, both acute and delayed

Contact with skin, eyes and upper respiratory system may cause mechanical irritation. Biosoluble glass mineral wool is classified as a nuisance dust by OSHA.

Indication of any immediate medical attention and special treatment needed

If any adverse reaction or discomfort continues from any of the above exposures, seek professional medical advice.

Medical attention/treatments: None specific.

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SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Water, foam, carbon dioxide (CO₂), and dry powder.

Special hazards arising from the substance or mixture

Products do not pose a fire hazard in use; however, some packaging materials or facings may be combustible. Products of combustion from product and packaging - carbon dioxide, carbon monoxide and some trace gases such as ammonia, nitrogen oxides and volatile organic substances.

Advice for firefighters

In large fires in poorly ventilated areas involving packaging materials respiratory protection / breathing apparatus may be required.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions:

Minimize direct contact with skin in order to prevent mechanical itching. In dusty environments, use suitable respiratory protection such as 3M 8210, N95 or equivalent. Use glasses or goggles when working with mineral wool insulation above shoulder height or in dusty environments. Where possible, use natural ventilation during installation in order to minimize dust levels.

After contact with the product, rinse skin in cold water to reduce potential effects of mechanical itching. Dispose of surplus product in accordance with local regulations.

Emergency procedures:

Use personal protection recommended in Section 8 of the SDS.

Environmental precautions

Not relevant.

Methods and material for containment and cleaning up

In dusty environments, use vacuum equipment where possible to minimize dust levels.

Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

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SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Assure proper respiratory protection if dust potential exceeds PEL/TLV.

Conditions for safe storage, including any incompatibilities

To ensure optimum product performance; when packaging is removed or opened; products should be stored inside or covered to protect them from ingress of rain water or snow.
Storage arrangements should ensure stability of stacked products and use on a first in first out basis (FIFO) is recommended.

Specific end use(s)

Thermal and/or acoustic insulation for use in technical applications, industrial applications and in building construction.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>As:</u>	<u>Exposure limits:</u>	<u>Type:</u>	<u>Notes:</u>	<u>References:</u>
-	Glass wool fibers	-	1 fiber/ml	TWA	A3	ACGIH
-	Mineral wool fiber, total particulate	-	5 mg/m3	TWA	-	NIOSH
-	Particulates not otherwise regulated (PNOR), respirable fraction	-	5 mg/m3	TWA	-	OSHA
-	Particulates not otherwise regulated (PNOR), total dust	-	15 mg/m3	TWA	-	OSHA

Notes: (A3) - Fibers longer than 5 µm; diameter less than 3 µm; aspect ratio greater than 5:1 as determined by the membrane filter method at 400-450X magnification (4-mm objective) phase contrast illumination.
- Biosoluble glass mineral wool - See section 3.

Exposure controls

Engineering measures:

Maintain sufficient mechanical or natural ventilation to assure fiber concentrations remain below PEL/TLV Use local exhaust if necessary. Power equipment should be equipped with properly designed dust collection devices.

Eye protection:

Use glasses or goggles when working with mineral wool insulation above shoulder height or in dusty environments.

Skin protection:

Minimize direct contact with skin in order to prevent mechanical itching.

Respiratory equipment:

In dusty environments, use suitable respiratory protection.

Hygiene measures:

After contact with the product, rinse skin in cold water to reduce potential effects of mechanical itching.

Environmental Exposure Controls:

Not relevant.

* Heat-Up Precautions:

When heated to temperatures above 400°F for the first time, release of binder components and binder decomposition products can occur which, in high concentrations, may irritate eyes and the respiratory system. The duration of release is dependant upon the thickness of the insulation, binder content and the temperature applied. Adequate ventilation should be provided. In confined spaces or where ventilation is not possible, occupants should wear appropriate self-contained breathing apparatus.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance: Solid.

Form: Rolls., loose fiber, Panel.

Color: Yellow.

Odor: Not relevant.

Odor threshold: Not relevant.

pH: Not relevant.

Melting point / freezing point: Not relevant.

Initial boiling point and boiling range: Not relevant.

Flash point: Not relevant.

Auto Ignition Temperature (°F): Not relevant.

Flammability (solid, gas): Not relevant.

Flammability limit - lower (%): Not relevant.

Flammability limit - upper (%): Not relevant.

Vapor pressure: Not relevant.

Vapor density: Not relevant.

Evaporation rate: Not relevant.

Relative density: 7 - 96 kg/m³

Partition coefficient (n-octanol/water): Not relevant.

Solubility: Generally chemically inert and insoluble in water.

Decomposition temperature (°F): Not relevant.

Viscosity: Not relevant.

—

Other data: Nominal diameter of fibers 3 - 8µm
Length weight geometric mean diameter less 2 standard errors: < 6 µm
Orientation of fibers: Random

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SECTION 10: STABILITY AND REACTIVITY

Reactivity

None.

Chemical stability

Binder will decompose above 400°F

Possibility of hazardous reactions

None.

Conditions to avoid

Heating above 400°F

Incompatible materials

Hydrofluoric acid will react with and dissolve glass.

Hazardous decomposition products

None in normal conditions of use.

When heated to temperatures above 400°F for the first time, release of binder components and binder decomposition products can occur which, in high concentrations, may irritate eyes and the respiratory system.

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SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Ingestion: Non-hazardous when ingested.
Inhalation: Mechanical irritation to upper respiratory tract.
Skin contact: Mechanical irritation to skin.
Eye contact: Mechanical irritation to eyes.
Symptoms: Contact with skin, eyes and upper respiratory system may cause mechanical irritation.
Biosoluble glass mineral wool is classified as a nuisance dust by OSHA.

Information on toxicological effects:

Acute toxicity: No data were identified for the product as a whole. Data are for constituents:

Product name: Biosoluble glass mineral wool
Result - LD50
Species - N/A.
Dose - N/A.
Exposure - N/A.

Product name: Thermo set, inert polymer based on cured phenol formaldehyde resins.
Result - LD50
Species - N/A.
Dose - N/A.
Exposure - N/A.

Serious eye damage/irritation: May cause mechanical irritation to eyes.
Skin Corrosion/Irritation: May cause mechanical irritation to skin.
Respiratory or skin sensitization: No data were identified for this product or its constituents.
Germ cell mutagenicity: No data were identified for this product or its constituents.

Carcinogenicity: Results from a biopersistence test by intratracheal instillation has shown that fibers in this product longer than 20 μm have a weighted half-life less than 40 days, thus this product is not classified as a carcinogen. None of the components of this product are listed as a carcinogen by OSHA, IARC or NTP.

Reproductive Toxicity: No data were identified for this product or its constituents.
Developmental Effects: No data were identified for this product or its constituents.
STOT - Single exposure: No data were identified for this product or its constituents.
STOT - Repeated exposure: No data were identified for this product or its constituents.
Aspiration hazard: Not relevant.

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SECTION 12: ECOLOGICAL INFORMATION

Toxicity

This product is not ecotoxic to air, water or soil, by composition.

Persistence and degradability

Inert inorganic product with Thermo set, inert polymer based on cured phenol formaldehyde resins; 3-17%

Bioaccumulative potential

Will not bio-accumulate.

Mobility in soil

Not considered mobile. Less than 1% leachable organic carbon if landfilled.

Results of PBT and vPvB assessment

Not relevant.

Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues: Dispose of in accordance with all applicable regulations.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Disposal methods: This product is not regulated under RCRA Hazardous Waste Regulations. May be disposed in landfill. If unsure, contact the local office of the USEPA, your local public health department or the local landfill regulators.

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SECTION 14: TRANSPORT INFORMATION

UN number

Not regulated.

UN proper shipping name

Not regulated.

Transport hazard class(es)

Not regulated.

Packing group

Not regulated.

Environmental hazards

Not regulated.

Special precautions for user

Not regulated.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not regulated.

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SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

OSHA Status: This product is regulated as a nuisance dust under OSHA criteria.

TSCA listed: All components of this product are listed or exempt from listing on the TSCA inventory.

CERCLA Reportable Quantity: Not regulated.

SARA Title III:

Section 302 Extremely Hazardous: Not regulated.

Section 311/312 Hazard Categories: Not regulated.

Section 313 Toxic Chemicals: Not listed.

California Safe Drinking Water and Toxic Enforcement Act (Prop. 65): This product is exempt from labeling requirements under this Act.

In accordance with industry practice, Knauf Insulation has decided to continue to provide its customers with the appropriate information for the purpose of assuring safe handling and use of mineral wool throughout the product life.

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SECTION 16: OTHER INFORMATION

Label in accordance with OSHA HCS (2012): This product is not classified as hazardous.

Abbreviations and acronyms used in the safety data sheet:

ACGIH:	American Conference of Governmental Industrial Hygienists
CAS:	Chemical Abstract Service
CFR:	Code of Federal Regulations
EUCEB:	European Certification Board for Mineral Wool Products
IARC:	International Agency for Research on Cancer
NIOSH:	National Institute of Occupational Safety and Health
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration (United States)
PEL:	Permissible Exposure Limit
PBT:	Persistent, Bioaccumulative and Toxic
SARA:	Superfund Amendments and Reauthorization Act
SDS:	Safety Data Sheet
STEL:	Short Term Exposure Limit
TLV:	Threshold Limit Value
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted Average
USEPA:	United States Environmental Protection Agency
IBC:	Individual Bulk Container
MARPOL:	International Convention for the Prevention of Pollution from Ships

All products manufactured by Knauf Insulation are made of non-classified fibers and are certified by EUCEB.

Products meeting EUCEB certification requirements can be recognised by the EUCEB logo printed on the packaging.

Further information can be obtained from:
www.euceb.org
www.imanson.com



Additional information:

Change to Sections: 1, 16
New document format Date: 2015-12-08
Date of previous revisions: 2015-10-23, 2015-10-13, 2015-08-21, 2015-05-22

Moreover, in 2001, the IARC, reclassified glass mineral wool fibers from Group 2B (possibly carcinogenic) to «not classifiable as to their carcinogenicity to humans (Group 3)». (See Monograph Vol 81, <http://monographs.iarc.fr/>).

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

SAFETY DATA SHEET



Mineral Wool 1200 Insulation

Section I. Identification

Identity: Mineral Wool 1200 Insulation - Board, Fitting Insulators

Product Use: Insulation Board, Fitting Insulators

Manufacturer's Name: ICA, Inc.

Address: 500 South Ninth Street, Lehighton, PA 18235

Emergency Telephone Number: (610) 377-6100

Telephone Number for Information: (610) 377-6100

Section II. Hazards Identification

Identifiable Components:	CAS#	OSHA PEL	ACGIH TLV
None	N/A	N/A	N/A

	HMIS Rating	NFPA Rating
Health	1	1
Flammability	0	0
Reactivity:	0	0

Section III. Composition/Information on Ingredients

Common Name	Chemical Name	CAS#	Wt%
Mineral Wool	Mineral Fiber	65997-17-3	95-99
Cured Binder	Urea extended phenol-formaldehyde resin	25104-55-6	1-5

Section IV. First Aid Measures

Primary Routes of Entry: Inhalation (breathing dust and fibers), skin, and eye contact.

Inhalation: Inhalation of excessive amounts of dust created when fabricating, cutting, or other mechanical alterations of the product may cause temporary upper respiratory irritation and/or congestion. Breathing large amounts of dust or fibers from this product may lead to chronic health effects as discussed in Section 11 of this safety data sheet.

Skin: Temporary irritation (itching) or redness may occur.

Ingestion: Ingestion of this material is unlikely. If ingested, it may cause temporary irritation to the gastrointestinal (digestive) tract.

Inhalation: Move to fresh air. Seek medical attention if irritation persists.

Eye Contact: Do not rub or scratch eyes. Dust particles may cause the eye to be scratched. Wash eyes with running water for at least 15 minutes. Seek medical attention if irritation persists.

Skin Contact: Wash with mild soap and running water. Use a washcloth to help remove fibers. To avoid further irritation, do not rub or scratch irritated areas. Rubbing or scratching may force fiber into skin. Seek medical attention if irritation persists.

Ingestion: Ingestion of this material is unlikely. If this does occur, rinse mouth with water to remove dust and fibers and drink plenty of water to help reduce irritation. If irritation persists, seek medical attention.

Section V. Fire Fighting Measures

Flash Point, °C, Test Method:

None

Auto-Ignition Temperature:

NA

Upper Flammable Limit (UFL):

Not applicable

Lower Flammable Limit (LFL):

Not applicable

General Fire Hazards: There is no potential for spontaneous fire or explosion. Inorganic mineral wool fibers are naturally non-combustible and nonflammable. Organic binder can thermally decompose with elevated temperatures.

Extinguishing Media: Carbon dioxide (CO₂), water, water fog, dry chemical.

Fire Fighting Instructions: No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases. Use self contained breathing apparatus in a sustained fire.

Section VI. Accidental Release Measures

Clean-Up Procedures: Pick up large pieces. Vacuum dusts. Place in closable container for disposal.

Section VII. Handling and Storage

No special storage or handling procedures is required for this material.

Work/Hygienic Practices: Wash work clothing separately. Wash exposed skin area immediately with warm, soapy water.

Section VIII. Exposure Controls / Personal Protection

Ingredient	OSHA PEL	ACGIH TLV
Mineral Wool	15 mg/m ³ TWA (total particulate) 5 mg/m ³ TWA (respirable particulate)	10 mg/m ³ TWA (inhalable particulate) 3 mg/m ³ TWA (respirable particulate)
Cured Binder	None	None

Respiratory protection: Use 3M Model 8210, 8710, 9900 (in high humidity or high heat environment) or equivalent, NIOSH-certified dust respirator with efficiency rating of N95 or higher (under 42 CFR 84) when working with this product.

Skin Protection: Long-sleeved, loose fitting clothing and gloves.

Eye Protection: Goggles or face shield.

Engineering Control: General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below regulatory limits. Dust collection systems should be used in operations involving cutting or machining and may be required in operations using power tools.

Section IX. Physical and Chemical Properties

Boiling Point, °C:	NA
Vapor Pressure, mmHg at 20°C:	NA
Vapor Density (Air=1):	NA
Solubility in Water:	Insoluble
VOC, g/liter (Lb/Gallon):	0
Appearance & Odor:	Brown insulation - may possess faint resin odor.
Specific Gravity (H₂O=1):	Unknown
Volatile volume %:	0
Evaporation Rate (n-Bu. Ac.=1):	NA
pH:	Around 7
Viscosity:	NA

Section X. Stability & Reactivity Information

Stability: ☐ Unstable ☒ Stable
Incompatibility (Material to Avoid): Hydrofluoric acid.
Hazardous Polymerization: ☐ Will occur ☒ Will not occur
Photochemical Reactivity: ☐ Yes ☒ No

Hazardous Decomposition products: The decomposition products from this material are those that would be expected from any organic (carbon-containing) material, and are mainly derived from pyrolysis, or burning, of the resin. These decomposition products may include carbon monoxide, carbon dioxide, and ammonia.

Section XI. Toxicological Information

Component Carcinogenicity: Mineral Wool:

IARC: Group 3 (not classifiable)

NTP: Not listed

OSHA: Not listed

ACGIH: A3 (animal carcinogen with unknown relevance to humans)

Medical Conditions Aggravated by Exposure: Chronic respiration or skin condition may temporarily worsen from exposure to these products.

Section XII. Ecological Information

This product should not have any impact on the environment.

Section XIII. Disposal Considerations

Spill Response:

Land Spill: Scoop up or vacuum material and put into suitable container for disposal as a non-hazardous waste.

Water Spill: This material will sink and disperse along the bottom of waterways and ponds. It can not easily be removed after it is waterborne; however, the material is non-hazardous in water.

Air Release: This material will settle out of the air. It can then be scooped up or vacuumed for disposal as non-hazardous waste.

RCRA Hazard Class: Non-Hazardous

Disposal Instructions: Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Section XIV. Transport Information

DOT Proper Shipping Name:

Not Regulated

ID Number:

None

DOT Classification:

Non-hazardous

Label Required:

None

Packaging Requirements:

None

RQ:

None

Max. Net Quantity in One Package:

None

IATA/ICAO Shipping Description: Not regulated

IMO Shipping Description: Not regulated.

Section XV. Regulatory Information

TSCA: All components are listed on TSCA Inventory: ☒ Yes ☐ No

SARA Title III:

Hazard Categories:

Acute Health: Yes

Chronic Health: Yes

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 302 Extremely Hazardous Substance List, 40 CFR 355: ☐ Yes ☒ No

Section 313 Toxic Chemical Lists, 40 CFR 372.65: ☐ Yes ☒ No

California Proposition 65: Formaldehyde content in this product is below SARA 313 0.1% reportable quantity.

Formaldehyde is listed as a chemical known to the state of California to cause cancer.

Section XVI. Other Information

Superseded: January 31, 2013

Revised: December 29, 2014

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Issued Date: January 26, 2016

MATERIAL NAME: MINERAL WOOL INSULATION
1. Identification:

- 1.1 Product Generic Name: Mineral Wool Insulation
- 1.2 Product Use: Commercial and Industrial Insulation
- 1.3 Products:
 COREPLUS 1200 COREPLUS 1200 Pipe Fitting Insulation
 Industrial Board Drainage Media
 Industrial Flex Batt MB Plus
 Marine Board and Flex Curtain Wall
 F 110C Cavity Wall Board
 T & P Fab Board Sound Attenuation Fire Batt
 Fabrication Board Safing Insulation
 Thermawrap Insulation OEM Insulation
 Pipe and Tank Insulation Tank Top Insulation
- 1.4 Company Address: Fibrex Insulations Inc.
 561 Scott Rd.
 Sarnia, Ontario
 N7T 7L4
<http://www.fibrexinsulations.com>
- 1.5 Emergency Phone: (519) 336-7770
 (519) 336-8666 (FAX)

2. Product Ingredients:

<u>Ingredient</u>	<u>CAS Number</u>	<u>%</u>
Mineral Fiber	65997-17-3	96-99
Cured Urea Extended Phenol/Formaldehyde Binder	25104-55-6	1-4

3. Hazards Identification:

- 3.1 Appearance: Light yellow or grey board and batt.
- 3.2 Odour: Odourless.
- 3.3 Emergency Overview: Acrid smoke may be generated in a fire.
 Exposure to dust may be irritating to eyes, nose, and throat.
- 3.4 Potential Health Effects:
- Inhalation: Temporary irritation of the upper respiratory tract – may result from exposure to dust and fibers.
- Skin Contact: Dust and fibers may cause temporary mechanical irritation to the skin.
- Eye Contact: Dust and fibers may cause temporary mechanical irritation to the eyes.
- Ingestion: Ingestion of this product is unlikely. Should it occur, it may cause gastrointestinal irritation.



MATERIAL SAFETY DATA SHEET

MATERIAL NAME: MINERAL WOOL INSULATION

4. First-Aid Measures:

- 4.1 Inhalation: If inhaled, remove the affected person to fresh air. If irritation persists, get medical attention.
- 4.2 Skin Contact: If irritation occurs, do not rub or scratch. Rinse under running water before washing with mild soap and water. If irritation persists get medical attention.
- 4.3 Eye Contact: Flush eyes with water for at least 15 minutes. Do not rub eyes. Seek medical attention if irritation persists.
- 4.4 Ingestion: Ingestion of this product is unlikely. If it does occur, rinse mouth with water to remove fibers. Drinking water may help reduce gastrointestinal irritation. Do not induce vomiting unless directed by a physician.

5. Fire-Fighting Measures:

- 5.1 Extinguishing media: Use any extinguishing media appropriate for the surrounding fire.
- 5.2 Hazardous combustion products: Carbon monoxide, carbon dioxide, ammonia, hydrogen - nitrogen and nitrogen - oxygen compounds.
- 5.3 Fire-fighting Instructions: Observe normal fire-fighting procedures. Treat as residential building materials.
- 5.4 Flash point: None
- | | | | |
|-------------------------------------|----------------|-------------------------------------|----------------|
| <u>Upper Flammable Limit (UFL):</u> | Not Applicable | <u>Lower Flammable Limit (LFL):</u> | Not Applicable |
| <u>Autoignition:</u> | Not Applicable | <u>Explosive Properties:</u> | None |
- 5.5 Unusual fire and explosion hazards: May release acrid smoke in a sustained fire; the organic binder will emit toxic fumes and smoke when oxidized. Ventilation is recommended on initial equipment start up.

6. Accidental Release Measures:

- 6.1 Cleanup Procedures: Pick up large pieces. Minimize dust generation during clean-up. Vacuuming is the preferred method. If sweeping, use a dust suppressant to minimize potential exposures.
- 6.2 Containment Procedures: The material will settle out of the air. It can then be picked up or vacuumed and is non-hazardous waste.
- 6.3 Response Procedures: Follow clean-up procedures. Keep unnecessary personnel away.

7. Handling and Storage:

- 7.1 Handling:
- Keep product in package until installation to avoid unnecessary handling and dust generation.
 - Keep work area clean. Place scrap material in suitable containers.
 - Use recommended cleanup procedures to minimize potential exposure.
- 7.2 Storage:
- Store material in dry conditions protected from the elements.

MATERIAL NAME: MINERAL WOOL INSULATION

8. Exposure Controls/Personal Protection:

8.1 Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Local regulations may apply.

B. Component Exposure Limits:

<u>Source</u>	<u>Legal or Recommended Exposure Limit</u>	<u>Exposure</u>
OSHA	1 f / cc TWA (recommended)	For fibers > 5µm with diameter < 3µm
ACGIH	1 f / cc TWA (threshold limit value – TLV)	For fibers > 5µm in length with Diameter < 3µm
OSHA	15 mg / m ³ TWA – PEL (total particulate) 5 mg / m ³ TWA – PEL (respirable particulate)	Inert dust and particulate not otherwise regulated
ACGIH	10 mg / m ³ TWA – TLV (inhalable particulate) 3 mg / m ³ TWA – TLV (respirable particulate)	Particulate not otherwise classified containing no asbestos and < 1% crystalline silica

NOTE: Follow all applicable exposure limits. It is suggested to follow OSHA PEL of 1 f / cc – TWA and OSHA recommended PEL work practices and protective equipment to limit exposure.

8.2 Personal Protective Equipment:

A. Respiratory Dust Protection

Use a 3M Model 8210 or equivalent, NIOSH certified dust respirator with an efficiency rating of N95 or higher. For high humidity environments use a 3M Model 9900 or equivalent.

B. Skin Protection

Wear loose fitting, long sleeved shirts and long pants. Hats and impervious gloves are recommended. Remove fiber from clothes before leaving work to reduce potential skin irritation.

C. Eye Protection

Wear safety goggles or safety glasses with side shield protection. Use of contact lenses is not recommended.

9. Physical and Chemical Properties:

9.1	<u>Appearance:</u>	Grey, green fibrous material
9.2	<u>Physical State:</u>	Solid
9.3	<u>Odour:</u>	Slightly organic
9.4	<u>Boiling Point:</u>	Not Applicable
9.5	<u>Melting Point:</u>	> 2000 °F (1143 °C)
9.6	<u>Vapor Pressure:</u>	Not Applicable
9.7	<u>Vapor Density:</u>	Not Applicable
9.8	<u>Specific Gravity:</u>	Not Applicable
9.9	<u>Evaporation Rate:</u>	Not Applicable
9.10	<u>Freezing Point:</u>	Not Applicable
9.11	<u>Viscosity:</u>	Not Applicable
9.12	<u>Solubility (H₂O)</u>	Insoluble



MATERIAL SAFETY DATA SHEET

MATERIAL NAME: MINERAL WOOL INSULATION

10. Stability and Reactivity:

10.1 Stability: Stable

10.2 Reactivity: Not reactive

10.3 Hazardous Decomposition:

Primary combustion products are carbon monoxide, carbon dioxide, ammonia, and water. Other undetermined components could be released in trace quantities. Emission usually occurs in the first heating. Ensure good ventilation and or supply appropriate respirator.

10.4 Hazardous Polymerization: Will not occur

10.5 Incompatible Materials: Hydrofluoric acid
None others expected

11. Toxicological Information

11.1 Acute Toxicity:

Fibers and dust from mineral wool can cause temporary mechanical irritation of the eyes and upper respiratory tract. Inhalation may cause coughing and nose and throat irritation.

11.2 Chronic Toxicity:

In October 2001 the International Agency for Research on Cancer (IARC) concluded its re-evaluation of the carcinogenic risk of mineral wool fibers. The result was a reclassification of the fibers from Group 2B (possibly carcinogenic to humans) to Group 3 (not classifiable as to the carcinogenicity to humans). Epidemiological studies published during the 15 years prior to the 2001 IARC review provide no evidence of increased risk of cancer from occupational exposure during manufacture or use of mineral wool fiber.

11.3 Evaluation of Potential Carcinogenicity

<u>Source</u>	<u>Classification</u>	<u>Description</u>
IARC	Group 3	Not classifiable as a human carcinogen
ACGIH	Group A3	Animal carcinogen with unknown relevance to humans

12. Ecological Information:

12.1 Ecotoxicity: No data available for the products. The material is not expected to cause harm to animals, plants, or fish.

12.2 Environmental Fate: No data available for the product.

13. Disposal Considerations:

13.1 U.S. EPA Waste Number and Descriptions:

13.2 General Information: The products as supplied, are not expected to be a characteristic hazardous waste under RCRA if discarded.

13.3 EPA Waste Numbers: No EPA waste numbers are applicable for their product's components.



MATERIAL SAFETY DATA SHEET

MATERIAL NAME: MINERAL WOOL INSULATION

14. Transportation Information:

14.1 General Information: No special precautions.

14.2 U.S. Dot Information: The product is not classified as a hazardous material for transportation.

15. Regulatory Information:

15.1 U.S. Federal Regulations:

Toxic Substances Control Act (TSCA):

All components in the product are listed, as required, on the US EPA TSCA inventory, or are not required to be listed.

CERCLA:

Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less; statutory RQ = 1 pound (.454 kg); no final RQ is being assigned to the generic or broad class (related to fine mineral fibers).

Clean Air Act:

Mineral wool fibers appear on the Clean Air Act – 1990 Hazardous Air Pollution List.

15.2 State and Local Regulations:

State, Provincial, and Local regulations not identified in this Material Safety Data Sheet may apply.

15.3 WHMIS:

The products have been classified in accordance with the hazard criteria of the Controlled Product Regulations.

WHMIS IDL:

No components are listed on the IDL.

WHMIS Classifications:

No components are classified as controlled products.

This material is classified Group 3 (not classifiable as to carcinogenicity to humans).

16. Other Information:

16.1 Information about "Health and Safety of Rock and Slag Wool," can be obtained from the North American Insulation Manufacturer Association (NAIMA), 44 Canal Center Plaza, Suite 310, Alexandria, VA. 22314, USA. Home page: <http://www.naima.org>

16.2 Acronyms used in the MSDS:

ACGIH: American Conference of Government Industrial Hygienists.

CAS: Chemical Abstract Service.

CERCLA: Comprehensive Environmental Response Compensation and Liability Act.

DOT: Department of Transport.

IARC: International Agency for Research on Cancer.

MSDS: Material Safety Data Sheet.

NAIMA: North American Insulation Manufacturer's Association.

NIOSH: National Institute for Occupational Safety and Health.



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MATERIAL NAME: MINERAL WOOL INSULATION

OSHA: Occupational Safety and Health Administration.

PEL: Permissible Exposure Limit.

RCRA: Resource Conservation and Recovery Act.

RQ: Reportable Quantity.

TSCA: Toxic Substance Control Act.

TWA: Time Weighted Average.

TLV: Threshold Limit Value.

LEL: Lower Exposure Limit.

NFPA: National Fire Protection Association.

16.3 NFPA Hazard Ratings:

Health: 1

Flammability: 0

Reactivity: 0

16.4 Accuracy:

The information contained herein is based upon data considered to be accurate and is provided in good faith to comply with applicable federal, state and provincial laws. No warranty or representation of law or fact with respect to such information is intended or given.

Prepared by Fibrex Insulations Inc., 2003

Material Name: Mineral Wool Insulation

1. Identification:

- 1.1 Product Generic Name: Mineral Wool Insulation
- 1.2 Product Use: Commercial, Industrial, Residential, and Marine Insulation
- 1.3 Products: AFB[®], CAVITYROCK[®], COMFORTBATT[®], COMFORTBOARD[™], CONROCK[®], CURTAINROCK[®], DRAINBOARD[®], ENERWRAP[®], FABROCK[™], FIREWALL[®], MONOBOARD[®], ProRox[®], RHM[®], RHT[®], ROCKBOARD[®], ROCKFILL[™], ROXUL Plus[®], SAFE[®], SAFE'n'SOUND[®]1, SeaRox[®], STURDIROCK[®], TECHTON 1200[®], TECHTON 1200[®] MARINE, TOPROCK[®]
- 1.4 Company Address: ROXUL Inc.
420 Bronte St. S.
Suite 105
Milton, Ontario
Canada
L9T 0H9
- 1.5 Web Site: www.roxul.com
- 1.6 If further information is required, please call or fax ROXUL Inc.
Telephone: 1-800-265-6878 or 905-878-8474 Fax: 905-878-8077

1. SAFE'n'SOUND[®] is a registered Trademark used under license by ROXUL Inc.

2. Information on Ingredients:

<u>Ingredient Name</u>	<u>CAS Number</u>	<u>%</u>
Mineral Fiber	RN 65997-17-3	94-99
Cured Urea Extended Phenolic Formaldehyde Binder	25104-55-6	1-6

3. Hazards Identification:

- 3.1 Appearance and Odor: Grey, green, brown fibrous batt, blanket, preformed pipe or board.
- 3.2 Emergency Overview: Acid smoke may be generated during a fire.
Exposure to dust may be irritating to the eyes, nose and throat.
- 3.3 Potential Health Effects:
- 3.3.1 Inhalation: Temporary mechanical irritation of the upper respiratory tract (scratchy throat, coughing, congestion) may result from exposures to dusts and fibers in excess of applicable exposure limits.
- 3.3.2 Skin Contact: Dusts and fibers may cause temporary mechanical irritation (itching) or redness to the skin.
- 3.3.3 Eye Contact: Dusts and fibers may cause temporary mechanical irritation (itching) or redness to the eyes.
- 3.3.4 Ingestion: Ingestion of this product is unlikely and not intended under normal conditions of use. Ingestion of this product may cause gastrointestinal irritation.
- 3.3.5 Existing Medical Conditions: Pre-existing chronic eye, skin and respiratory conditions may temporarily worsen due to exposure to dusts and fibers.

4. First-Aid Measures:

- 4.1 Inhalation: If irritation occurs, remove the affected person to fresh air. Drink water, and blow nose, to clear dusts and fibers from throat and nose. If irritation persists, consult a physician.
- 4.2 Skin: If irritation occurs, do not rub or scratch. Rinse under running water prior to washing with mild soap and water. Use a washcloth to help remove fibers. If irritation persists, consult a physician.
- 4.3 Eyes: If irritation occurs, flush eyes with plenty of water for at least 15 minutes. Do not rub the eyes. Consult a physician if irritation persists.
- 4.4 Ingestion: Ingestion of this product is unlikely and not intended under normal conditions of use. If it does occur, rinse mouth with plenty of water to help remove dust and fibers, and drink plenty of water to help reduce potential gastrointestinal irritation. Do not induce vomiting unless directed to do so by a physician.

5. Fire-Fighting Measures:

The products are non-combustible and do not pose a fire hazard. However, packaging material may burn.

- 5.1 Suitable extinguishing media: Water, foam, carbon dioxide or dry powder
- 5.2 Extinguishing media which must not be used for safety reasons: None
- 5.3 Combustion products: Carbon dioxide, carbon monoxide and trace gases
- 5.4 Special protective equipment for fire-fighters: Observe normal fire fighting procedures
- 5.5 Flash point: None Flash Point Method Used: Not Applicable
- | | |
|---|---|
| <u>Upper Flammable Limit (UFL)</u> : Not Applicable | <u>Lower Flammable Limit</u> : Not Applicable |
| <u>Autoignition</u> : Not Applicable | <u>Explosive Properties</u> : Not Applicable |

6. Accidental Release Measures:

- 6.1 Containment Procedures: Pick up large pieces and scoop up dusts and fibers after they have settled out of air. These materials will disperse and settle along the bottom of waterways and ponds. It cannot easily be removed once it is waterborne, but is considered non-hazardous in water.
- 6.2 Cleanup Procedures: Use OSHA-recommended work practices and protective equipment as described in Section 8 of this Material Safety Data Sheet. Avoid generating airborne dusts and fibers during cleanup. Do not use compressed air. Vacuum dusts and fibers. Place material in an appropriate container for disposal as non-hazardous waste.
- 6.3 Response Procedures: Isolate area. Keep unnecessary personnel away. If dry methods or compressed air are used to collect dusts and fibers, all personnel in the area should wear OSHA-approved protective equipment (see Section 8 of this Material Safety Data Sheet).

7. Handling and Storage:

7.1 General Precautions:

- Utilize OSHA-recommended work practices and protective equipment when using the products (see Section 8 of this Material Safety Data Sheet).

7.2 Handling:

- Unpack material at application site to avoid unnecessary handling of product.
- Keep work areas clean. Avoid unnecessary handling of scrap material and debris by placing such materials in suitable containers, which should be kept as close to the work area as possible.
- Ensure good ventilation. Local exhaust ventilation may be required if the method of use produces dust levels which exceed applicable exposure limits (see Section 8 of this Material Safety Data Sheet).
- Avoid excessive eye and skin contact with dusts and fibers.
- Use recommended cleanup procedures to avoid buildup of dusts and fibers in the work area.

7.3 Storage:

- Keep material in original packaging until it is to be used.
- Store material to protect against adverse conditions including precipitation.

8. Exposure Controls/Personal Protection:

8.1 Exposure Guidelines:

- 8.1.1 **General Product Information:** Follow all applicable exposure limits. Local regulations may apply. Roxul recommends that users of the products adhere to the OSHA-recommended PEL of 1 f/cc TWA (fibers longer than 5 µm with diameters less than 3 µm). This recommended PEL, together with recommended work practices and personal protective equipment, were adopted in a Health and Safety Partnership Program (HSPP) agreement in 1999 between OSHA and the North American Insulation Manufacturers Association (NAIMA), of which Roxul is a member. Adherence to the OSHA-recommended PEL, work practices and protective equipment in the HSPP is expected to provide appropriate protection against all inhalation-related health risks that may be associated with exposures to mineral wool fibers (ACGIH 1997; NAIMA 1999; OSHA 1999; National Research Council 2000, IARC 2001), and to minimize eye and skin irritation.

8.1.2 Component Exposure Limits:

Source	Legal or Recommended Exposure Limit	Exposure
OSHA	1 f/cc TWA (recommended)	Synthetic Vitreous Fibers, > 5 µm length, < 3 µm diameter
ACGIH	1 f/cc TWA (threshold limit value - TLV)	Synthetic Vitreous Fibers, > 5 µm length, < 3 µm diameter
OSHA	15 mg/m ³ TWA-PEL (total particulate) 5 mg/m ³ TWA-PEL (respirable particulate)	Inert dust and particulates not otherwise regulated
ACGIH	10 mg/m ³ TWA-TLV (inhalable particulate) 3 mg/m ³ TWA-TLV (respirable particulate)	Particulates not otherwise classified, containing no asbestos and <1% crystalline silica

- 8.2 **Equipment and Work Practices:** Follow OSHA-recommended equipment and work practices. A complete copy of these practices can be obtained from Roxul Inc. (see Section 1 of this Material Safety Data Sheet), and is available on the OSHA website (<http://www.osha.gov/SLTC/syntheticmineral/fibers>).
- 8.2.1 Follow OSHA-recommended safe handling practices listed in Section 7.2 above.
- 8.2.2 Where feasible, general dilution ventilation or local exhaust ventilation should be used as necessary to maintain exposures below applicable exposure limits. Dust collection systems should be used in cutting or machining operations and may be needed when using power tools.
- 8.2.3 Follow OSHA-recommended work practices when fabricating, installing or removing product.
- 8.3 **Personal Protective Equipment:**
- 8.3.1 **Respiratory:**
- 8.3.1.1 **General:**
In poorly ventilated areas when dusty conditions exist and/or dust levels exceed applicable exposure limits, wear a NIOSH certified dust respirator with an efficiency rating of N95 or higher. Use disposable face masks complying with NIOSH respirator standards, such as a 3M Model 8210 (or 8710) (3M Model 9900 in high humidity environments) or equivalent. For exposures up to five times the established exposure limits use a quarter-mask respirator, rated N95 or higher; and for exposures up to ten times the established exposure limits use a half-mask respirator (e.g. MSA's DM-11, Racal's Delta N95, 3M's 8210), rated N95 or higher. For exposures up to 50 times the established exposure limits use a full-face respirator, rated N99 or higher.
- 8.3.1.2 **Specific Operations:**
In poorly ventilated areas when dusty conditions exist and/or dust levels exceed applicable exposure limits, wear a NIOSH certified dust respirator with an efficiency rating of N95 or higher, such as a 3M Model 8210 (or 8710) (3M Model 9900 in high humidity environments) or equivalent, when fabricating, installing or removing product.
- 8.3.2 **Skin:**
Wear loose fitting, long sleeved and long-legged clothing to prevent irritation. A head cover is also recommended, especially when working with material overhead. The use of suitable gloves is also recommended. Skin irritation cannot occur if there is no contact with the skin. Do not tape sleeves or pants at wrists or ankles. Remove fibers from the work clothes, before leaving work to reduce potential skin irritation. If working in a very dusty environment it is advisable to shower and change clothes
- 8.3.3 **Eyes/Face:**
Wear safety goggles or safety glasses with side shields.

9. Physical and Chemical Properties:

9.1 Appearance:	Grey, green fibrous batt or board
9.2 State:	Solid
9.3 Odor:	May have slight resin odour
9.4 Boiling point:	n.a.
9.5 Melting point:	Approximately 2150 °F (1177 °C)
9.6 Vapour pressure:	n.a.
9.7 Vapour Density:	n.a.
9.8 Specific Gravity:	n.a.
9.9 Evaporation Rate:	n.a.
9.10 Freezing Point:	n.a.
9.11 Viscosity:	n.a.
9.12 Solubility:	Insoluble (H ₂ O)
9.13 Partition coefficient:	n.a.

n.a. = not applicable

Material Name: Mineral Wool Insulation

10. Stability and Reactivity:

10.1 Stability: Stable

10.2 Reactivity: Not reactive

10.3 Thermal decomposition products:

Primary combustion products of the cured urea extended phenolic formaldehyde binder, when heated above 390 °F (200 °C), are carbon monoxide, carbon dioxide, ammonia, water and trace amounts of formaldehyde. Other undetermined compounds could be released in trace quantities. Emission usually only occurs during the first heating. The released gases may be irritating to the eyes, nose and throat during initial heat-up. Use appropriate respirators (air supplied) particularly in tightly confined or poorly ventilated areas during initial heat-up.

10.4 Hazardous Polymerization: Will not occur

10.5 Incompatible Materials: This product reacts with hydrofluoric acid.

11. Toxicological Information:

11.1 Acute Toxicity:

Coarse fibers and dust from mineral wool products can cause temporary mechanical irritation (itching, redness) of the skin, and of the mucous membranes in the eyes and in the upper respiratory tract (nose and throat). The itching and possible inflammation are a mechanical reaction to dust and coarse fibers (of more than about 5 µm in diameter), and are not damaging in the way chemical irritants may be. They generally abate within a short time after the end of exposure. When products are handled continually, the skin itching generally diminishes.

11.2 Chronic Toxicity:

11.2.1 Summary: In October 2001, IARC completed a re-evaluation of respirable mineral wool fibers and classified them in Group 3 (not classifiable as to their carcinogenicity to humans). A summary of the most important scientific studies appears below:

11.2.2 Human Data:

11.2.2.1 The possible carcinogenic effects of exposure to mineral wool fibers has been evaluated in a number of epidemiological (human) studies. Most of this research, including large long-term studies of mineral wool production workers in the U.S. and Europe, has been sponsored or supported by the North American and International thermal insulation industries, including Roxul Inc. Published reports of the early results of these studies identified significantly elevated rates of respiratory cancer in several subcohorts of the worker populations under evaluation (e.g., Simonato et al. 1987; Enterline et al. 1987). However, the studies had several methodological limitations, including failure to control for confounding exposures to other possible causes of the elevated cancer risk, including tobacco use and occupational exposures to recognized carcinogens such as asbestos. For these reasons, the authors of these reports did not interpret the results as establishing an association between exposure to mineral wool fibers and an increased risk of cancer. Several of these earlier reports formed part of the basis for IARC's previous classification of mineral wool fibers in Group 2B (possibly carcinogenic to humans) (IARC 1987).

11.2.2.2 Follow-up studies, including case-control studies designed to exclude the contribution of confounding exposures to the cancer experience of the study populations, found no evidence that mineral wool fibers are associated with an increased cancer risk (Marsh et al. 1996; Wong, et al. 1991; Kjaerheim et al. 2001). In announcing the new Group 3 classification for mineral wool fibers, IARC stated: "Epidemiologic studies published during the 15 years since the previous IARC Monographs review of these fibers in 1988 provide no evidence of increased risks of lung cancer or of mesothelioma (cancer of the lining of the body cavities) from occupational exposures during manufacture of these materials" (IARC 2001).

11.2.3 Animal Data:

11.2.3.1 Several studies of intraperitoneal injection of high doses of mineral wool fibers have produced significant increases in the incidence of mesothelioma (IARC 2002). The intraperitoneal injection studies formed part of the basis for IARC's previous (IARC 1987) Group 2B classification for mineral wool fibers. Leading scientists agree that intraperitoneal injection studies (i.e., surgical implantation or injection into the chest or abdomen) are the least relevant type of animal study for evaluating

Material Name: Mineral Wool Insulation

potential human risk for fiber exposures, because such studies bypass the animals' natural defense mechanisms and involve a type and pattern of exposure (implantation of a high dose early in life) that does not mimic human patterns of exposure (inhalation of much lower doses over a lifetime) (National Research Council 2000).

- 11.2.3.2 A well-designed long-term inhalation study in rats exposed to mineral wool fibers found no significant increase in lung tumor incidence, and no mesotheliomas (IARC 2002). Likewise, in two intratracheal instillation studies of mineral wool fibers, no significant increase in the incidence of lung tumors or mesotheliomas was found (IARC 2002). Inhalation studies are regarded as the most relevant type of animal data for evaluating potential human risk, and intratracheal instillation studies, while less relevant, are considered valuable for the initial screening of fibrous compounds (National Research Council 2000). Thus, evaluating all the available animal studies in conjunction with the human data, IARC's most recent review finds "inadequate evidence overall for any cancer risk" from mineral wool fibers (IARC 2001).

11.3 Evaluations of Potential Carcinogenicity:

<u>Source</u>	<u>Classification</u>	<u>Description</u>
IARC	Group 3	Not Classifiable as a Human Carcinogen
ACGIH	Group A3	Confirmed Animal Carcinogen with Unknown Relevance to Humans

12. **Ecological Information:**

- 12.1 Ecotoxicity: No data available for the products. The products are stable, are not expected to cause harm to animals, plants or fish, and have no other known adverse environmental effects.
- 12.2 Environmental Fate: No data available for the products.

13. **Disposal Considerations:**

13.1 US EPA Waste Number & Descriptions:

13.1.1 General Product Information: The products, as supplied, are not expected to be a characteristic hazardous waste under RCRA if discarded.

13.1.2 EPA Waste Numbers: No EPA Waste Numbers are applicable for this product's components.

- 13.2 Disposal Instructions: Product is not considered a hazardous waste. Dispose of waste material according to Federal, State, Provincial, and Local environmental regulations.

14. **Transport Information:**

- 14.1 General: No special precautions.
- 14.2 US DOT Information: This product is not classified as a hazardous material for transport.

15. **Regulatory Information:**

15.1 U.S. Regulations:

15.1.1 Toxic Substances Control Act (TSCA): All components in this product are listed, as required, on the US EPA TSCA inventory, or are not required to be listed

15.1.2 CERCLA: Includes mineral fiber emissions from facilities manufacturing or processing glass rock or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less; Statutory RQ = 1 pound (.454 kg); no final RQ is being assigned to the generic or broad class (related to Fine mineral fibers).

- 15.1.3 Clean Air Act: Mineral wool fiber appears on the Clean Air Act-1990 Hazardous Air Pollutants List.
- 15.2 State and Local Regulations: State, Provincial, and Local regulations not identified in this Material Safety Data Sheet may apply.
- 15.3 WHMIS: The products have been classified in accordance with the hazard criteria of the Controlled Product Regulations and this Material Safety Data Sheet contains all the information required by the Controlled Product Regulations

- 15.3.1: WHMIS IDL: No components are listed on the IDL
- 15.3.2: WHMIS Classification: No components are classified as controlled products.

16. Further Information:

16.1 Potential Health Effects:

IARC Monograph Man-made Vitreous Fibres, press release October 2001

Safety in the Use of Mineral and Synthetic Fibers, Occupational Safety and Health Series, International Labor Office (ILO).

Information about "Health and Safety Research on Rock- and Slag-wool" can be obtained from the North American Insulation Manufacturers Association (NAIMA), 44 Canal Center Plaza, Suite 310, Alexandria, VA 22314, USA). Home-page: <http://www.naima.org>

16.2 Key/Legend:

ACGIH = American Conference of Governmental Industrial Hygienists; CAA = Clean Air Act; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; DOT = Department of Transportation; EPA = Environmental Protection Agency; HMIS = Hazardous Material Identification System; HSPP = Health and Safety Partnership Program; IARC = International Agency for Research on Cancer; MSDS = Material Safety Data Sheet; NAIMA = North American Insulation Manufacturers Association; NFPA = National Fire Protection Association; NIOSH = National Institute for Occupational Safety and Health; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit; RCRA = Resource Conservation and Recovery Act; RQ = Reportable Quantity; SVF = synthetic vitreous fibers; TSCA = Toxic Substances Control Act; TWA = time-weighted average; WHMIS = Workplace Hazardous Materials Information System.

- 16.3 References: Complete citations, or copies, of all references cited in this Material Safety Data Sheet can be obtained from Roxul Inc. (see Section 1).
- 16.4 Accuracy: The information contained herein is based upon data considered to be accurate. However, no warranty is expressed or implied regarding the accuracy of these data, the results to be obtained from the use thereof, or that any such use will not infringe upon any patent. This information is furnished as a guide only and upon the condition that the person receiving it shall make tests to determine the accuracy and suitability for his or her own purpose.
-

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Product Name: Pyrogel® XT

Synonyms: Silica aerogel materials

Use of the Substance/Preparation: High performance insulation material

Manufacturer: Aspen Aerogels, Inc.

Address: 30 Forbes Road
Northborough, MA.01532

Telephone: (508) 691-1111

Email: EHS@aerogel.com

Emergency Telephone Number: 800-535-5053 US & Canada (INFOTRAC)
352-323-3500 International

MSDS Prepared by: EHS

Phone Number of Preparer: 508-691-1111

2. HAZARDS IDENTIFICATION

Appearance and Odor: Yellow fabric material with no characteristic odor. Under certain conditions, product may have faint ammonia-like odor.

Classification: Product is not classified as a dangerous material or preparation as defined in EC Directives 67/548/EEC or 1999/45/EC. See Section 11 for a full discussion of titanium dioxide.

Emergency Overview: Inhalation of excessive amounts of dust from the product may cause mechanical irritation to the respiratory tract. Dermal contact may cause mechanical irritation.

POTENTIAL HEALTH EFFECTS

Inhalation: Inhalation of airborne dusts may cause mechanical irritation of the upper respiratory tract.

Eye Contact: Exposure to dust from this product can produce a drying sensation and mechanical irritation of the eyes.

Skin Contact: Skin contact with dust from this product can produce a drying sensation and mechanical irritation of the skin and mucous membranes.

Skin Absorption: Material will not absorb through skin.

Ingestion: This material is not intended to be ingested (eaten). If ingested in large quantity, the material may produce mechanical irritation and blockage

Acute Health Hazards: Dust from this product is a physical irritant, and may cause temporary irritation or scratchiness of the throat and / or itching and redness of the eyes and skin.

Chronic Health Hazards: In 2010 (based on a 2006 Working Group meeting), the International Agency for Research on Cancer (IARC) reclassified titanium dioxide as "possibly carcinogenic to humans" (Group 2B) based on finding of carcinogenicity in experimental animals. In the Titanium Dioxide Monograph (Vol. 93), IARC concluded that there is inadequate evidence in humans for the carcinogenicity of titanium dioxide. However, see Section 11 for a full discussion.

Medical Conditions Aggravated by Exposure: Excessive inhalation of dust may aggravate pre-existing chronic lung conditions including, but not limited to, bronchitis, emphysema, and asthma. Dermal contact may aggravate existing dermatitis.

CARCINOGENICITY

Component	ACGIH	NTP	IARC
Titanium Dioxide	A4	Not Listed	2B
Continuous Filament Glass Fibers	A4	Not Listed	3
Aluminum Trihydrate	Not Listed	Not Listed	None
Amorphous Silica	NA	Not Listed	None

SECTION 2 NOTES: This product is composed of synthetic amorphous silica dioxide. Amorphous silica should not be confused with crystalline silica. Epidemiological studies indicate low potential for adverse health effects from exposure to synthetic amorphous silica. See Section 11 for a full discussion of titanium dioxide.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percent	EINECS Number	EU Classification
Methylsilylated Silica	68909-20-6	40-50	272-697-1	None
Fibrous glass (textile grade)	NA	40-50	Not Assigned	None
Titanium Dioxide	1317-80-2	1-5	236-675-5	None
Aluminum Trihydrate	21645-51-2	1-5	244-492-7	None

4. FIRST AID MEASURES

- Eye Contact:** Immediately wash with large amounts of water for at least 15 minutes, occasionally lifting lids. If irritation occurs and persists, get medical treatment.
- Skin Contact:** Wash skin thoroughly with soap and water until clean. The soap will act as a surfactant to remove the material. Remove contaminated clothing and shoes. Wash clothing before reuse. Obtain medical attention if symptoms occur.
- Ingestion:** Material will pass through the body normally. Obtain medical attention if symptoms occur.
- Inhalation:** Remove to fresh air. Drink water to clear throat and blow nose to remove dust. Obtain medical attention if ill effects persist.

5. FIRE-FIGHTING MEASURES
5.1 FLAMMABILITY PROPERTIES

Flammable	No
Auto ignition Temperature	Not Applicable
Flash Point	Not Applicable
Flammability Limits: (Lower Explosive Limit)	Not Applicable
Flammability Limits: (Upper Explosive Limit)	Not Applicable
Explosion Data – Sensitivity to impact	Not sensitive
Explosion Data – Sensitivity to static discharge	Not sensitive

5.2 EXTINGUISHING MEDIA:

Use media suitable for surrounding fire and that are appropriate to the surrounding environment; normal fog nozzle water application and/or exclusion of air is typically suitable for extinguishing this product in blanket form.

5.3 PROTECTION FOR FIRE FIGHTERS

- Special Fire Fighting Procedures:** Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases produced by a fire.
- Unusual Fire and Explosion Hazards:** Product is a super-insulation material. Rolls of material can retain heat within internal layers and re-ignite combustible materials if heat is not removed.

Hazardous Decomposition and/or Combustion Products: Primary combustion products are carbon monoxide and carbon dioxide. Other undetermined products could be released in small quantities.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Minimize dust generation. Ensure adequate ventilation. Use personal protective equipment as necessary.

Environmental Precautions: Material is not soluble. Do not flush into surface water or sanitary sewer system.

Methods for Cleaning Up: Contain and collect released material for proper disposal. Dry vacuuming is the preferred method of cleaning up.

7. HANDLING AND STORAGE

Handling Aerogel blankets will generate dust when handled. Workplace exposure to all dusts should be controlled with standard industrial hygiene practices. Dry vacuuming is the preferred method for cleaning up dust. Because aerogel dust is hydrophobic, water is not effective as a dust control agent.

Storage Aerogel blankets should be kept in their packaging until they are ready to be used. Unpack the material in the work area. This will help to minimize the area where dust exposure may occur. Trimmed material and scrap should be promptly packed in disposal bags.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure Limit Values

There are no exposure limits identified for the main product component, classified as synthetic amorphous silica.

CAS Number	Component Name	Exposure Limits	
7631-86-9	Silica, Amorphous	Germany TRGS 900	4 mg/m ³ (inhalable fraction)
		UK WEL	6 mg/m ³ (total inhalable fraction)
			2.4 mg/m ³ (respirable fraction)
		US OSHA PEL (TWA) ^a :	15 mg/m ³ (total dust)
1317-80-2	Titanium Dioxide ¹		5 mg/m ³ (respirable fraction)
		US ACGIH ^b	10 mg/m ³ (inhalable)
			3 mg/m ³ (respirable)
			1.5 mg/m ³ (respirable dust)
21645-51-2	Aluminum Trihydrate	Germany TRGS 900	10 mg/m ³ (total inhalable fraction)
		UK WEL	4 mg/m ³ (respirable fraction)
		US OSHA PEL (TWA):	10 mg/m ³ (total dust)
			5 mg/m ³ (respirable fraction)
NA	Continuous filament glass fibers	US ACGIH:	10 mg/m ³ (total dust)
			15 mg/m ³ (total dust)
		US OSHA PEL (TWA) ^a :	5 mg/m ³ (respirable fraction)
		US ACGIH ^b	10 mg/m ³ (inhalable)
NA	Continuous filament glass fibers		3 mg/m ³ (respirable)
		US ACGIH	1.0 fibers/cc ^c
			5 mg/m ³ (inhalable)
		US OSHA	10 mg/m ³ (total dust)
			5 mg/m ³ (respirable fraction)

^a The US OSHA standard for amorphous silica is: (80 mg/m³)/(%SiO₂). The NIOSH Sampling Method 7501 for Amorphous Silica calculates the %SiO₂ based on the percentage of crystalline silica in the sample. Because the percentage of crystalline silica in aerogel is 0%, the particulate limit applies.

¹ See Section 11 for a discussion of alternative recommended exposure levels for this component.

^b US ACGIH based on Particles Not Otherwise Specified (PNOS)

^c Respirable fibers: length >5 µm; aspect ratio ≥3:1, as determined by the membrane filter method at 400–450X magnification (4-mm objective), using phase-contrast illumination. US NIOSH considers fibers as: length >5 µm, width <3 µm diameter and length:width ratios ≥3.

8.2 Exposure Control

Ventilation:	Local exhaust in accordance with general industrial hygiene practices is recommended to control dust.
Respiratory Protection:	A properly fitted, NIOSH or CE approved respirator should be worn when ventilation is unavailable or inadequate to maintain airborne concentrations below applicable occupational exposure limits. A respiratory protection program that meets applicable local regulations should be implemented whenever workplace conditions warrant use of a respirator.
Hand Protection	Silica aerogels are hydrophobic (repel water) and may cause drying and irritation of the skin, eyes, and mucous membranes. For this reason, nitrile, latex, or other impermeable gloves should be worn when handling aerogel blankets.
Eye Protection:	Safety glasses. Chemical goggles could be worn to provide greater protection from dust.
Skin Protection:	Long-sleeved, long-legged work clothes are also advised. Disposable coveralls should be considered to minimize skin exposure and track out of aerogel dusts into adjacent areas.
Work Hygienic Practices	Keep materials packaged until just prior to use. Die cut in preference to rotary or other cutting methods. Dry vacuum with proper filtration preferred to sweeping. Wash thoroughly after using the product. Wash clothing if dust conditions present. Wash hands before eating or drinking.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Opaque yellow fabric blanket; material is hydrophobic (repels water)
Odor:	No characteristic odor. Under certain conditions, such as high storage temperatures, product may have faint ammonia-like odor.
Odor Threshold	Reported ammonia threshold vary widely: 0.6 to 53 ppm
pH:	Not applicable.
Specific Gravity:	Not applicable
Boiling Point/Range:	Not applicable.
Freezing Point	Not applicable
Flash Point:	Not applicable.
Flammability (solid, gas):	Not applicable.
Explosive Properties:	Not applicable.
Oxidizing Properties:	Not applicable.
Vapor Pressure:	Not applicable.
Vapor Density (air = 1)	Not applicable
Solubility:	Insoluble.
Viscosity:	Not applicable.
Evaporation Rate:	Not applicable
Coefficient of water/oil distribution	Not applicable

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable

Conditions to Avoid:	Prolonged exposure to temperatures above the recommended use temperature as noted in technical data sheet. Avoid conditions that produce large quantities of dust dispersed in air.
Materials to Avoid:	Avoid strong acids and bases.
Hazardous Decomposition Products	Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products, including carbon monoxide and other productions of combustion, may occur as a result of oxidation, heating or reaction with another material.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Dust may cause mechanical irritation and dryness to eyes and skin.

Synthetic Amorphous Silica

Oral LD50:	>5,000 mg/kg
Inhalation LC50:	>2,000 mg/m ³
Dermal LD50:	>3,000 mg/kg
Eye Irritation:	Synthetic amorphous silica and silicates are not irritating to skin and eyes under experimental conditions, but may produce dryness following prolonged and repeated exposure.
Skin Irritation:	Synthetic amorphous silica and silicates are not irritating to skin and eyes under experimental conditions, but may produce dryness following prolonged and repeated exposure.

Titanium Dioxide

Oral LD50:	>5,000 mg/kg
Inhalation LC50:	>6,820 mg/m ³ (ALC/4 hour rat)
Dermal LD50:	>10,000 mg/kg (rabbit)
Eye Irritation:	Slight irritation
Skin Irritation:	Slight irritation

Aluminum Trihydrate

Oral LD50:	>5,000 mg/kg (rat)
Eye Irritation:	Slightly irritating
Skin Irritation:	Non-irritating

CHRONIC TOXICITY

Some studies of long term amorphous silica dust exposures indicate a potential for decreased lung function. In surveyed studies, this effect is characterized as compounded by smoking. Additionally, surveyed studies characterize the decreased lung function effect as reversible on discontinuation of exposure. There is no available data for this product on skin sensitization, respiratory sensitization, reproductive toxicity, teratogenicity, embryotoxicity, mutagenicity or synergisticity.

CARCINOGENICITY

In 2010 (based on a 2006 Working Group meeting), the International Agency for Research on Cancer (IARC) reclassified titanium dioxide (TiO₂) to "possibly carcinogenic to humans" (Group 2B). This classification was based on *inadequate evidence* in humans and *sufficient evidence* in experimental animals. In the Titanium Dioxide Monograph (Vol. 93), IARC concluded that the human carcinogenic studies "do not suggest an association between occupational exposure as it occurred in recent decades in western Europe and North America and risk of cancer." (See page 273 of the Monograph) The IARC classification of TiO₂ in Group 2B was based on available information discussed in the Monograph, primarily in animals (rodents).

US OSHA currently does not regulate titanium dioxide as a carcinogen (ref: OSHA Letter of Interpretation to North American Refractories Co, 11/19/97). The US National Institute for Occupational Safety & Health (NIOSH)

currently recommends that titanium dioxide be considered a potential occupational carcinogen. Previously, NIOSH based its recommendation on a chronic inhalation study of rats exposed to 250 mg/m³ of fine titanium dioxide. More recently, NIOSH has recommended airborne exposure limits for inhaled titanium dioxide at 2.4 mg/m³ for fine TiO₂ and 0.3 mg/m³ for ultrafine (including engineered nanoscale) TiO₂ as TWA concentrations for up to 10 hr/day during a 40-hour work week, using the international definitions of respirable dust [CEN 1993; ISO 1995] and the NIOSH Method 0600 for sampling airborne respirable particles [NIOSH 1998]. See NIOSH Current Intelligence Bulletin No. 63 (2011), which is available at <http://www.cdc.gov/niosh/docs/2011-160/>. NIOSH has indicated that the tumorigenic effects of titanium dioxide do not appear to be chemical-specific or a direct action of the chemical substance itself. Rather, these effects appear to be a function of particle size and surface area acting through a secondary genotoxic mechanism associated with persistent inflammation.

The State of California has included titanium dioxide (as airborne, unbound particles of respirable size) in its List of Chemicals Known to the State to Cause Cancer effective September 2, 2012, under California Environmental Protection Agency's Proposition 65 regulations.. See also Section 15 below. The American Conference of Governmental Industrial Hygienists (ACGIH) considers titanium dioxide to be not classifiable as a human carcinogen (A4).

According to the manufacturer, the fiberglass in this product is considered textile grade fibrous glass and it is not classified as a carcinogen by ACGIH, IARC, NTP or OSHA.

The International Agency for Research on Cancer (IARC) considers synthetic amorphous silica to be not classifiable as to its carcinogenicity to humans (Group 3).

NOTE TO SECTION 11: Toxicological information for synthetic amorphous silica is based on literature review.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Synthetic Amorphous Silica	Fish: LC50 > 10,000 mg/L (Brachydanio rerio: 96 hour), Method OECD 203 Daphnia magna: EC50 > 10,000 mg/l (24 hours), Method OECD 202
Titanium Dioxide	Fish: LC50 > 1,000 mg/L (fathead minnow 96 hour)
Aluminum Trihydrate	Fish: LC50 > 10,000 mg/L

Mobility	None expected due to insoluble nature of product.
Persistence and Biodegradability	Not applicable for inorganic material.
Bioaccumulative Potential	None expected due to insoluble nature of product.
Other Adverse Effects	None expected.

NOTE TO SECTION 12: Ecological information is based on literature review for synthetic amorphous silica. Information on aluminum trihydrate based on manufacturer's information.

13. DISPOSAL CONSIDERATIONS

Dispose in an approved landfill in accordance with federal, state / provincial, and local regulation. Cover promptly to avoid blowing of dust. This product is not regulated as a hazardous waste under US RCRA regulations.

14. TRANSPORT INFORMATION

Shipping Name:	Not regulated for transport
Hazard Class	None
UN Number	None
Packing Group	None
Required Label(s)	None
Marine Pollutant	No
Additional Information	None

15. REGULATORY INFORMATION

EU REGULATORY INFORMATION

Product is not classified as a dangerous material or preparation as defined in EC Directives 67/548/EEC or 1999/45/EC. Aerogel insulation blankets are considered an article, not a substance or preparation, under the REACH directive.

U.S. FEDERAL REGULATIONS

CERCLA (Comprehensive Response Compensation and Liability Act): Product is not classified as hazardous or reportable under this requirement.

SARA TITLE III (Superfund Amendments and Reauthorization Act): Product is not classified as hazardous or reportable under this requirement.

311/312 HAZARD CATEGORIES: Materials in this product are classified as hazardous or reportable under this requirement.

313 REPORTABLE INGREDIENTS: Materials in this product are not classified as hazardous or reportable under this requirement.

TSCA: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

STATE REGULATIONS: Materials in this product appear on the following state hazardous substance lists: CA, IN, KY, MA, MN, NC, NJ, OR, PA. Check individual state requirements.

As noted previously at Section 11 in connection with the discussion of titanium dioxide, according to the State of California, the following WARNING must be included for this Product: **THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.**

CANADIAN REGULATIONS: This product has been classified according to the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all the information required by the CPR. All chemical substances in this product are included on or exempted from the Canadian Domestic Substance List (DSL). Amorphous silica (CAS No. 7631-86-9) is listed on the WHMIS Ingredient Disclosure List at a concentration threshold of 1%. Titanium dioxide (CAS No. 1344-28-1) is listed at a concentration threshold of 0.1%. Titanium Dioxide is a Class D, Division 2, Subdivision A controlled product under WHMIS and is considered a possible cancer hazard by inhalation.

16. OTHER INFORMATION

NFPA HAZARD CLASSIFICATION

Health	1
Flammability	0
Reactivity	0
Other	N/A

HMIS HAZARD CLASSIFICATION

Health	1
Flammability	0
Reactivity	0
Protection	Please refer to Section 8.

Section 11 Titanium Dioxide Epidemiological References: 1) Fryzek JP, et. al. [2003]. A cohort study among titanium dioxide manufacturing workers in the United States. J Occup Environ Med 45:400-409. 2) Boffeta et. al. [2004]. Mortality among workers in the titanium dioxide production industry in Europe. Cancer Causes Control 15:697-706. 3) Carbon Black, titanium dioxide, and talc/ IARC Working Group on the Evaluation of Carcinogenic Risks to Humans(2006: Lyon, France). 4) Current Intelligence Bulletin 63, Occupational Exposure to Titanium Dioxide, Center for Disease Control and Prevention, National Institute of Occupational Safety and Health, 2011.

Synthetic Amorphous Silica Toxicity Information Reference: United Nations Environmental Programme (UNEP), Organization for Economic Cooperation & Development (OECD) Screening Information Data Set (SIDS) Initial Assessment Report, Synthetic Amorphous Silica, July 23, 2004.

Revision Summary: Added California requirements and additional details in the discussion on IARC and NIOSH documents in Section 11.

DISCLAIMER: The information herein is presented in good faith and believed to be accurate as the effective data given. However, no warranty, expressed or implied, is given. Users are urged to refer to the primary documents referenced herein and evaluate them for their relevance to user's actual use of the product. It is the user's responsibility to ensure that its activities comply with applicable Federal, National, State, Provincial, and local laws.

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Product Name: Pyrogel® XTF

Synonyms: Silica aerogel materials

Use of the Substance/Preparation: High performance insulation material

Manufacturer: Aspen Aerogels, Inc.

Address: 30 Forbes Road
Northborough, MA 01532

Telephone: (508) 691-1111

Emergency Telephone Number: 800-535-5053 US & Canada (INFOTRAC)
352-323-3500 International

MSDS Prepared by: EHS

Phone Number of Preparer: 508-691-1111

2. HAZARDS IDENTIFICATION

Classification: Product is not classified as a dangerous material or preparation as defined in EC Directives 67/548/EEC or 1999/45/EC. See Section 11 for a full discussion of titanium dioxide.

Appearance and Odor: Grey fabric material with no characteristic odor. Under certain conditions, product may have faint ammonia-like odor.

Emergency Overview: Inhalation of excessive amounts of dust from the product may cause mechanical irritation to the respiratory tract. Dermal contact may cause mechanical irritation.

POTENTIAL HEALTH EFFECTS

Inhalation: Inhalation of airborne dusts may cause mechanical irritation of the upper respiratory tract.

Eye Contact: Exposure to dust from this product can produce a drying sensation and mechanical irritation of the eyes.

Skin Contact: Skin contact with dust from this product can produce a drying sensation and mechanical irritation of the skin and mucous membranes.

Skin Absorption: Material will not absorb through skin.

Ingestion: This material is not intended to be ingested (eaten). If ingested in large quantity, the material may produce mechanical irritation and blockage

Acute Health Hazards: Dust from this product is a physical irritant, and may cause temporary irritation or scratchiness of the throat and / or itching and redness of the eyes and skin.

Chronic Health Hazards: In 2010 (based on a 2006, Working Group meeting), the International Agency for Research on Cancer (IARC) reclassified titanium dioxide as "possibly carcinogenic to humans" (Group 2B) based on a finding of carcinogenicity in experimental animals. In the draft Titanium Dioxide Monograph (Vol. 93), IARC concluded that there is inadequate evidence in humans for the human carcinogenic studies "do not suggest an association between occupational exposure as it occurred in recent decades in western Europe and North America and risk of cancer." See carcinogenicity of titanium dioxide. However, see Section 11 for a full discussion.

Medical Conditions Aggravated by Exposure: Excessive inhalation of dust may aggravate pre-existing chronic lung conditions including, but not limited to, bronchitis, emphysema, and asthma. Dermal contact may aggravate existing dermatitis.

CARCINOGENICITY

Component	ACGIH	NTP	IARC
Titanium Dioxide	A4	Not Listed	2B
Fibrous Glass (textile grade)	A4	Not Listed	3
Aluminum Trihydrate	Not Listed	Not Listed	None
Amorphous Silica	NA	Not Listed	None

SECTION 2 NOTES: This product is composed of synthetic amorphous silica dioxide, often referred to as silica gel or amorphous precipitated silica. Amorphous silica should not to be confused with crystalline silica. Epidemiological studies indicate low potential for adverse health effects from exposure to amorphous silica. See Section 11 for a full discussion of titanium dioxide.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percent	EINECS Number	EU Classification
Methylsilylated Silica	68909-20-6	40-55	272-697-1	None
Synthetic vitreous fibers	NA	40-50	Not Assigned	None
Titanium Dioxide	1317-80-2	4-6	236-675-5	None
Aluminum Trihydrate	21645-51-2	0-5	244-492-7	None
Magnesium Hydroxide	1309-42-8	0-5	215-170-3	None
Proprietary Pigment ^a	NA	<1	NA	None

^aProduct contains <1% of a proprietary pigment whose elemental components include iron and manganese.

4. FIRST AID MEASURES

- Eye Contact:** Immediately wash with large amounts of water for at least 15 minutes, occasionally lifting lids. If irritation occurs and persists, get medical treatment.
- Skin Contact:** Wash skin thoroughly with soap and water until clean. The soap will act as a surfactant to remove the material. Remove contaminated clothing and shoes. Wash clothing before reuse. Obtain medical attention if symptoms occur.
- Ingestion:** Material will pass through the body normally. Obtain medical attention if symptoms occur.
- Inhalation:** Remove to fresh air. Drink water to clear throat and blow nose to remove dust. Obtain medical attention if ill effects persist.

5. FIRE-FIGHTING MEASURES
5.1 FLAMMABILITY PROPERTIES

Flammable	No
Auto ignition Temperature	Not Applicable
Flash Point	Not Applicable
Flammability Limits: (Lower Explosive Limit)	Not Applicable
Flammability Limits: (Upper Explosive Limit)	Not Applicable
Explosion Data – Sensitivity to impact	Not sensitive
Explosion Data – Sensitivity to static discharge	Not sensitive

5.2 EXTINGUISHING MEDIA:

Use media suitable for surrounding fire and that are appropriate to the surrounding environment; normal fog nozzle water application and/or exclusion of air is typically suitable for extinguishing this product in blanket form.

5.3 PROTECTION FOR FIRE FIGHTERS

Special Fire Fighting Procedures: Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases produced by a fire.

Unusual Fire and Explosion Hazards: Product is a super-insulation material. Rolls of material can retain heat within internal layers and re-ignite combustible materials if heat is not removed.

Hazardous Decomposition and/or Combustion Products: Primary combustion products are carbon monoxide and carbon dioxide. Other undetermined products could be released in small quantities.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Minimize dust generation. Ensure adequate ventilation. Use personal protective equipment as necessary.

Environmental Precautions: Material is not soluble. Do not flush into surface water or sanitary sewer system.

Methods for Cleaning Up: Contain and collect released material for proper disposal. Dry vacuuming is the preferred method of cleaning up.

7. HANDLING AND STORAGE

Handling Aerogel blankets will generate dust when handled. Workplace exposure to all dusts should be controlled with standard industrial hygiene practices. Dry vacuuming is the preferred method for cleaning up dust. Because aerogel dust is hydrophobic, water is not effective as a dust control agent.

Storage Aerogel blankets should be kept in their packaging until they are ready to be used. Unpack the material in the work area. This will help to minimize the area where dust exposure may occur. Trimmed material and scrap should be promptly packed in disposal bags.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure Limit Values

There are no exposure limits identified for the main product component, classified as synthetic amorphous silica. Exposure limits for synthetic amorphous silica are based on silica (CAS No. 7631-86-9).

CAS Number	Component Name	Exposure Limits	
7631-86-9	Silica, Amorphous	Germany TRGS 900	4 mg/m ³ (inhalable fraction)
		UK WEL	6 mg/m ³ (total inhalable fraction)
			2.4 mg/m ³ (respirable fraction)
		US OSHA PEL (TWA) ^a :	15 mg/m ³ (total dust)
		US ACGIH ^b	5 mg/m ³ (respirable fraction)
1317-80-2	Titanium Dioxide		10 mg/m ³ (inhalable)
			3 mg/m ³ (respirable)
		Germany TRGS 900	1.5 mg/m ³ (respirable dust)
		UK WEL	10 mg/m ³ (total inhalable fraction)
			4 mg/m ³ (respirable fraction)
21645-51-2	Aluminum Trihydrate	US OSHA PEL (TWA):	10 mg/m ³ (total dust)
			5 mg/m ³ (respirable fraction)
		US ACGIH:	10 mg/m ³ (total dust)
		US OSHA PEL (TWA) ^a :	15 mg/m ³ (total dust)
		US ACGIH ^b	5 mg/m ³ (respirable fraction)
NA	Continuous filament glass fibers		10 mg/m ³ (inhalable)
			3 mg/m ³ (respirable)
		US ACGIH	1.0 fibers/cc ^c
			5 mg/m ³ (inhalable)

US OSHA

10 mg/m³ (total dust)

5 mg/m³ (respirable fraction)

^a The US OSHA standard for amorphous silica is: (80 mg/m³)/(%SiO₂). The NIOSH Sampling Method 7501 for Amorphous Silica calculates the %SiO₂ based on the percentage of crystalline silica in the sample. Because the percentage of crystalline silica in aerogel is 0%, the particulate limit applies.

^b US ACGIH based on Particles Not Otherwise Specified (PNOS)

^c Respirable fibers: length >5 µm; aspect ratio ≥3:1, as determined by the membrane filter method at 400–450X magnification (4-mm objective), using phase-contrast illumination. US NIOSH length µm, width <3 µm diameter and length:width ratios ≥3.

¹ See Section 11 for a discussion of alternative recommended exposure levels for this component.

8.2 Exposure Control

Ventilation:	Local exhaust in accordance with general industrial hygiene practices is recommended to control dust.
Respiratory Protection:	A properly fitted, NIOSH or CE approved respirator should be worn when ventilation is unavailable or inadequate to maintain airborne concentrations below applicable occupational exposure limits. A respiratory protection program that meets applicable local regulations should be implemented whenever workplace conditions warrant use of a respirator.
Hand Protection	Silica aerogels are hydrophobic (repel water) and may cause drying and irritation of the skin, eyes, and mucous membranes. For this reason, nitrile, latex, or other impermeable gloves should be worn when handling aerogel blankets.
Eye Protection:	Safety glasses. Chemical goggles could be worn to provide greater protection from dust.
Skin Protection:	Long-sleeved, long-legged work clothes are also advised. Disposable coveralls should be considered to minimize skin exposure and track out of aerogel dusts into adjacent areas.
Work Hygienic Practices	Keep materials packaged until just prior to use. Die cut in preference to rotary or other cutting methods. Dry vacuum with proper filtration preferred to sweeping. Wash thoroughly after using the product. Wash clothing if dust conditions present. Wash hands before eating or drinking.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Grey fabric blanket; material is hydrophobic (repels water)
Odor:	No characteristic odor. Under certain conditions, such as high storage temperatures, product may have faint ammonia-like odor.
Odor Threshold	Reported ammonia threshold vary widely: 0.6 to 53 ppm
pH:	Not applicable.
Specific Gravity:	Not applicable
Boiling Point/Range:	Not applicable.
Freezing Point	Not applicable
Flash Point:	Not applicable.
Flammability (solid, gas):	Not applicable.
Explosive Properties:	Not applicable.
Oxidizing Properties:	Not applicable.
Vapor Pressure:	Not applicable.
Vapor Density (air = 1)	Not applicable
Solubility:	Insoluble.
Viscosity:	Not applicable.
Evaporation Rate:	Not applicable
Coefficient of water/oil distribution	Not applicable

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable
Conditions to Avoid:	Prolonged exposure to temperatures above the recommended use temperature as noted in technical data sheet. Avoid conditions that produce large quantities of dust dispersed in air.
Materials to Avoid:	Avoid strong acids and bases.
Hazardous Decomposition Products	Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products, including carbon monoxide and other productions of combustion, may occur as a result of oxidation, heating or reaction with another material.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Dust may cause mechanical irritation and dryness to eyes and skin.

Synthetic Amorphous Silica

Oral LD50:	>5,000 mg/kg
Inhalation LC50:	>2,000 mg/m ³
Dermal LD50:	>3,000 mg/kg
Eye Irritation:	Synthetic amorphous silica and silicates are not irritating to skin and eyes under experimental conditions, but may produce dryness following prolonged and repeated exposure.
Skin Irritation:	Synthetic amorphous silica and silicates are not irritating to skin and eyes under experimental conditions, but may produce dryness following prolonged and repeated exposure.

Titanium Dioxide

Oral LD50:	>5,000 mg/kg
Inhalation LC50:	>6,820 mg/m ³ (ALC/4 hour rat)
Dermal LD50:	>10,000 mg/kg (rabbit)
Eye Irritation:	Slight irritation
Skin Irritation:	Slight irritation

Aluminum Trihydrate

Oral LD50:	>5,000 mg/kg (rat)
Eye Irritation:	Slightly irritating
Skin Irritation:	Non-irritating

CHRONIC TOXICITY

Some studies of long term amorphous silica dust exposures indicate a potential for decreased lung function. In surveyed studies, this effect is characterized as compounded by smoking. Additionally, surveyed studies characterize the decreased lung function effect as reversible on discontinuation of exposure. There is no available data for this product on skin sensitization, respiratory sensitization, reproductive toxicity, teratogenicity, embryotoxicity, mutagenicity or synergisticity.

CARCINOGENICITY

In 2010 (based on a 2006 Working Group meeting), the International Agency for Research on Cancer (IARC) reclassified titanium dioxide (TiO₂) to "possibly carcinogenic to humans" (Group 2B). This classification was based on *inadequate evidence* in humans and *sufficient evidence* in experimental animals. In the Titanium Dioxide Monograph (Vol. 93), IARC concluded that the human carcinogenic studies "do not suggest an association between occupational exposure as it occurred in recent decades in western Europe and North America and risk of

cancer.”(See page 273 of the Monograph) The IARC classification of TiO₂ in Group 2B was based on available information discussed in the Monograph, primarily in animals (rodents)..

The recent IARC classification for TiO₂ was based on *inadequate evidence* in humans and *sufficient evidence* in experimental animals. IARC considers there to be *inadequate evidence of carcinogenicity* when the available studies are of “insufficient quality, consistency or statistical power to permit a conclusion” or “no data on cancer in humans are available”. IARC considers there to be *sufficient evidence of carcinogenicity* in experimental animals when two or more independent studies in one species carried out at different times or in different laboratories or under different protocols” show evidence of carcinogenicity. The Group 2B for TiO₂ classification was based on three animal studies and four human studies. In the Titanium Dioxide Monograph (Vol. 93), IARC concluded that the human carcinogenic studies “do not suggest an association between occupational exposure as it occurred in recent decades in western Europe and North America and risk of cancer.”

US OSHA currently does not regulate titanium dioxide as a carcinogen (ref: OSHA Letter of Interpretation to North American Refractories Co, 11/19/97). The US National Institute for Occupational Safety & Health (NIOSH) currently recommends that titanium dioxide be considered a potential occupational carcinogen. Previously, NIOSH based its recommendation on a chronic inhalation study of rats exposed to 250 mg/m³ of fine titanium dioxide. More recently, NIOSH has recommended airborne exposure limits for inhaled titanium dioxide at 2.4 mg/m³ for fine TiO₂ and 0.3 mg/m³ for ultrafine (including engineered nanoscale) TiO₂ as TWA concentrations for up to 10 hr/day during a 40-hour work week, using the international definitions of respirable dust [CEN 1993; ISO 1995] and the NIOSH Method 0600 for sampling airborne respirable particles [NIOSH 1998]. See NIOSH Current Intelligence Bulletin No. 63 (2011), which is available at <http://www.cdc.gov/niosh/docs/2011-160/>. NIOSH has indicated that the tumorigenic effects of titanium dioxide do not appear to be chemical-specific or a direct action of the chemical substance itself. Rather, these effects appear to be a function of particle size and surface area acting through a secondary genotoxic mechanism associated with persistent inflammation.

The State of California has included titanium dioxide (as airborne, unbound particles of respirable size) in its List of Chemicals Known to the State to Cause Cancer effective September 2, 2012, under California Environmental Protection Agency's Proposition 65 regulations. See also Section 15 below. The American Conference of Governmental Industrial Hygienists (ACGIH) considers titanium dioxide to be not classifiable as a human carcinogen (A4).

According to the manufacturer, the fiberglass in this product is considered textile grade fibrous glass and it is not classified as a carcinogen by ACGIH, IARC, NTP or OSHA.

The International Agency for Research on Cancer (IARC) considers synthetic amorphous silica to be not classifiable as to its carcinogenicity to humans (Group 3).

NOTE TO SECTION 11: Toxicological information for synthetic amorphous silica is based on literature review.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Synthetic Amorphous Silica	Fish: LC50 > 10,000 mg/L (Brachydanio rerio: 96 hour), Method OECD 203 Daphnia magna: EC50 > 10,000 mg/l (24 hours), Method OECD 202
Titanium Dioxide	Fish: LC50 > 1,000 mg/L (fathead minnow 96 hour)
Aluminum Trihydrate	Fish: LC50 > 10,000 mg/L

Mobility	None expected due to insoluble nature of product.
Persistence and Biodegradability	Not applicable for inorganic material.
Bioaccumulative Potential	None expected due to insoluble nature of product.
Other Adverse Effects	None expected.

NOTE TO SECTION 12: Ecological information is based on literature review for synthetic amorphous silica (CAS No. 7631-86-9). Information on aluminum trihydrate based on manufacturer's information.

13. DISPOSAL CONSIDERATIONS

Dispose in an approved landfill in accordance with federal, state / provincial, and local regulation. Cover promptly to avoid blowing of dust. This product is not regulated as a hazardous waste under US RCRA regulations.

14. TRANSPORT INFORMATION

Shipping Name:	Not regulated for transport
Hazard Class	None
UN Number	None
Packing Group	None
Required Label(s)	None
Marine Pollutant	No
Additional Information	None

15. REGULATORY INFORMATION

EU REGULATORY INFORMATION

Product is not classified as a dangerous material or preparation as defined in EC Directives 67/548/EEC or 1999/45/EC. Aerogel insulation blankets are considered an article, not a substance or preparation, under the REACH directive.

U.S. FEDERAL REGULATIONS

CERCLA (Comprehensive Response Compensation and Liability Act): Product is not classified as hazardous or reportable under this requirement.

SARA TITLE III (Superfund Amendments and Reauthorization Act): Product is not classified as hazardous or reportable under this requirement.

311/312 HAZARD CATEGORIES: Materials in this product are classified as hazardous or reportable under this requirement.

313 REPORTABLE INGREDIENTS: Materials in this product are not classified as hazardous or reportable under this requirement.

TSCA: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

STATE REGULATIONS: Materials in this product appear on the following state hazardous substance lists: CA, IN, KY, MA, MN, NC, NJ, OR, PA. Check individual state requirements.

As noted previously at Section 11 in connection with the discussion of titanium dioxide, according to the State of California, the following WARNING must be included for this Product: **THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.**

CANADIAN REGULATIONS: This product has been classified according to the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all the information required by the CPR. All chemical substances in this product are included on or exempted from the Canadian Domestic Substance List (DSL). Amorphous silica (CAS No. 7631-86-9) is listed on the WHMIS Ingredient Disclosure List at a concentration threshold of 1%. Titanium dioxide (CAS No. 1344-28-1) is listed at a concentration threshold of 0.1%. Titanium Dioxide is a Class D, Division 2, Subdivision A controlled product under WHMIS and is considered a possible cancer hazard by inhalation.

16. OTHER INFORMATION

NFPA HAZARD CLASSIFICATION
HMIS HAZARD CLASSIFICATION

Health 1
Flammability 0
Reactivity 0
Other N/A

Health 1
Flammability 0
Reactivity 0
Protection Please refer to Section 8.

Section 11 Titanium Dioxide Epidemiological References: 1) Fryzek JP, et. al. [2003]. A cohort study among titanium dioxide manufacturing workers in the United States. J Occup Environ Med 45:400-409. 2) Boffeta et. al. [2004]. Mortality among workers in the titanium dioxide production industry in Europe. Cancer Causes Control 15:697-706. 3) Carbon Black, titanium dioxide, and talc/ IARC Working Group on the Evaluation of Carcinogenic Risks to Humans(2006: Lyon, France). 4) Current Intelligence Bulletin 63, Occupational Exposure to Titanium Dioxide, Center for Disease Control and Prevention, National Institute of Occupational Safety and Health, 2011.

Synthetic Amorphous Silica Toxicity Information Reference: United Nations Environmental Programme (UNEP), Organization for Economic Cooperation & Development (OECD) Screening Information Data Set (SIDS) Initial Assessment Report, Synthetic Amorphous Silica, July 23, 2004.

Revision Summary: Added California requirements and additional details in the discussion on IARC and NIOSH documents in Section 11.

DISCLAIMER: The information herein is presented in good faith and believed to be accurate as the effective data given. However, no warranty, expressed or implied, is given. Users are urged to refer to the primary documents referenced herein and evaluate them for their relevance to user's actual use of the product. It is the user's responsibility to ensure that its activities comply with applicable Federal, National, State, Provincial, and local laws.



Industrial Insulation Group, LLC

A CalSillite/Johns Manville Joint Venture

MATERIAL SAFETY DATA SHEET

Thermo-12® Gold Calcium Silicate Insulation

For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident,
CALL INFOTRAC – Day or Night 1-800-535-5053
Outside the United States call collect 1-352-323-3500

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Names: Thermo-12® Gold Calcium Silicate Insulation
MPT Calcium Silicate Mitered Fittings
Company ID: Industrial Insulation Group, LLC
2100 Line Street
Brunswick, GA 31520
Phone: USA Emergency Phone Number:
INFOTRAC (24-hr/7 days): 1-800-535-5053
Outside the United States call collect +1-352-323-3500
For Medical Emergency - Call 1-800-535-5053
Date: 2 Nov 2011 Supersedes: 7 Nov 2008
MSDS ID: 20501 Revision 1.0.7

2. COMPOSITION INFORMATION ON INGREDIENTS

Component	CAS #	EINECS #	OSHA PEL/ TWA (mg/m ³)	ACGIH TLV/ TWA (mg/m ³)	%
Synthetic calcium silicate	1344-95-2	215-710-8	15	10	> 86
Sodium silicate	1344-09-8	239-981-7	15	10	0-6
Cellulose fiber	9004-34-6	232-674-9	15	10	0-4
Synthetic cellulose fiber	61788-77-0	270-493-7	15	10	0-4
Iron-Based Color	51274-00-1	215-176-6	15	10	0-1

See Section 8 for Personal Protection (PPE).

3. HAZARDS IDENTIFICATION



Irritant

Emergency Overview:

Appearance: Yellow semi-circle or block insulation with coloring throughout to show that product is asbestos free.

Odor: Odorless.

Warning Statements: This product presents no unusual hazards during normal use. However, cutting, sawing or abrading may increase personal exposure from particulates. Prolonged exposure may cause dermatitis. Eye irritation may be possible from extended exposure.

Potential Adverse Health Effects:

Eye Contact: Temporary irritation, itching or redness. If irritation persists, seek medical attention.

Skin Contact: Temporary irritation, itching or redness. If irritation persists, seek medical attention.

Ingestion: The product is not designed to be ingested, may cause irritation to gastrointestinal tract.

Inhalation: Particles if inhaled may cause irritation to nasal and respiratory passages. Remove to fresh air. If breathing difficult, seek medical attention immediately.

This product may contain trace amounts of crystalline silica (quartz) as a natural contaminate in the raw materials. However, standard industrial monitoring surveys conducted under normal and test (worst-case) situations have not detected any reportable crystalline silica in the respirable dust in the occupational environment.



Industrial Insulation Group, LLC

A Calafillo/Johns Manville Joint Venture

MATERIAL SAFETY DATA SHEET Thermo-12® Gold Calcium Silicate Insulation

4. FIRST AID MEASURES

If in Eyes: PROMPTLY flush with large amounts of water for at least 15 minutes, remove contact lenses if worn. Avoid scratching eyes. Flush continually lifting the lower and upper lids. See a physician if irritation persists.

If on Skin: Immediately flush skin with plenty of water. Seek medical attention if irritation persists.

If Swallowed: DO NOT attempt to induce vomiting. Have the individual rinse mouth with water thoroughly. NEVER give anything to an unconscious person. No chronic effects expected.

If Inhaled: Remove to fresh air. Rinse areas with water to remove dust particles.

5. FIRE FIGHTING MEASURES

Flash Point: Not flammable

Extinguishing Media: Use appropriate medium for surrounding fire such as carbon dioxide, dry chemical, powder or foam.

Special Fire Fighting Procedures: Provide for the protection of the employees and residents. No special procedures are expected to be necessary for this product. Normal fire-fighting procedures should be followed to avoid inhalation of smoke and gasses produced by other materials.

6. ACCIDENTAL RELEASE MEASURES

In Cases of Spillage:

Pick up large pieces. Vacuum dust. If sweeping is necessary, use a dust suppressant such as water. Do not dry sweep dust accumulation or use compressed air for clean-up. These procedures will help to minimize potential exposures.

Clean-Up Procedures: For small or large releases, comply with state and local regulations for disposal of this product.

7. HANDLING AND STORAGE

Material should be kept dry and protected from the elements. Use good housekeeping to keep down accumulation of dust particles. Keep away from children, food, feed and domestic animals. Prevent eating, drinking, tobacco usage, and cosmetic application in areas where there is a potential for exposure to the material. Always wash your hands thoroughly after handling.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye Protection: Safety glasses with side shields.

Skin Contact: Wear leather or cotton gloves and long sleeves. Follow the manufacturer's instructions for cleaning the PPE.

Respiratory Protection: Wear a vapor/particulate respirator (NIOSH/MSHA N95) or equivalent. OSHA requires medical qualification to wear a respirator and proper fit testing documentation. Exposure to dust concentrations above the PEL, may require more respiratory protection.

Ventilation Protection: Provide proper mechanical ventilation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Yellow semi-circle or block insulation with coloring throughout to show that product is asbestos free.

Odor: Odorless.

Solubility: Nil



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: FROTH-PAK™ 620BF HFC CLASS A POLYOL
Spray Polyurethane Foam

Issue Date: 04/24/2015

Print Date: 06/19/2015

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: FROTH-PAK™ 620BF HFC CLASS A POLYOL Spray Polyurethane Foam

Recommended use of the chemical and restrictions on use
Identified uses: Polyurethane foam.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY
2030 WILLARD H DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 800-424-9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Reproductive toxicity - Category 2

Specific target organ toxicity - repeated exposure - Category 2 - Oral

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

Suspected of damaging fertility or the unborn child.

May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary statements

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Use personal protective equipment as required.

Response

IF exposed or concerned: Get medical advice/ attention.

Storage

Store locked up.

Disposal

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Sucrose , propylene oxide	9049-71-2	> 10.0 - < 30.0 %
1,4-Benzenedicarboxylic Acid, Dimethyl Ester, manuf. of, by-products from, Polymers with Diethylene Glycol	70749-97-2	> 10.0 - < 30.0 %
1,1,1,2-Tetrafluoroethane	811-97-2	> 10.0 - < 30.0 %
1,1,1,3,3 - Pentafluoropropane	460-73-1	> 1.0 - < 30.0 %
Tris(1-chloro-2-propyl) phosphate	13674-84-5	> 10.0 - < 30.0 %
Triethyl phosphate	78-40-0	> 1.0 - < 5.0 %
2-Ethylhexanoic acid potassium salt	3164-85-0	> 1.0 - < 5.0 %
Diethylene glycol	111-46-6	> 1.0 - < 5.0 %

4. FIRST AID MEASURES

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

Ingestion: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional Important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. Due to structural analogy and clinical data, this material may have a mechanism of intoxication similar to ethylene glycol. On that basis, treatment similar to ethylene glycol intoxication may be of benefit. In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. This material is a cholinesterase inhibitor. Treat symptomatically. In case of severe acute poisoning, use antidote immediately after establishing an open airway and respiration. Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early; however, use only in conjunction with atropine. Attempt seizure control with diazepam 5-10 mg (adults) intravenous over 2-3 minutes. Repeat every 5-10 minutes as needed. Monitor for hypotension, respiratory depression, and need for

intubation. Consider second agent if seizures persist after 30 mg. If seizures persist or recur administer phenobarbital 600-1200 mg (adults) intravenous diluted in 60 ml 0.9% saline given at 25-50 mg/minute. Evaluate for hypoxia, dysrhythmia, electrolyte disturbance, hypoglycemia (treat adults with dextrose 100 mg intravenous). If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen halides.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Blowing agent vaporizes quickly at room temperature. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Spilled material may cause a slipping hazard. Ventilate

area of leak or spill. Confined space entry procedures must be followed before entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Absorb with materials such as: Dirt. Sand. Sawdust. Collect in suitable and properly labeled containers. Wash the spill site with water. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with eyes. Avoid breathing vapor. Do not enter confined spaces unless adequately ventilated. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. This material is hygroscopic in nature. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Conditions for safe storage: Minimize sources of ignition, such as static build-up, heat, spark or flame. Blowing agent may migrate from product and accumulate in some storage situations. Protect from atmospheric moisture. Store in a dry place. Avoid prolonged exposure to heat and air. Avoid temperatures above 50°C (122°F) See Section 10 for more specific information.

Storage stability

Storage temperature:	Storage Period:
24 °C (75 °F)	15 Month

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
1,1,1,2-Tetrafluoroethane	US WEEL	TWA	1,000 ppm
1,1,1,3,3 - Pentafluoropropane	US WEEL	TWA	300 ppm
Triethyl phosphate	US WEEL	TWA	7.45 mg/m3
Diethylene glycol	US WEEL	TWA	10 mg/m3

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Brown
Odor	Sharp
Odor Threshold	No test data available
pH	Not applicable
Melting point/range	Not applicable to liquids
Freezing point	No test data available
Boiling point (760 mmHg)	> 100 °C (> 212 °F) <i>Estimated.</i> (based on major component)
Flash point	closed cup > 100 °C (> 212 °F) <i>Estimated.</i> (based on major component)
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	very low
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.18 <i>Estimated.</i>
Water solubility	Negligible

Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	No test data available
Explosive properties	Not explosive
Oxidizing properties	No
Molecular weight	no data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: no data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Will not occur by itself.

Conditions to avoid: Product can oxidize at elevated temperatures. Elevated temperatures can cause pressure buildup in closed containers due to the release of blowing agents. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials: Avoid contact with oxidizing materials. Avoid contact with: Strong acids. Strong bases. Avoid unintended contact with isocyanates. The reaction of polyols and isocyanates generates heat.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon dioxide. Alcohols. Ethers. Hydrocarbons. Hydrogen halides. Ketones. Polymer fragments.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Signs and symptoms of excessive exposure may include: May cause lacrimation (tears). Salivation. Convulsions. Tremors. Increased activity (hyperactivity).

As product: Single dose oral LD50 has not been determined.

Based on information for component(s):
LD50, Rat, > 2,000 mg/kg Estimated.

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Based on information for component(s):
LD50, Rabbit, > 2,000 mg/kg Estimated.

Acute inhalation toxicity

Prolonged excessive exposure may cause adverse effects. In confined or poorly-ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. May cause respiratory irritation and central nervous system depression. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

As product: The LC50 has not been determined.

Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation

May cause moderate eye irritation.

May cause slight corneal injury.

Sensitization

Based on information for component(s):

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant information found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Contains a component which is reported to be a weak organophosphate-type cholinesterase inhibitor.

Excessive exposure may produce organophosphate type cholinesterase inhibition.

Signs and symptoms of excessive exposure may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination, convulsions.

Contains component(s) which have been reported to cause effects on the following organs in animals:

Liver.

For the minor component(s):

Diethylene glycol.

Contains component(s) which have been reported to cause effects on the following organs in humans:

Gastrointestinal tract.

Kidney.

Carcinogenicity

No relevant data found.

Teratogenicity

Diethylene glycol has caused toxicity to the fetus and some birth defects at maternally toxic, high doses in animals. Other animal studies have not reproduced birth defects even at much higher doses that caused severe maternal toxicity. Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother.

Reproductive toxicity

In animal studies on component(s), effects on reproduction were seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Contains component(s) which were negative in some animal genetic toxicity studies and positive in others.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY:

Sucrose , propylene oxide

Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Vapor from heated material or mist may cause respiratory irritation.

Typical for this family of materials. No deaths occurred following exposure to a saturated atmosphere.

1,4-Benzenedicarboxylic Acid, Dimethyl Ester, manuf. of, by-products from, Polymers with Diethylene Glycol

Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous.

As product: The LC50 has not been determined.

1,1,1,2-Tetrafluoroethane

Acute inhalation toxicity

LC50, Rat, 4 Hour, vapour, > 1,500 mg/l

1,1,1,3,3 - Pentafluoropropane

Acute inhalation toxicity

LC50, Rat, 4 Hour, vapour, 1,096 mg/l

Tris(1-chloro-2-propyl) phosphate

Acute inhalation toxicity

LC50, Rat, 4 Hour, dust/mist, > 7 mg/l

Triethyl phosphate

Acute inhalation toxicity

LC50, Rat, 4 Hour, dust/mist, > 2.35 mg/l No deaths occurred at this concentration.

2-Ethylhexanoic acid potassium salt

Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility; vapor from heated material may cause respiratory irritation. Prolonged excessive exposure to mist may cause adverse effects.

LC50, Rat, 4 Hour, vapour, > 0.14 mg/l No deaths occurred following exposure to a saturated atmosphere.

Diethylene glycol

Acute inhalation toxicity

LC50, Rat, 4 Hour, dust/mist, > 4.6 mg/l The LC50 value is greater than the Maximum Attainable Concentration. No deaths occurred at this concentration.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Toxicity

Sucrose , propylene oxide

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50/EL50/LL50 > 100 mg/L in the most sensitive species tested).
LC50, Danio rerio (zebra fish), static test, 96 Hour, 6,310 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, 9,890 mg/l, OECD Test Guideline 202 or Equivalent

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, mortality, >= 10 mg/l
LOEC, Daphnia magna (Water flea), semi-static test, 21 d, mortality, > 10 mg/l

1,4-Benzenedicarboxylic Acid, Dimethyl Ester, manuf. of, by-products from, Polymers with Diethylene Glycol

Acute toxicity to fish

For similar material(s):
Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50/EL50/LL50 > 100 mg/L in the most sensitive species tested).

1,1,1,2-Tetrafluoroethane

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50/EL50/LL50 > 100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 450 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 48 Hour, 980 mg/l

Toxicity to bacteria

EC50, *Pseudomonas putida*, static test, 6 Hour, Growth inhibition, > 730 mg/l

1,1,1,3,3 - Pentafluoropropane

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), semi-static test, 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants

ErC50, *Selenastrum capricornutum* (green algae), static test, 72 Hour, Growth rate, > 118 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna* (Water flea), semi-static test, 14 d, mortality, 29 mg/l

Tris(1-chloro-2-propyl) phosphate

Acute toxicity to fish

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50, *Lepomis macrochirus* (Bluegill sunfish), static test, 96 Hour, 84 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), 48 Hour, 131 mg/l

Acute toxicity to algae/aquatic plants

ErC50, *Pseudokirchneriella subcapitata* (green algae), static test, 96 Hour, Growth rate inhibition, 82 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, activated sludge, Respiration inhibition, 3 Hour, 784 mg/l, OECD 209 Test

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna* (Water flea), semi-static test, 21 d, number of offspring, 32 mg/l
LOEC, *Daphnia magna* (Water flea), semi-static test, 21 d, number of offspring, > 32 mg/l

Triethyl phosphate

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, *Leuciscus idus* (Golden orfe), static test, 48 Hour, 2,140 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 350 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EC50, *Desmodesmus subspicatus* (green algae), 72 Hour, Growth rate inhibition, 900 mg/l, OECD Test Guideline 201

Toxicity to bacteria

EC50, activated sludge, Respiration inhibition, 30 min, > 2,985 mg/l, OECD 209 Test

2-Ethylhexanoic acid potassium salt

Acute toxicity to fish

Based on information for a similar material:

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

Diethylene glycol

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50/EL50/LL50 > 100 mg/L in the most sensitive species tested).

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 75,200 mg/l,
OECD Test Guideline 203 or Equivalent

Toxicity to bacteria

EC50, activated sludge, 3 Hour, > 1,000 mg/l, OECD 209 Test

Persistence and degradability

Sucrose , propylene oxide

Biodegradability: Based on information for a similar material: Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).

1,4-Benzenedicarboxylic Acid, Dimethyl Ester, manuf. of, by-products from, Polymers with Diethylene Glycol

Biodegradability: No relevant data found.

1,1,1,2-Tetrafluoroethane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

Biodegradation: 4 %

Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 0.47 mg/mg

Photodegradation

Test Type: Half-life (Indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 1,700 d

Method: Estimated.

1,1,1,3,3 - Pentafluoropropane

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

Biodegradation: 8 %

Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 0.60 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 360 d

Method: Estimated.

Tris(1-chloro-2-propyl) phosphate

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

Biodegradation: 14 %

Exposure time: 28 d

Method: OECD Test Guideline 301E or Equivalent

10-day Window: Not applicable

Biodegradation: 95 %

Exposure time: 64 d

Method: OECD Test Guideline 302A or Equivalent

Theoretical Oxygen Demand: 1.17 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 0.24 d

Method: Estimated.

Triethyl phosphate

Biodegradability: Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Not applicable

Biodegradation: > 90 %

Exposure time: 28 d

Method: OECD Test Guideline 302B or Equivalent

Theoretical Oxygen Demand: 1.58 mg/mg

2-Ethylhexanoic acid potassium salt

Biodegradability: Based on information for a similar material: Material is expected to be readily biodegradable. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

Diethylene glycol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Pass

Biodegradation: 90 - 100 %

Exposure time: 20 d

Method: OECD Test Guideline 301A or Equivalent

10-day Window: Not applicable

Biodegradation: 82 - 98 %
Exposure time: 28 d
Method: OECD Test Guideline 302C or Equivalent

Theoretical Oxygen Demand: 1.51 mg/mg Estimated.

Bioaccumulative potential

Bioaccumulation: No data available.

Mobility in soil

Sucrose , propylene oxide

No relevant data found.

1,4-Benzenedicarboxylic Acid, Dimethyl Ester, manuf. of, by-products from, Polymers with Diethylene Glycol

No data available.

1,1,1,2-Tetrafluoroethane

Potential for mobility in soil is high (Koc between 50 and 150).

Partition coefficient(Koc): 97 Estimated.

1,1,1,3,3 - Pentafluoropropane

Potential for mobility in soil is medium (Koc between 150 and 500).

Partition coefficient(Koc): 280 Estimated.

Tris(1-chloro-2-propyl) phosphate

Potential for mobility in soil is slight (Koc between 2000 and 5000).

Partition coefficient(Koc): 1300 Estimated.

Triethyl phosphate

Potential for mobility in soil is very high (Koc between 0 and 50).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient(Koc): 48 Estimated.

2-Ethylhexanoic acid potassium salt

Based on information for a similar material:

Potential for mobility in soil is very high (Koc between 0 and 50).

Diethylene glycol

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): < 1 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and

compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. For additional information, refer to: Handling & Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section 10 Regulatory Information, MSDS Section 15

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Chemical under pressure, n.o.s.(1,1,1,2-Tetrafluoroethane)
UN number	UN 3500
Class	2.2
Packing group	

Classification for SEA transport (IMO-IMDG):

Proper shipping name	CHEMICAL UNDER PRESSURE, N.O.S.(1,1,1,2-Tetrafluoroethane)
UN number	UN 3500
Class	2.2
Packing group	
Marine pollutant	No
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Chemical under pressure, n.o.s.(1,1,1,2-Tetrafluoroethane)
UN number	UN 3500
Class	2.2
Packing group	

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Acute Health Hazard

Chronic Health Hazard

Sudden Release of Pressure Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN

Diethylene glycol	111-46-6

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Revision

Identification Number: 101216078 / A001 / Issue Date: 04/24/2015 / Version: 4.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



Material Safety Data Sheet

The Dow Chemical Company

Product Name: Pipe Insulation Billets Extruded 10 Inch

Issue Date: 01/30/2014

Print Date: 18 Feb 2014

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

Pipe Insulation Billets Extruded 10 Inch

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
United States

Customer Information Number:

800-258-2436

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

989-636-4400

Local Emergency Contact:

989-636-4400

2. Hazards Identification

Emergency Overview

Color: Blue

Physical State: Billet

Odor: Odorless

Hazards of product:

Toxic fumes may be released in fire situations.

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: Solid or dust may cause irritation due to mechanical action. Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

Skin Contact: Mechanical injury only. Essentially nonirritating to skin.

Skin Absorption: Skin absorption is unlikely due to physical properties.

Inhalation: Dust may cause irritation to upper respiratory tract (nose and throat). Fumes/vapors released during thermal operations such as hot wire cutting may cause respiratory irritation.

Ingestion: Swallowing is unlikely because of the physical state. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.

3. Composition Information

Component	CAS #	Amount
2-Propenenitrile, polymer with ethenylbenzene	9003-54-7	> 60.0 - < 100.0 %
Styrene, polymers	9003-53-6	>= 0.0 - < 10.0 %
1,1,1,2-Tetrafluoroethane	811-97-2	>= 1.0 - <= 10.0 %
1,1-Difluoroethane	75-37-6	>= 0.0 - <= 10.0 %

Extruded styrenic polymer foam containing a halogenated flame retardant system.

4. First-aid measures

Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin Contact: Wash skin with plenty of water.

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. May cause injury due to mechanical action.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of immediate medical attention and special treatment needed

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. In smoldering or flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Combustion products may include and are not limited to: Hydrogen halides. Based on combustion toxicity testing, the effects of combustion from this foam are not more acutely toxic than the effects of combustion from common building materials such as wood.

Unusual Fire and Explosion Hazards: Container may vent and/or rupture due to fire. When product is stored in closed containers, a flammable atmosphere can develop. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product contains a flame retardant to inhibit accidental ignition from small fire sources. This plastic foam product is combustible and should be protected from flames and other high heat sources. For more information, contact Dow. Dense smoke is produced when product burns.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct water stream. Use fine water spray or foam. Cool surroundings with water to localize fire zone.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: There are no special required instructions.

Environmental precautions: There are no special required instructions.

Methods and materials for containment and cleaning up: Recover spilled material if possible. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Provide adequate ventilation to assure localized concentrations in release areas are maintained below the lower flammable limit. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product is combustible and may constitute a fire hazard if improperly used or installed. When installed, this product should be adequately protected as directed by national building regulations or instructions in the specific application brochure. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. When large quantities of this product are stored or fabricated, blowing agents may be released. Released blowing agents may thermally decompose to form gases which may accelerate corrosion or rust formation of heaters, boilers, gas fired recirculating air furnaces or heaters, or gas water heaters. Flammable vapors may accumulate in some storage situations. In order to prevent buildup of combustible vapors, do not store large quantities of this product in unventilated spaces. Transport bulk shipments of this product in ventilated vehicles. During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
1,1,1,2-Tetrafluoroethane	AIHA WEEL	TWA	4,240 mg/m ³ 1,000 ppm
1,1-Difluoroethane	AIHA WEEL	TWA	2,700 mg/m ³ 1,000 ppm

Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

Personal Protection

Eye/Face Protection: Eye protection should not be necessary. For fabrication operations safety glasses (with side shields) are recommended. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin Protection: No precautions other than clean body-covering clothing should be needed.

Hand protection: Use gloves to protect from mechanical injury. Selection of gloves will depend on the task.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. When respiratory protection is required for certain operations, including but not limited to saw, router or hot-wire cutting, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Particulate filter.

Ingestion: No precautions necessary due to the physical properties of the material.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Appearance	
Physical State	Billet
Color	Blue
Odor	Odorless
Odor Threshold	No test data available
pH	Not applicable
Melting Point	100 - 115 °C (212 - 239 °F) <i>Estimated.</i>
Freezing Point	Not applicable
Boiling Point (760 mmHg)	Not applicable.
Flash Point - Closed Cup	Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	No
Flammable Limits In Air	Lower: Not applicable Upper: Not applicable
Vapor Pressure	Not applicable
Vapor Density (air = 1)	Not applicable
Specific Gravity (H ₂ O = 1)	0.02 - 0.06 <i>Estimated.</i>
Solubility in water (by weight)	not soluble
Autoignition Temperature	450 °C (842 °F) <i>ASTM D1929</i>
Decomposition Temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	No
Oxidizing properties	No
Molecular Weight	No test data available

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Thermally stable at typical use temperatures.

Possibility of hazardous reactions

Polymerization will not occur.

Conditions to Avoid: Avoid temperatures above 300 °C (572 °F). Exposure to elevated temperatures can cause product to decompose. Avoid direct sunlight.

Incompatible Materials: Avoid contact with oxidizing materials. Avoid contact with: Aldehydes. Amines. Esters. Liquid fuels. Organic solvents.

Hazardous decomposition products

Does not normally decompose. Evolution of small amounts of hydrogen halides occur when heated over 250 °C (482 °F). Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aromatic compounds. Aldehydes. Hydrogen halides. Polymer fragments. Toxic flammable gases can be released during decomposition. Under high heat, non-flaming conditions, small amounts of aromatic hydrocarbons such as styrene and ethylbenzene are generated.

11. Toxicological Information

Acute Toxicity

Inhalation

As product: The LC50 has not been determined.

Eye damage/eye irritation

Solid or dust may cause irritation due to mechanical action. Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

Skin corrosion/irritation

Mechanical injury only. Essentially nonirritating to skin.

Sensitization

Skin

Relevant data not available.

Respiratory

Relevant data not available.

Repeated Dose Toxicity

Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

Chronic Toxicity and Carcinogenicity

Relevant data not available.

Developmental Toxicity

Contains a component(s) that is/are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

Reproductive Toxicity

Contains a component(s) that is/are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

Genetic Toxicology

Relevant data not available.

12. Ecological Information

Toxicity

Not expected to be acutely toxic to aquatic organisms.

Persistence and Degradability

Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

Bioaccumulative potential

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Mobility in soil

Mobility in soil: In the terrestrial environment, material is expected to remain in the soil., In the aquatic environment, material is expected to float.

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Landfill. Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information**OSHA Hazard Communication Standard**

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No

Sudden Release of Pressure Hazard

No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information**Recommended Uses and Restrictions****Identified uses**

For industrial use. Thermal insulation. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

Revision

Identification Number: 1007861 / 1001 / Issue Date 01/30/2014 / Version: 7.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with

all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



**Insulation
Systems**

Material Safety Data Sheet

ITW Insulation Systems

ITW Insulation Systems encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

TRYMER™ 2000 XP Rigid Polyisocyanurate Insulation

COMPANY IDENTIFICATION

ITW Insulation Systems
1370 East 40th Street
Building 7, Suite 1
Houston, TX 77022-4101
USA

Contact Information Number:

1-800-231-1024

2. Hazards Identification

Emergency Overview

Color: Natural/light Brown

Physical State: Bun/billet

Odor: Odorless

Hazards of product:

Toxic fumes may be released in fire situations.

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: Solid or dust may cause irritation or corneal injury due to mechanical action.

Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

Skin Contact: Essentially nonirritating to skin. Mechanical injury only.

Skin Absorption: Skin absorption is unlikely due to physical properties.

*Indicates a Trademark

Inhalation: Dust may cause irritation to upper respiratory tract (nose and throat). Fumes or dusts generated from cutting or grinding operations may cause irritation of the upper respiratory tract and lungs. Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines. **Ingestion:** Swallowing is unlikely because of the physical state. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. May cause choking or blockage of the digestive tract if swallowed.

3. Composition Information

Component	CAS #	Amount
Modified Polyisocyanurate Rigid Cellular Polymer	Not applicable	> 90.0 %
Hydrocarbon blowing agent(s)	Not applicable	< 10.0 %
Tris(1-chloro-2-propyl) phosphate	13674-84-5	< 5.0 %

4. First-aid measures

Eye Contact: Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact: Seek first aid or medical attention as needed.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: If swallowed, seek medical attention. May cause gastrointestinal blockage. Do not give laxatives. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. Dense smoke is emitted when burned without sufficient oxygen.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. In smoldering or flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Combustion products may include and are not limited to: Nitrogen oxides. Combustion products may include trace amounts of: Hydrogen cyanide. Aromatic hydrocarbons.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Recover spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: This material is combustible and should not be exposed to flame or other ignition sources. Refer to "EXPOSURE CONTROLS AND PERSONAL PROTECTION", Section 8 of the (M)SDS. No smoking, open flames or sources of ignition in handling and storage area. Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Provide adequate ventilation to assure localized concentrations in release areas are maintained below the lower flammable limit.

Other Precautions: Good housekeeping and controlling of dusts are necessary for safe handling of product.

Storage

Keep in a cool, well-ventilated place. Minimize sources of ignition, such as static build-up, heat, spark or flame. Flammable vapors may accumulate in some storage situations. During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Cyclopentane (8CI, 9CI)	ACGIH	TWA	600 ppm
Isopentane	ACGIH	TWA	600 ppm

Personal Protection

Eye/Face Protection: Eye protection should not be necessary. For fabrication operations safety glasses are recommended. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin Protection: No precautions other than clean body-covering clothing should be needed.

Hand protection: Use gloves to protect from mechanical injury. Selection of gloves will depend on the task.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Particulate filter.

Ingestion: No precautions necessary due to the physical properties of the material.

Engineering Controls Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. Physical and Chemical Properties

Physical State	Bun/billet
Color	Light Brown
Odor	Odorless
Flash Point - Closed Cup	Not applicable
Flammable Limits In Air	Lower: Not applicable Upper: Not applicable

Autoignition Temperature	490 °C (914 °F) ASTM D1929
Vapor Pressure	Not applicable
Boiling Point (760 mmHg)	Not applicable.
Vapor Density (air = 1)	Not applicable
Specific Gravity (H2O = 1)	0.02 - 0.05 <i>Estimated</i>
Freezing Point	Not applicable
Melting Point	Not applicable
Solubility in Water (by weight)	insoluble in water
pH	Not applicable
Kinematic Viscosity	Not applicable

10. Stability and Reactivity

Stability/Instability

Thermally stable at typical use temperatures.

Conditions to Avoid: Avoid temperatures above 260°C (500°F) Exposure to elevated temperatures can cause product to decompose. Avoid static discharge.

Incompatible Materials: Avoid contact with oxidizing materials.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. Toxicological Information

Repeated Dose Toxicity

Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning

No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material is expected to float.

Persistence and Degradability

Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

ECOTOXICITY

Not expected to be acutely toxic to aquatic organisms.

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. ITW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Landfill, Incinerator or other thermal destruction device. As a service to its customers, ITW can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone ITW's Customer Information Group at 1-800-231-1024 for further details.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Hydrocarbon blowing agent(s)	Not applicable	<= 10.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Recommended Uses and Restrictions

Thermal insulation. For industrial use. ITW recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with ITW's stated use, please contact ITW's Customer Information Group.

Revision

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
ITW IHG	ITW Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ DES	Hazard Designation

ITW Insulation Systems urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations.

It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



Material Safety Data Sheet

ITW Insulation Systems

ITW Insulation Systems encourages and expects you to read and understand the entire MSDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

TRYMER™ 6000 Rigid Polyisocyanurate Insulation

COMPANY IDENTIFICATION

ITW Insulation Systems
1370 East 40th Street
Building 7, Suite 1
Houston, TX 77022-4101
USA

Contact Information Number:

1-800-231-1024

2. Hazards Identification

Emergency Overview

Color: Tan

Physical State: Bun/billet

Odor: Odorless

Hazards of product:

Toxic fumes may be released in fire situations

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: Solid or dust may cause irritation or corneal injury due to mechanical action.

Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

Skin Contact: Essentially non-irritating to skin. Mechanical injury only.

Skin Absorption: Skin absorption is unlikely due to physical properties.

Inhalation: Dust may cause irritation to upper respiratory tract (nose and throat). Fumes or dusts generated from cutting or grinding operations may cause irritation of the upper respiratory tract and lungs. Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

Ingestion: Swallowing is unlikely because of the physical state. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. May cause choking or blockage of the digestive tract if swallowed.

3. Composition Information

Component	CAS #	Amount
Modified Polyisocyanurate Rigid Cellular Polymer	Not applicable	> 85.0 %
Hydrocarbon blowing agent(s)	Not applicable	< 10.0 %
Tris(1-chloro-2-propyl) phosphate	13674-84-5	< 5.0 %

4. First-aid measures

Eye Contact: Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact: Seek first aid or medical attention as needed.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: If swallowed, seek medical attention. May cause gastrointestinal blockage. Do not give laxatives. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires.

Special Protective Equipment for Fire Fighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: When product is stored in closed containers, a flammable atmosphere can develop. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. Rapid bursting of a multitude of cells such as might occur during compaction of product waste for disposal will release a flammable blowing agent which can lead to the development of a flammable atmosphere in inadequately vented equipment. This product contains a flame retardant to inhibit accidental ignition from small fire sources. This plastic foam product is combustible and should be protected from flames and other high heat sources. For more information, contact ITW. Dense smoke is emitted when burned without sufficient oxygen.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. In smoldering or flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Combustion products may include and are not limited to: Nitrogen oxides. Combustion products may include trace amounts of: Hydrogen cyanide. Hydrogen halides.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Recover spilled material if possible. Collect in suitable and properly labelled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 13, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: This material is combustible and should not be exposed to flame or other ignition sources. Refer to "EXPOSURE CONTROLS AND PERSONAL PROTECTION", Section 8 of the MSDS. No smoking, open flames or sources of ignition in handling and storage area. Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Provide adequate ventilation to assure localized concentrations in release areas are maintained below the lower flammable limit.

Other Precautions: Good housekeeping and controlling of dusts are necessary for safe handling of product.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Flammable vapors may accumulate in some storage situations. During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Cyclopentane (8Cl, 9Cl)	ACGIH	TWA	600 ppm
Isopentane	ACGIH	TWA	600 ppm

Personal Protection

Eye/Face Protection: Eye protection should not be necessary. For fabrication operations safety glasses are recommended. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin Protection: No precautions other than clean body-covering clothing should be needed.

Hand protection: Use gloves to protect from mechanical injury. Selection of gloves will depend on the task.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Particulate filter.

Ingestion: No precautions necessary due to the physical properties of the material.

Engineering Controls Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. Physical and Chemical Properties

Physical State

Color

Bun/billet

Odor

Tan

Flash Point - Closed Cup

Odorless

Flammable Limits In Air

Not applicable

Lower: Not applicable

Upper: Not applicable

Autoignition Temperature

490 °C (914 °F) ASTM D1929

Vapor Pressure

Not applicable

Boiling Point (760 mmHg)

Not applicable.

Vapor Density (air = 1)

Not applicable

Specific Gravity (H2O = 1)

0.05 - 0.10 *Estimated*

Freezing Point

Not applicable

Melting Point	> 150 °C (> 302 °F) <i>Estimated</i> Decomposes
Solubility in Water (by weight)	insoluble in water
pH	Not applicable
Kinematic Viscosity	Not applicable

10. Stability and Reactivity

Stability/Instability

Thermally stable at typical use temperatures.

Conditions to Avoid: Avoid temperatures above 150°C (302°F) Exposure to elevated temperatures can cause product to decompose. Avoid static discharge.

Incompatible Materials: Avoid contact with oxidizing materials.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. Toxicological Information

Repeated Dose Toxicity

Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning

No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material is expected to float.

Persistence and Degradability

Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

ECOTOXICITY

Not expected to be acutely toxic to aquatic organisms.

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. ITW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Landfill, Incinerator or other thermal destruction device. As a service to its customers, ITW can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone ITW's Customer Information Group at 1-800-231-1024 for further details.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Hydrocarbon blowing agent(s)	Not applicable	<=10.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information**Recommended Uses and Restrictions**

Thermal insulation. For industrial use. ITW recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with ITW's stated use, please contact ITW's Customer Information Group.

Revision

Identification Number: 81202 / 1001 / Issue Date 11/03/2008 / Version: 4.0 Most recent revision(s) are noted by the bold bar in left-hand margin throughout this document.

Legend

N/A	Not available
WW	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
ITW IHG	ITW Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The ITW Insulation Systems urges each customer or recipient of this MSDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this MSDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations.

It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific MSDSs, we are not and cannot be responsible for MSDSs obtained from any source other than ourselves. If you have obtained an MSDS from another source or if you are not sure that the MSDS you have is current, please contact us for the most current version.

**Insulation
Systems****Material Safety Data Sheet**

ITW Insulation Systems

ITW Insulation Systems encourages and expects you to read and understand the entire MSDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification**Product Name**

TRYMER™ Supercel Rigid Phenolic Insulation

COMPANY IDENTIFICATION

ITW Insulation Systems

1370 East 40th Street

Building 7, Suite 1

Houston, TX 77022-4101

USA

Contact Information Number:

1-800-231-1024

2. Hazards Identification**Emergency Overview****Color:** Gray (2.5 lbs/ft³), Yellow (3.75 lbs/ft³), Green (5 lbs/ft³), Pink (7.5 lbs/ft³)**Physical State:** Bun/billet**Odor:** Odorless**Hazards of product:****Toxic fumes may be released in fire situations.****OSHA Hazard Communication Standard**

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects**Eye Contact:** Solid or dust may cause irritation or corneal injury due to mechanical action.

Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

Skin Contact: Essentially non-irritating to skin. Mechanical injury only.**Skin Absorption:** Skin absorption is unlikely due to physical properties.**Inhalation:** Dust may cause irritation to upper respiratory tract (nose and throat). Fumes or dusts generated from cutting or grinding operations may cause irritation of the upper respiratory tract and lungs. Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.**Ingestion:** Swallowing is unlikely because of the physical state. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. May cause choking or blockage of the digestive tract if swallowed.

3. Composition Information

Component	CAS #	Amount
100% Completely reacted cross linked cellular foam	Not applicable	> 91 %
Hydrocarbon blowing agent(s)	109-66-0	< 9.0 %

4. First-aid measures

Eye Contact: Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact: Seek first aid or medical attention as needed.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: If swallowed, seek medical attention. May cause gastrointestinal blockage. Do not give laxatives. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires.

Special Protective Equipment for Fire Fighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: When product is stored in closed containers, a flammable atmosphere can develop. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. Rapid bursting of a multitude of cells such as might occur during compaction of product waste for disposal will release a flammable blowing agent which can lead to the development of a flammable atmosphere in inadequately vented equipment. This product contains a flame retardant to inhibit accidental ignition from small fire sources. This plastic foam product is combustible and should be protected from flames and other high heat sources. For more information, contact ITW. Dense smoke is emitted when burned without sufficient oxygen.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. In smoldering or flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Combustion products may include and are not limited to: Nitrogen oxides. Combustion products may include trace amounts of: Hydrogen cyanide. Hydrogen halides.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Recover spilled material if possible. Collect in suitable and properly labelled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 13, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: This material is combustible and should not be exposed to flame or other ignition sources. Refer to "EXPOSURE CONTROLS AND PERSONAL PROTECTION", Section 8 of the MSDS. No smoking, open flames or sources of ignition in handling and storage area. Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Provide adequate ventilation to assure localized concentrations in release areas are maintained below the lower flammable limit.

Other Precautions: Good housekeeping and controlling of dusts are necessary for safe handling of product.

Storage

Keep in a cool, well-ventilated place. Minimize sources of ignition, such as static build-up, heat, spark or flame. Flammable vapors may accumulate in some storage situations. During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Cyclopentane	ACGIH	TWA	600 ppm
Isopentane	ACGIH	TWA	600 ppm

Personal Protection

Eye/Face Protection: Eye protection should not be necessary. For fabrication operations safety glasses are recommended. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin Protection: No precautions other than clean body-covering clothing should be needed.

Hand protection: Use gloves to protect from mechanical injury. Selection of gloves will depend on the task.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Particulate filter.

Ingestion: No precautions necessary due to the physical properties of the material.

Engineering Controls Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. Physical and Chemical Properties

Physical State	Bun/billet
Density (lbs/ft ³)	2.5, 3.75, 5, and 7.5
Color	Gray/Purple (2.5 lbs/ft ³), Yellow/Pink (3.75 lbs/ft ³), Green/Blue (5 lbs/ft ³), Pink/Red (7.5 lbs/ft ³)
Odor	Odorless
Flash Point	Not applicable
Vapor Pressure	Not applicable
Boiling Point (760 mmHg)	Not applicable.
Vapor Density (air = 1)	Not applicable
Specific Gravity (H ₂ O = 1)	0.05 - 0.10 <i>Estimated</i>
Freezing Point	Not applicable
Melting Point	> 150 °C (> 302 °F) <i>Estimated</i> Decomposes
Solubility in Water (by weight)	insoluble in water
pH	Not applicable
Kinematic Viscosity	Not applicable
Solubility in organics	Some liquids might cause swelling
Other data	CFC / HCFC- free with zero Ozone Depletion Potential (ODP)

10. Stability and Reactivity

Stability/Instability

Thermally stable at typical use temperatures.

Conditions to Avoid: Avoid temperatures above 150°C (302°F) Exposure to elevated temperatures can cause product to decompose. Avoid static discharge.

Incompatible Materials: Avoid contact with oxidizing materials.

Hazardous Polymerization: Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. Toxicological Information

Repeated Dose Toxicity

Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning

No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material is expected to float.

Persistence and Degradability

Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

ECOTOXICITY

Not expected to be acutely toxic to aquatic organisms.

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. ITW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Landfill. Incinerator or other thermal destruction device. As a service to its customers, ITW can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone ITW's Customer Information Group at 1-800-231-1024 for further details.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information**OSHA Hazard Communication Standard**

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information**Recommended Uses and Restrictions**

Thermal insulation. For industrial use. ITW recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with ITW's stated use, please contact ITW's Customer Information Group.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
ITW IHG	ITW Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The ITW Insulation Systems urges each customer or recipient of this MSDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this MSDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations.

It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific MSDSs, we are not and cannot be responsible for MSDSs obtained from any source other than ourselves. If you have obtained an MSDS from another source or if you are not sure that the MSDS you have is current, please contact us for the most current version.



Material Safety Data Sheet

The Dow Chemical Company

Product Name: SUPER TUFF-R(TM) C 1.00 Inch Commercial
Insulation Sheathing

Issue Date: 03/14/2007

Print Date: 16 Mar 2007

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

SUPER TUFF-R(TM) C 1.00 Inch Commercial Insulation Sheathing

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number:

800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

989-636-4400

Local Emergency Contact:

989-636-4400

2. Hazards Identification

Emergency Overview

Color: Tan

Physical State: Board

Odor: Mild

Hazards of product:

Toxic fumes may be released in fire situations.

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: Solid or dust may cause irritation or corneal injury due to mechanical action. Fumes or dust generated from cutting or grinding operations may cause eye irritation.

Skin Contact: May cause itching. May cause skin irritation due to mechanical abrasion.

Skin Absorption: Skin absorption is unlikely due to physical properties.

* Indicates a Trademark

Inhalation: Dusts or fibers generated in processing may cause irritation of the upper respiratory tract (nose and throat). Fumes or dusts generated from cutting or grinding operations may cause irritation of the upper respiratory tract and lungs. Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

Ingestion: Swallowing is unlikely because of the physical state. Very low toxicity if swallowed.

Harmful effects not anticipated from swallowing small amounts. May cause choking if swallowed.

Effects of Repeated Exposure: Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects. The data presented are for the following material: The fiberglass in this product is continuous filament fiberglass. Repeated exposure to particles generated by grinding may result in implantation of particles in the skin.

3. Composition Information

Component	CAS #	Amount
Modified Polyisocyanurate Rigid Cellular Polymer	Not applicable	> 60.0 %
Kraft Paper	Not applicable	< 20.0 %
Hydrocarbon blowing agent(s)	Not applicable	< 10.0 %
Aluminum	7429-90-5	< 10.0 %
Continuous Filament Glass Fiber	Not applicable	< 10.0 %
Polyethylene terephthalate (PET)	25038-59-9	< 10.0 %

4. First-aid measures

Eye Contact: Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact: Wash skin with plenty of water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: If swallowed, seek medical attention. May cause gastrointestinal blockage. Do not give laxatives. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: Container may vent and/or rupture due to fire. When product is stored in closed containers, a flammable atmosphere can develop. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product contains a flame retardant to inhibit accidental ignition from small fire sources. This plastic foam product is combustible and should be protected from flames and other high heat sources. For more information, contact Dow. Dense smoke is emitted when burned without sufficient oxygen.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. In smoldering or

flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Combustion products may include and are not limited to: Nitrogen oxides. Combustion products may include trace amounts of: Hydrogen cyanide. Hydrogen halides.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: This material is combustible and should not be exposed to flame or other ignition sources. Refer to "EXPOSURE CONTROLS AND PERSONAL PROTECTION", Section 8 of the (M)SDS. No smoking, open flames or sources of ignition in handling and storage area. Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Provide adequate ventilation to assure localized concentrations in release areas are maintained below the lower flammable limit.

Other Precautions: Good housekeeping and controlling of dusts are necessary for safe handling of product.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Flammable vapors may accumulate in some storage situations. During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Poly(ethylene oxide)	WEEL	TWA Particulate.	10 mg/m3
Isopentane	ACGIH	TWA	600 ppm
Cyclopentane (8CI, 9CI)	ACGIH	TWA	600 ppm
Aluminum	ACGIH	TWA Dust.	10 mg/m3
	OSHA Table Z-1	PEL Total dust. as Al	15 mg/m3
	OSHA Table Z-1	PEL	5 mg/m3
		Respirable dust. as Al	
Glass fibres	ACGIH	TWA Inhalable fraction.	5 mg/m3
	ACGIH	TWA Fiber.	1 fibers/cm3

Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

Personal Protection

Eye/Face Protection: Use safety glasses. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. If exposure to fumes causes eye discomfort, use a full-face air-purifying respirator.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves to protect from mechanical injury. Selection of gloves will depend on the task.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. If respiratory irritation is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Particulate filter.

Ingestion: No precautions necessary due to the physical properties of the material.

Engineering Controls

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. Physical and Chemical Properties

Physical State	Board
Color	Tan
Odor	Mild
Flash Point - Closed Cup	Not applicable
Flammable Limits In Air	Lower: Not applicable Upper: Not applicable
Autoignition Temperature	490 °C (914 °F) <i>ASTM D1929</i>
Vapor Pressure	Not applicable
Boiling Point (760 mmHg)	Not applicable.
Vapor Density (air = 1)	Not applicable
Specific Gravity (H2O = 1)	0.02 - 0.05 <i>Estimated</i>
Freezing Point	Not applicable
Melting Point	> 150 °C (> 302 °F) <i>Estimated</i> Decomposes
Solubility in Water (by weight)	insoluble in water
pH	Not applicable
Kinematic Viscosity	Not applicable

10. Stability and Reactivity

Stability/Instability

Thermally stable at typical use temperatures.

Conditions to Avoid: Avoid temperatures above 150°C (302°F) Exposure to elevated temperatures can cause product to decompose. Avoid direct sunlight.

Incompatible Materials: Avoid contact with: Strong oxidizers.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. Toxicological Information

Acute Toxicity

Ingestion

Single dose oral LD50 has not been determined.

Skin Absorption

The dermal LD50 has not been determined.

Repeated Dose Toxicity

Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects. The data presented are for the following material: The fiberglass in this product is continuous filament fiberglass. Repeated exposure to particles generated by grinding may result in implantation of particles in the skin. Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

Chronic Toxicity and Carcinogenicity

The fiberglass in this product is continuous filament fiberglass. IARC's evaluation of data on continuous filament fiberglass is that there is inadequate evidence of carcinogenicity in animals and in humans. IARC's classification was based primarily on animal studies involving routes of administration (intratracheal, intrapleural, and intraperitoneal) which have limited relevance to typical exposures anticipated in industrial settings.

Genetic Toxicology

The data presented are for the following material: The fiberglass in this product is continuous filament fiberglass. In vitro genetic toxicity studies were inconclusive.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning

No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material is expected to float.

Persistence and Degradability

Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

ECOTOXICITY

Not expected to be acutely toxic to aquatic organisms.

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Landfill. Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics,

and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
Aluminum	7429-90-5	<= 10.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Aluminum	7429-90-5	<= 10.0 %
Hydrocarbon blowing agent(s)	Not applicable	<= 10.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Recommended Uses and Restrictions

Thermal insulation. Dow recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with Dow's stated use, please contact Dow's Customer Information Group.

Revision

Identification Number: 82163 / 0000 / Issue Date 03/14/2007 / Version: 3.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

MATERIAL SAFETY DATA SHEET

Aerocel - W/G Insulation

Prepared 11/2011

Aeroflex USA, Inc.

282 Industrial Park Rd.
Sweetwater, TN 37874

Tel 423-337-2493
Fax 423-351-7368

Manufactured In Sweetwater, TN
USA

I. PRODUCT IDENTIFICATION

Name: Aerocel - EPDM White Gray Closed Cell Elastomeric Thermal Insulation

II. CHEMICAL NAME

Ethylene - Propylene - Terpolymer Rubber blended compound

III. PRODUCT CONTENT

This product is an expanded, closed cell, cross-linked rubber type compound. It contains synthetic polymers, fillers, plasticizers and rubber chemicals. Since all of these material are bound in a polymer matrix, this product does not qualify as a hazardous material as defined by OSHA (29 CFR 1910.1200).

IV. COMPOSITION / INFORMATION ON INGREDIENTS

Ethylene-Propylene-Terpolymer Rubber
Formal Name: EPT/EPDM
Chemical Family: Synthetic Rubber
An Appropriate container for reuse or disposal
CAS No.: 25038-36-2

Alumina Trihydrate
Chemical Name:
Aluminum Tryhydrate/Aluminum Hydroxide
Formal Name: Aluminum Oxide Trihydrate
CAS No.: 21645-51-2

Titanium Dioxide
Chemical Name:
Titanium Dioxide
CAS No: 13463-67-7

V. HAZARD IDENTIFICATION (Health Hazards)

Inhalation: No significant signs of any adverse health hazards are expected to occur as a result of inhalation exposure.

Eye Contact: No significant signs of any adverse health hazards are expected to occur as a result of eye contact

Skin Contact: No significant signs of any adverse health hazards are expected to occur as a result of skin contact

Ingestion: Practically non-toxic

VI. FIRST AID MEASURES

Inhalation: Not required under normal use. If irritation persists, remove from exposed area

Eye Contact: Not required under normal use. Flush with water until all traces of this material are gone. Seek medical attention if irritation persists.

Skin Contact: Not required under normal use.

Ingestion: If illness or adverse symptoms develop obtain medical attention.

VII. FIRE FIGHTING MEASURES

Extinguishing Media: Carbon Dioxide, ABC dry chemical, water spray and foam. Specific hazards with regard to fire fighting measures: Approach from upwind side. Avoid breathing smoke, fumes or vapors on downwind side. Firefighters wear protective clothing, especially eye protection and self contained breathing apparatus.

Hazardous Combustion Products: Material is stable under normal conditions. In the event of a prolonged fire, may generate Carbon Monoxide, Carbon Dioxide, Low molecular weight alcohol/aldehydes and acid.

VIII. ACCIDENTAL RELEASE MEASURES

Steps if materials released/spilled:

Land spilled: Collect spilled material and place in an appropriate container for reuse or disposal

Water spilled: Product is insoluble. Collect spilled material and place in an appropriate container for reuse or disposal

Neutralizing Agent: N/A

IX. HANDLING AND STORAGE

Handling condition: No special precaution required

Storage condition: Keep in a dry normal storage.

X. EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Controls: General ventilation

Personal Protection: N/A

XI. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Expanded Rubber Foam

Specific Gravity ($H_2O=1$): 0.04-0.09

Service Temperature ($^{\circ}C$): $-57^{\circ}C$ to $+125^{\circ}C$ ($-70^{\circ}F$ to $+257^{\circ}F$)

Thermal Conductivity (W/mK): 0.037 w/mk (0.25 Btu in/ft², hr. $^{\circ}F$)

Water Vapor Permeability: 0.10 Perm-inch (0.15×10^{-12} Kg/Pa s m)

Water Absorption: 5% by weight

Compression Set: Excellent

Flammability: Self-extinguishing

XII. STABILITY AND REACTIVITY

Stability and Reactivity: Stable

Conditions to avoid: N/A

Hazardous Decomposition products: May generate Carbon Monoxide, Carbon Dioxide, Low molecular weight alcohols, aldehydes and acids.

Hazardous Polymerization: Will not occur.

XIII. TOXICOLOGICAL INFORMATION

No Data.

XIV. ECOLOGICAL INFORMATION

No Data.

XV. DISPOSAL CONSIDERATION

Waste material may be disposed of in an approved landfill or may be incinerated under conditions which meet federal, State and Local environmental regulations.

XVI. TRANSPORT INFORMATION

No Specific precautions required.

XVII. REGULATORY INFORMATION

No Data.

XVIII. OTHER INFORMATION

The information supplied herein is related to material specified and may not be valid if used in combination with other material or process. Further the information contained here is believed to be reliable and based on correct state of our knowledge. However no guarantees of any kind can be give to its accuracy.

SAFETY DATA SHEET

with reference to (EC) 1907/2006

Armaflex-products

revised 24.02.2011, replaces version 26.07.2010

Changes compared to the last version are marked as follows: (*)

STATUS: 24.02.2011

PAGE: 4 (of 4)

13. DISPOSAL CONSIDERATIONS

DISPOSAL PRODUCT Dispose waste according to applicable local, state and federal regulations.

LIST OF PROPOSED WASTE CODES IN ACCORDANCE WITH EWC European Waste Catalogue:
07 02 13 (waste plastic)

Please note: The classification of waste for this product may change according to the field of application. Please observe Decision 2001/118/EC.

DISPOSAL PACKAGES Normal disposal path for cardboard packaging.

14. TRANSPORT INFORMATION

No hazardous material as defined by the transport regulations (ADR/RID, IMDG-Code, ICAO-TI/IATA-DGR).

15. REGULATORY INFORMATION

This product does not require labelling in terms of REACH regulation (EC) 1907/2006

16. OTHER INFORMATION

The data in this safety data sheet correspond to our current level of knowledge and are sufficient for national and EU laws. However, we have no knowledge of or control over the working conditions.

The data in this safety data sheet describe the safety requirements of our product and may not be considered to guarantee any product properties.

SAFETY DATA SHEET

with reference to (EC) 1907/2006

Armaflex-products

revised 24.02.2011, replaces version 26.07.2010

Changes compared to the last version are marked as follows: (*)

STATUS: 24.02.2011

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9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Tubes and sheets (some brands also self-adhesive); some brands also self-adhesive strips or self-adhesive tapes
COLOUR	Black, grey, or blue
ODOUR	characteristic
MELTING POINT	not applicable
BOILING POINT	not applicable
LOWER EXPLOSION LIMIT	not applicable
UPPER EXPLOSION LIMIT	not applicable
DENSITY AT 20 °C	45 - 100 kg / m ³
WATER SOLUBILITY (20 °C)	insoluble

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID	Avoid the influence of naked flames.
HAZARDOUS REACTION	No dangerous reactions known.
HAZARDOUS DECOMPOSITION PRODUCTS	No decomposition if used as prescribed.

11. TOXICOLOGICAL INFORMATION

EXPERIENCE MADE IN PRACTICE	When used and handled according to specification, the product does not have any harmful effect according to our experience and knowledge.

12. ECOLOGICAL INFORMATION

ADDITIONAL ECOLOGICAL INFORMATION	The product is classified non-hazardous to waters.

SAFETY DATA SHEET

with reference to (EC) 1907/2006

Armaflex-products

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STATUS: 24.02.2011

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5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA Unrestricted

SPECIAL EXPOSURE HAZARDS Fire gases, do not breathe. Emits toxic fumes under fire conditions because of
ARISING FROM THE PREPARATION incomplete incineration. In the case of fire wear self-contained breathing
apparatus.

6. ACCIDENTAL RELEASE MEASURE

PERSONAL PRECAUTIONS Unnecessary

ENVIRONMENTAL PRECAUTIONS Unnecessary

METHODS FOR CLEANING UP / Take up mechanically.
TAKING UP

7. HANDLING AND STORAGE

HINTS FOR SAFE HANDLING None

HINTS FOR PROTECTION AGAINST None
FIRE AND EXPLOSION

HINTS FOR SEPARATION OF None
INCOMPATIBLE PRODUCTS

FURTHER INFORMATION ON Can be stored in clean, dry rooms under normal conditions with respect to
STORAGE CONDITIONS humidity (50 - 70 %) and surrounding temperature (0 °C - 35 °C)

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

GENERAL HEALTH MEASURES Unnecessary

RESPIRATORY PROTECTION Unnecessary

HAND PROTECTION Unnecessary

EYE PROTECTION Unnecessary

SAFETY DATA SHEET

with reference to (EC) 1907/2006

Armaflex-products

revised 24.02.2011, replaces version 26.07.2010

Changes compared to the last version are marked as follows: (*)

STATUS: 24.02.2011

PAGE: 1 (of 4)

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY

PRODUCT NAME Armaflex

USE OF THE PRODUCT Insulation and protection for pipes

MANUFACTURER /DISTRIBUTOR Armacell GmbH
Robert-Bosch-Straße 10, D-48153 Münster
Tel: +49 (0)251 - 7603 - 200 Fax: +49 (0)251 - 7603 - 561
www.armacell.com

Technical contact point:

Dr. Dirk Selling
Quality, Safety, Environment
Tel: +49 (0)251 - 7603 - 664 Fax: +49 (0)251 - 7631 - 664
dirk.selling@armacell.com

EMERGENCY INFORMATION Beratungsstelle für Vergiftungserscheinungen und Embryonaltoxikologie
(Giftnotruf Berlin)
Tel: +49 (0)30 - 19240
www.giftnotruf.de

2. HAZARDS IDENTIFICATION

HAZARD DESIGNATION None

3. COMPOSITION / INFORMATION ON INGREDIENTS

DESCRIPTION Interlaced foam based on synthetic rubber (elastomeric)

4. FIRST-AID MEASURES

IN CASE OF INHALATION Unnecessary

IN CASE OF SKIN CONTACT Unnecessary

IN CASE OF EYE CONTACT Unnecessary

IN CASE OF INGESTION If possible, induce vomiting.

SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Manufacturer's name and address:



K-FLEX USA

K-FLEX USA
100 Nomaco Dr
Youngsville, NC 27596
USA

Supplier's name and address:

Refer to Manufacturer

Telephone No.: (800) 765-6475

Website Address: www.kflexusa.com

Product Identifier: K-FLEX Elastomeric Foam; K-FLEX INSUL-TUBE, K-FLEX INSUL-SHEET, K-FLEX INSUL-SHEET S2S, K-FLEX INSUL-TUBE COIL, K-FLEX INSUL-LOCK, K-FLEX INSUL-LOCK SEAM SEAL, K-FLEX INSUL-TUBE WHITE, K-FLEX DUCT LINER GRAY, K-FIT, ELASTOMERIC TAPE, K 40-P, K 41-P, K 41-PA

Chemical Name: NBR/PVC Elastomeric Foam

Recommended Use: This product is classified as an "article" according to Title 29 of the Code of Federal Regulations, OSHA Part 1910.1200C.

SECTION 2 - HAZARD(S) IDENTIFICATION

Hazardous Ingredient: None

SECTION 3 - COMPOSITION / INFORMATION OF INGREDIENTS

Description: Elastomeric closed-cell foam comprised of nitrile butadiene rubber / polyvinyl chloride (NBR/PVC). Available in rolls and sheets of various dimensions.

SECTION 4 - FIRST-AID MEASURES

Inhalation: Unlikely route of exposure. No measures established.

Skin Contact: If rash or irritation develops, wash with soap and water. If rash or irritation persists, consult a physician.



Eye Contact: Small particles may cause irritation. Flush with water. If irritation persists, consult a physician.

Ingestion: Unlikely route of exposure. No adverse effects anticipated.

SECTION 5 – FIRE-FIGHTING MEASURES

Extinguishing Media: Water, CO₂, Dry Chemical, Foam

Special Firefighting Procedures: Recommend NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing be worn.

Decomposition Products: Upon combustion, HCl, HCN, and other hazardous gases may be evolved.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions: Recommend light to medium duty cloth or leather gloves and approved safety glasses.

Emergency Procedures: None.

SECTION 7 – HANDLING AND STORAGE

Hints for Safe Handling: None.

Hints for Fire and Explosion Protection: None.

Hints for Separation of Incompatible Materials: None.

Storage Recommendations: Avoid storage in confined areas where temperatures may exceed 51°C (125°F).

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Medical Conditions Aggravated by Exposure: Not established.

Codes Used: N/A

General Health Measures: N/A

Engineering Controls: Local exhaust ventilation is recommended for control of airborne dust, fumes, and vapors in confined areas.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Sheets, rolls, and tubes; some with self-adhesive
Color:	Black, white, or gray.
Odor:	Negligible to no odor.
Melting Point:	N/A
Boiling Point:	N/A
Lower Explosion Limit:	N/A
Upper Explosion Limit:	N/A
Vapor Pressure @ 20°C:	0.1
Vapor Density (Air = 1):	N/A
Solubility:	Insoluble
Specific Gravity (H ₂ O = 1):	N/A
Flash Point:	N/A

SECTION 10 – STABILITY AND REACTIVITY

Stability:	Stable.
Incompatibility:	N/A
Decomposition Products:	Upon combustion, HCl, HCN, and other hazardous gases may be evolved.

SECTION 11 – TOXICOLOGICAL INFORMATION

Effects on short- and long-term Exposure:	When used and handled according to specification, the product does not have any harmful effect to the best of our knowledge.

SECTION 12 – ECOLOGICAL INFORMATION

Classified as non-hazardous to waters.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal: Not a RCRA hazardous waste. Dispose of in accordance with local, state, and federal regulations.

SECTION 14 – TRANSPORT INFORMATION

No hazardous materials.

SECTION 15 – REGULATORY INFORMATION

N/A

SECTION 16 – OTHER INFORMATION

Revised April, 2015. The information and recommendations contained herein are based upon data that is accurate and reliable, to the best of K-FLEX USA, LLC knowledge and belief. With respect to information and recommendations, K-FLEX USA, LLC makes no representations or warranties of any kind or nature, expressed or implied.

Identification

Product identifier	ACQ Pressure Treated Lumber
Product list	Pressure Treated Lumber Premium Southern Gold® Pressure Treated Lumber Premium Southern Gold® Plus Water-Repellent Pressure Treated Lumber
Other means of identification	
SDS number	GP-33Q
Synonyms	ACQ Treated * ACQ Treated Wood * ACQ Type D
Recommended use	Not available.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Company name	Georgia-Pacific Treated Lumber LLC	
Address	133 Peachtree Street, NE Atlanta, GA 30303	
Telephone	Technical Information	888.427.4778
	MSDS Request	404.652.5119
E-mail	Not available.	
Emergency phone number	Chemtrec - Emergency	800.424.9300

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Serious eye damage/eye irritation	Category 2B
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Carcinogenicity	Category 1A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
OSHA defined hazards	Combustible dust	
Label elements		



Signal word Danger

Hazard statement Causes eye irritation. May cause an allergic skin reaction. Wood dust generated from sawing, sanding or machining this product, may cause allergy or asthma symptoms or breathing difficulties if inhaled, may cause respiratory irritation, may cause cancer. If small particles of wood dust are generated during further processing, handling or by other means, may form combustible dust concentrations in air. Harmful to aquatic life.

Precautionary statement

Prevention

Do not handle until all safety precautions have been read and understood. Wear protective gloves. In case of inadequate ventilation wear respiratory protection. Avoid breathing dust. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Prevent dust accumulation and airborne dispersion of dust to minimize flash fire and explosion hazard. Avoid release to the environment.

Response	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a doctor or other qualified medical professional. Specific treatment (see section 4 on the SDS). In case of fire: Use appropriate media to extinguish.
Storage	Store away from strong acids, alkalies, oxidizing agents and drying oils.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
WOOD/WOOD DUST		Not Assigned	90 - 100
Monoethanolamine		141-43-5	1 - 5
Copper complex expressed as Copper oxides		Proprietary	0.3 - 2.1
Brown Azo Dye		Proprietary	0.1 - 1
Alkyl dimethyl benzyl ammonium chloride**		68391-01-5	0 - 1
Dialkyl dimethyl Ammonium carbonate/bicarbonate**		Proprietary	0 - 1
Didecyl dimethyl ammonium chloride**		7173-51-5	0 - 1
BORIC ACID (H3BO3)		10043-35-3	0 - 0.1

The specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments ** This product contains one of the given quaternary ammonium compounds depending on the type of ACQ Wood Preservative used.

4. First-aid measures

Inhalation	Remove from area of exposure. If the affected person is not breathing, apply artificial respiration. If persistent irritation, severe coughing or breathing difficulty occurs, seek medical attention.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. If irritation develops, wash with soap and water. Get medical attention if irritation persists.
Eye contact	Do not rub the eyes. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Ingestion	If wood or wood dust is swallowed, get immediate medical attention or advice – Do not induce vomiting.
Most important symptoms/effects, acute and delayed	Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause an allergic skin reaction. Dermatitis. Rash. May cause allergic respiratory reaction. Difficulty in breathing.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Use methods for the surrounding fire. Apply extinguishing media carefully to avoid creating airborne dust.
Unsuitable extinguishing media	Heavy water (or jet) stream may cause dust to become airborne and create a flash fire hazard or an explosive atmosphere.
Specific hazards arising from the chemical	Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Fire fighting equipment/instructions

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

In case of fire and/or explosion do not breathe fumes. Firefighters should wear full protective clothing including self contained breathing apparatus. Move containers from fire area if you can do so without risk. Partially burned dust is especially hazardous if dispersed into the air. Wet down to reduce likelihood of ignition or dispersion. Remove burned or wet dust to open, secure area after fire is extinguished.

Specific methods

To avoid dust clouds, responders should use the extinguisher from as far away as possible and apply the extinguishing agent as gently as possible. The main considerations with hose stream operation are to avoid creating combustible dust clouds or introducing more air. In particular, the use of solid streams and direct dust pile hits can disperse dust into the air creating a potential flash fire hazard. The best way to apply water is in a medium to wide-pattern, as gently as possible. Responders should use a low nozzle pressure and loft the stream onto the burning material from as far away as the stream will reach. The use of wide-pattern (or "fog") streams at pressures typically used.

General fire hazards

May form combustible dust concentrations in air. Wood is combustible when exposed to heat or flame. Wood dusts may form explosive mixtures with air in the presence of an ignition source. An airborne dust concentration of 40 g/m³ of air is often used as the lower explosion limit (LEL) for wood dust. Avoid prolonged breathing of wood dust or decomposition products.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Avoid inhalation of dust during clean up. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Vacuum dust with dust ignition proof vacuum or wet sweep small wood pieces and dust; place in appropriate container for disposal. Gather larger pieces by an appropriate method. Reduce airborne dust by use of wet methods (e.g. water mist) and prevent scattering by moistening with water. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Do not burn treated wood. Do not use pressure treated wood as mulch. Dust can form an explosive mixture in air. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. If flash fire or explosion hazard is present, wear flame resistant clothing and face/head protection. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Use personal protective equipment as required. Ensure dust collection systems used for conveying combustible wood dusts are protected with and equipped with fire and explosion prevention and protection equipment. See NFPA 664 and NFPA 69 for further requirements, information and guidance.

Conditions for safe storage, including any incompatibilities

Store flat, supported and protected from direct contact with the ground. Store away from incompatible materials (see Section 10 of the SDS). Store in a cool dry place.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Copper complex expressed as Copper oxides	PEL	1 mg/m ³	Dust and mist.
Monoethanolamine (CAS 141-43-5)	PEL	6 mg/m ³	
		3 ppm	
WOOD/WOOD DUST	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

ACGIH Components		Type	Value	Form
WOOD/WOOD DUST		TWA	1 mg/m3	Inhalable fraction.
US ACGIH Threshold Limit Values: Short Term Exposure Limit (STEL): mg/m3				
Components		Type	Value	Form
BORIC ACID (H3BO3) (CAS 10043-35-3)		STEL	6 mg/m3	Inhalable fraction.
US ACGIH Threshold Limit Values: Time Weighted Average (TWA): mg/m3, non-standard units				
Components		Type	Value	Form
BORIC ACID (H3BO3) (CAS 10043-35-3)		TWA	2 mg/m3	Inhalable fraction.
Copper complex expressed as Copper oxides		TWA	1 mg/m3	Dust and mist.
US. ACGIH Threshold Limit Values				
Components		Type	Value	
Monoethanolamine (CAS 141-43-5)		STEL	6 ppm	
		TWA	3 ppm	
US. NIOSH: Pocket Guide to Chemical Hazards				
Components		Type	Value	Form
Copper complex expressed as Copper oxides		TWA	1 mg/m3	Dust and mist.
Monoethanolamine (CAS 141-43-5)		STEL	15 mg/m3	
			6 ppm	
		TWA	8 mg/m3	
			3 ppm	
WOOD/WOOD DUST		TWA	1 mg/m3	Dust.
Biological limit values		No biological exposure limits noted for the ingredient(s).		
Exposure guidelines		Georgia-Pacific Wood Products LLC voluntarily elects to adhere to exposure limits contained in OSHA's 1989 Air Contaminants Standard although certain limits were vacated in 1992. The present OSHA exposure limits governing wood dust is 15 mg/m3 (Total Dust) and 5 mg/m3 (Respirable Fraction).		
Appropriate engineering controls		Due to the fire and explosive potential of dust when suspended in air, precautions should be taken when material is used in any operation which may generate dust. Local exhaust, general dilution ventilation in enclosed areas, and explosion proof equipment is recommended. Use wet methods, if appropriate, to reduce airborne dust concentrations.		
Individual protection measures, such as personal protective equipment				
Eye/face protection		Safety glasses or goggles are recommended when using this product. Ensure compliance with OSHA's PPE standard (29 CFR 1910.132 and .133) for eye and face protection.		
Skin protection				
Hand protection		Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.		
Other		Impervious protective clothing and gloves recommended to prevent drying or irritation of skin. Ensure compliance with OSHA's PPE standards (29 CFR 1910.132 (general) and 138 (hand protection)). Safety shower/eye wash fountain is recommended in the workplace area (29 CFR 1910.151 (c)).		
Respiratory protection		A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).		
Thermal hazards		Wear appropriate thermal protective clothing (i.e. flame resistant clothing and head/face protection), when potential flash fire or explosion hazards are present.		
General hygiene considerations		When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.		

9. Physical and chemical properties

Appearance	Rigid board
Physical state	Solid.
Form	Solid wood
Color	Various
Odor	Resinous wood
Odor threshold	Not available.
pH	Not applicable
Melting point/freezing point	Not applicable
Initial boiling point and boiling range	Not applicable
Flash point	Not available.
Evaporation rate	Not applicable
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable
Flammability limit - upper (%)	<= 40 g/cm ³ Wood dust
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient n-octanol/water)	Not applicable
Auto-ignition temperature	400 - 500 °F (204.44 - 260 °C) for Wood
Decomposition temperature	Not available
Viscosity	Not available.
Other information	
Flash point class	Combustible
Specific gravity	<1.0

10. Stability and reactivity

Reactivity	None known.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Dust may form explosive mixture in air. Keep away from heat, sparks and open flame. Dust accumulation, dispersion of dust in air, high temperatures, open flame, sparks, or other sources of ignition. Contact with incompatible materials.
Incompatible materials	Strong acids, alkalies, oxidizing agents and drying oils.
Hazardous decomposition products	Thermal decomposition may emit irritating fumes or gases of carbon monoxide, carbon dioxide, aldehydes, or organic acids.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Dusts of this product may cause irritation to the nose, throat, or respiratory tract. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	May cause an allergic skin reaction.
Eye contact	Causes eye irritation.

Ingestion Due to material form and application, ingestion is considered unlikely. May cause irritation of the gastrointestinal tract.

Symptoms related to the physical, chemical and toxicological characteristics Dusts may irritate the respiratory tract, skin and eyes. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity May cause an allergic skin reaction. May cause respiratory irritation.

Product	Species	Test Results
ACQ Pressure Treated Lumber		
Acute		
Dermal		
LD50	Rabbit	32630 mg/kg estimated
Inhalation		
LC50	Rat	5000 mg/l, 4 Hours estimated
Oral		
LD50	Rat	29861 mg/kg estimated
Components	Species	Test Results

BORIC ACID (H3BO3) (CAS 10043-35-3)

Acute

Inhalation

LC50 Rat > 2 mg/l, 4 Hours

Oral

LD50 Rat 2660 mg/kg

Didecyl dimethyl ammonium chloride (CAS 7173-51-5)**

Acute

Dermal

LD50 Rat > 1000 mg/kg

Oral

LD50 Rat 329 mg/kg

Monoethanolamine (CAS 141-43-5)

Acute

Dermal

LD50 Rabbit 1025 mg/kg

Oral

LD50 Guinea pig 620 mg/kg

Mouse 700 mg/kg

Rat 1720 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity Not classified.

Carcinogenicity Wood dust generated from sawing, sanding or machining this product may cause nasal dryness, irritation, coughing and sinusitis. The International Agency for Research on Cancer (IARC), and National Toxicology Program (NTP) classifies wood dust as a carcinogen. This classification is based on the increased occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. The evaluation noted insufficient evidence to associate cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon, or rectum with exposure to wood dust.

IARC Monographs. Overall Evaluation of Carcinogenicity

WOOD/WOOD DUST (CAS Not Assigned)

1 Carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

WOOD/WOOD DUST (CAS Not Assigned)

Known To Be Human Carcinogen.

Reproductive toxicity Not classified.**Specific target organ toxicity - single exposure** May cause respiratory irritation.**Specific target organ toxicity - repeated exposure** Not classified.**Aspiration hazard** Not available.**Chronic effects** Prolonged inhalation may be harmful.

Further information MONOETHANOLAMINE. Inhalation of high concentrations of monoethanolamine has been reported to cause pulmonary, liver, kidney and skin damage in experimental animals. Monoethanolamine may be corrosive to the eyes, skin, respiratory system and gastrointestinal tract, and may cause permanent damage to the eyes. Monoethanolamine may be absorbed through the skin in harmful amounts and may cause allergic skin reactions. Monoethanolamine exposures may cause damage to the nervous system, lungs, liver or kidneys.

COPPER COMPLEX EXPRESSED AS COPPER OXIDE. Copper complex expressed as copper oxide in this product contains copper salts which, upon ingestion of high oral doses, can cause gastrointestinal disturbances, anemia, and secondary liver and kidney damage.

12. Ecological information

Ecotoxicity This product contains small amounts of fungicides, which when released into the environment, may adversely affect plants and wildlife. Harmful to aquatic life.

Product		Species	Test Results
ACQ Pressure Treated Lumber			
Aquatic			
<i>Acute</i>			
Fish	LC50	Fish	38 mg/l, 96 hours estimated
Components		Species	Test Results
BORIC ACID (H3BO3) (CAS 10043-35-3)			
Aquatic			
Crustacea	EC50	Daphnia	766.5 mg/L, 48 Hours
Fish	LC50	Razorback sucker (Xyrauchen texanus)	> 100 mg/l, 96 hours
Copper complex expressed as Copper oxides			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0.036 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0319 - 0.0544 mg/l, 96 hours
Didecyl dimethyl ammonium chloride** (CAS 7173-51-5)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Pimephales promelas	0.19 mg/l, 96 hours
<i>Chronic</i>			
Crustacea	NOEC	Invertebrates (Invertebrates)	0.021 mg/l, 21 days
Monoethanolamine (CAS 141-43-5)			
Aquatic			
Algae	IC50	Algae	15 mg/L, 72 Hours
Crustacea	EC50	Daphnia	65 mg/L, 48 Hours
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss)	114 - 196 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Partition coefficient n-octanol / water (log Kow)	
Monoethanolamine	-1.31
Mobility in soil	No data available.
Other adverse effects	Pressure treated wood should not be used where it may come in direct or indirect contact with drinking water. Pressure treated wood should not be used in circumstances where preservative may become a component of food, animal feed or beehives.

13. Disposal considerations

Disposal instructions	Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of material according to Local, State, Federal, and Provincial Environmental Regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.		
	ACQ Pressure Treated Wood Products contains a quaternary ammonium compound, an EPA registered product.		
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.		
CERCLA Hazardous Substance List (40 CFR 302.4)	Copper complex expressed as Copper oxides (CAS Proprietary) Listed.		
SARA 304 Emergency release notification	Not regulated.		
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.		
Superfund Amendments and Reauthorization Act of 1986 (SARA)			
Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No		
SARA 302 Extremely hazardous substance	Not listed.		
SARA 311/312 Hazardous chemical	Yes		
SARA 313 (TRI reporting)			
Chemical name	CAS number	% by wt.	
Copper complex expressed as Copper oxides	Proprietary	0.3 - 2.1	

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

BORIC ACID (H3BO3) (CAS 10043-35-3)

Copper complex expressed as Copper oxides (CAS Proprietary)

US. Massachusetts RTK - Substance List

Copper complex expressed as Copper oxides (CAS Proprietary)

Monoethanolamine (CAS 141-43-5)

US. New Jersey Worker and Community Right-to-Know Act

Copper complex expressed as Copper oxides (CAS Proprietary)

Monoethanolamine (CAS 141-43-5)

WOOD/WOOD DUST (CAS Not Assigned)

US. Pennsylvania Worker and Community Right-to-Know Law

Copper complex expressed as Copper oxides (CAS Proprietary)

Monoethanolamine (CAS 141-43-5)

WOOD/WOOD DUST (CAS Not Assigned)

US. Rhode Island RTK

Copper complex expressed as Copper oxides (CAS Proprietary)

US. California Proposition 65

California Proposition 65. WARNING: This product may generate wood dust, a chemical known to the state of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

WOOD/WOOD DUST (CAS Not Assigned)

Listed: December 18, 2009

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	May-21-2015
Revision date	August-18-2015
Version #	02
Further information	Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.
HMIS® ratings	Health: 2* Flammability: 1 Physical hazard: 0 Personal protection: X
NFPA ratings	Health: 2 Flammability: 1 Instability: 0

Disclaimer

This SDS is intended to quickly provide useful information to the user(s) of this material or product. It is not intended to serve as a comprehensive discussion of all possible risks or hazards, and it assumes a reasonable use of the product. The information contained in this SDS is believed to be accurate as of the date of preparation of this SDS and has been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. The user or handler (or their employer) should consider the specific conditions in which this material will be used, handled, or stored and determine what specific safety or other precautions are required. Employers should ensure that their employees, agents, contractors, and customers who will use the product receive adequate warnings and safe handling procedures, including a current SDS. Product users or handlers (or their employer) who are unsure of what specific precautions are required should consult their employer, product supplier, or safety or health professionals before handling or working with this product. Please notify us immediately if you believe this SDS or other safety and health information about this product is inaccurate or incomplete.

Revision Information

Composition/information on ingredients: Component information
GHS: Classification

K-FLEX ASJ Seaming Tape

SAFETY DATA SHEET

1. Product and Supplier Information

Product Description: All Service Jacket Tape

Product Designations: K-FLEX ASJ Seaming Tape



Supplier: K-FLEX USA

Address: 100 Nomaco Dr

Youngsville, NC 27596

Phone: 800-765-6475

2. Hazardous Components

The above listed products may contain one or more hazardous chemical components. However, due to their incorporation into the structure of the products, exposure to such components is not anticipated under normal conditions of use. See section 16 for further discussion.

3. Description of Hazards

Exposure to hazards of chemical components is not anticipated in normal use.

4. First Aid Measures

Clean and dress wound if cut by product edge. There are no known acute, immediate effects requiring treatment as a result of the use of this product as supplied.

5. Fire-fighting Measures

All extinguishing chemicals and methods are applicable. Self-contained, positive pressure breathing apparatus should be used if available in fire conditions. Fire or very high temperatures (not normal conditions of use) can cause release of toxic smoke and fumes.

6. Accidental Release Measures

Not applicable.

7. Handling and Storage Guidelines

Use care to avoid paper cuts from sheet edges. No other special handling or storage precautions apply in respect to potential hazards.

8. Exposure Controls and Personal Protection

None required in normal use. Exercise care to avoid paper cuts from sheet edges.

9. Physical and Chemical Properties

Product is a manufactured article in the form of a flexible sheet or strip. Contains some combination

of two or more of the following major material components: White Kraft Paper, Fiberglass Yarn, Aluminum Foil, Solvent Acrylic Adhesive, Silicone Release Paper.

10. Stability and Reactivity

Hazardous decomposition will occur only under fire conditions. Various harmful compounds could be formed during combustion. No hazards associated with normal use.

11. Toxicological Information

Although hazardous chemicals may be used in this product, exposure to those chemicals and possible hazardous effects will not occur with the product in this form, in normal use. SDS for individual hazardous chemicals can be supplied upon request by contacting Technical Service at the above number.

12. Ecological Information

The anticipated instances of release into the environment would be during disposal of scrapped building materials, of which this product could be a part, or waste during use. Other than the paper component, the materials of construction are very resistant to biodegradation and are not water soluble. Potential impact may be as per individual hazardous components, SDS for which can be supplied upon request by contacting Technical Service at the above number.

13. Disposal Considerations

Dispose of per appropriate local regulations. Product is not recyclable.

14. Transport Information

No special procedures required.

15. Regulatory Information

No known regulations apply.

16. Other Information

Per the Code of Federal Regulations 1910.1200, this product is considered by K-FLEX USA to be an *article*, defined in the regulation as "a manufactured item other than a fluid or particle. (i) which is formed to a specific shape or design during manufacture; (ii) has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees."

Although this product may contain hazardous components, we do not believe those hazards are present as manufactured or when used. Since the product meets the definition of an article, it is technically not subject to this regulation or SDS reporting. This document is provided for informational purposes, and is not meant to imply that this product is hazardous.

K-FLEX USA

Date: April 17, 2015

K-FLEX FSK Facing Tape

SAFETY DATA SHEET

1. Product and Supplier Information

Product Description: Foil-Scrim-Kraft Tape

Product Designations: K-FLEX FSK Facing Tape



Supplier: K-FLEX USA

Address: 100 Nomaco Dr

Youngsville, NC 27596

Phone: 800-765-6475

2. Hazardous Components

The above listed products may contain one or more hazardous chemical components. However, due to their incorporation into the structure of the products, exposure to such components is not anticipated under normal conditions of use. See section 16 for further discussion.

3. Description of Hazards

Exposure to hazards of chemical components is not anticipated in normal use. SDS for individual components are available from Venture Tape upon request by contacting Technical Service at the above number.

4. First Aid Measures

Clean and dress wound if cut by product edge. There are no known acute, immediate effects requiring treatment as a result of the use of this product as supplied.

5. Fire-fighting Measures

All extinguishing chemicals and methods are applicable. Self-contained, positive pressure breathing apparatus should be used if available in fire conditions. Fire or very high temperatures (not normal conditions of use) can cause release of toxic smoke and fumes.

6. Accidental Release Measures

Not applicable.

7. Handling and Storage Guidelines

Use care to avoid paper cuts from sheet edges. No other special handling or storage precautions apply in respect to potential hazards.

8. Exposure Controls and Personal Protection

None required in normal use. Exercise care to avoid paper cuts from sheet edges.

9. Physical and Chemical Properties

Product is a manufactured article in the form of a flexible sheet or strip. Contains some combination of two or more of the following major material components: Aluminum Foil (7u), Fiberglass Yarn, Kraft Paper, Solvent Acrylic Adhesive, Silicone Release Paper.

10. Stability and Reactivity

Hazardous decomposition will occur only under fire conditions. Various harmful compounds could be formed during combustion. No hazards associated with normal use.

11. Toxicological Information

Although hazardous chemicals may be used in this product, exposure to those chemicals and possible hazardous effects will not occur with the product in this form, in normal use. SDS for individual hazardous chemicals can be supplied upon request by contacting Technical Service at the above number.

12. Ecological Information

The anticipated instances of release into the environment would be during disposal of scrapped building materials, of which this product could be a part, or waste during use. Other than the paper component, the materials of construction are very resistant to biodegradation and are not water soluble. Potential impact may be as per individual hazardous components, SDS for which can be supplied upon request by contacting Technical Service at the above number.

13. Disposal Considerations

Dispose of per appropriate local regulations. Product is not recyclable.

14. Transport Information

No special procedures required.

15. Regulatory Information

No known regulations apply.

16. Other Information

Per the Code of Federal Regulations 1910.1200, this product is considered by K-FLEX USA to be an *article*, defined in the regulation as "a manufactured item other than a fluid or particle. (i) which is formed to a specific shape or design during manufacture; (ii) has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees."

Although this product may contain hazardous components, we do not believe those hazards are present as manufactured or when used. Since the product meets the definition of an article, it is technically not subject to this regulation or SDS reporting. This document is provided for informational purposes, and is not meant to imply that this product is hazardous.

PVC Pipe Fitting Covers & Jacketing

Version 1.1

Revision Date 09/08/2015

Print Date 09/24/2015

SECTION 0. GENERAL INFORMATION

This item meets the definition of article in the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : Ceel-Co® PVC Fitting Covers and Jacketing, Ceel-Co® 550 PVC Fitting Covers and Jacketing, Zeston® PVC Fitting Covers and Jacketing, Zeston® 2000 Series PVC Fitting Covers and Jacketing, Z-Tape

Manufacturer or supplier's details

Company : Johns Manville
Address : P.O. Box 5108
Denver, CO USA 80127
Telephone : 303-978-2000 8:00AM-5:00PM M-F
Emergency telephone : 1-800-424-9300 (Chemtrec, in English)
number

Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Not a hazardous substance or mixture.

GHS Label element

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

This item meets the definition of article in the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 4. FIRST AID MEASURES

General advice : Do not leave the victim unattended.

If inhaled : If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of eye contact : Remove contact lenses.
Protect unharmed eye.

PVC Pipe Fitting Covers & Jacketing

Version 1.1

Revision Date 09/08/2015

Print Date 09/24/2015

If eye irritation persists, consult a specialist.

If swallowed

: Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

SECTION 5. FIREFIGHTING MEASURESSpecific extinguishing
methods

: None known.

Further information

: Standard procedure for chemical fires.

Special protective equipment
for firefighters: Wear self-contained breathing apparatus for firefighting if
necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURESPersonal precautions,
protective equipment and
emergency procedures

: Avoid dust formation.

Methods and materials for
containment and cleaning up

: Pick up and arrange disposal without creating dust.
Sweep up and shovel.
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling

: For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the
application area.

Conditions for safe storage

: Keep in a dry, cool place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters****Personal protective equipment**

Respiratory protection

: No personal respiratory protective equipment normally
required.

Hand protection

Remarks

: For prolonged or repeated contact use protective gloves.

Eye protection

: Safety glasses

Skin and body protection

: If used and stored as directed, no special protective
equipment is necessary.

PVC Pipe Fitting Covers & Jacketing

Version 1.1

Revision Date 09/08/2015

Print Date 09/24/2015

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Written instructions for handling must be available at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : solid
Colour : various

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
Chemical stability : No decomposition if stored and applied as directed.
Possibility of hazardous reactions : Stable under recommended storage conditions.
No hazards to be specially mentioned.
Conditions to avoid : No data available

SECTION 11. TOXICOLOGICAL INFORMATION**Further information**

No data available

SECTION 12. ECOLOGICAL INFORMATION**Further information**

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
Packaging that cannot be reused after cleaning must be disposed or recycled in accordance with all federal, national and local regulations.

PVC Pipe Fitting Covers & Jacketing

Version 1.1

Revision Date 09/08/2015

Print Date 09/24/2015

SECTION 14. TRANSPORT INFORMATION**International transport regulations**

These products are not classified as dangerous goods according to international transport regulations.

SECTION 15. REGULATORY INFORMATION**TSCA list****California Prop 65**

: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16. OTHER INFORMATION**Further information**

Prepared by productsafety@jm.com

The information provided in this Safe Use Instruction (SUI) is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and emergency response and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



SAFETY DATA SHEET

1. Identification

Product identifier HERCULES CLEAR, PURPLE, AND UNPURPLE PRIMER

Other means of identification

SDS number 7402E

Synonyms Part Numbers: Clear - 60453, 60458, 60460, 60465, 60470, Purple - 60403, 60413, 60415, 60420, 60425 Un-Purple - 60445, 60447

Recommended use Joining PVC Pipes

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name HCC Holdings, Inc. an Oatey Affiliate

Address 4700 West 160th Street
Cleveland, OH 44135

Telephone 216-267-7100

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards Flammable liquids Category 2

Health hazards Acute toxicity, oral Category 4

Skin corrosion/irritation Category 2

Serious eye damage/eye irritation Category 2A

Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Specific target organ toxicity, single exposure Category 3 narcotic effects

Aspiration hazard Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Hazard(s) not otherwise classified (HNOC)

Dispose of contents/container in accordance with local, regional, national and international regulations.
Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
May form explosive peroxides. Contains a chemical classified by the US EPA as a suspected possible carcinogen.

Supplemental information

Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Acetone	67-64-1	30-60
Cyclohexanone	108-94-1	15-40
Furan, Tetrahydro-	109-99-9	10-30
Methyl ethyl ketone	78-93-3	10-30

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3 50 ppm
Furan, Tetrahydro- (CAS 109-99-9)	PEL	590 mg/m3 200 ppm
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m3 200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	750 ppm
	TWA	500 ppm
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm
	TWA	20 ppm
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Methyl ethyl ketone (CAS 78-93-3)	TWA	50 ppm
	STEL	300 ppm
	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3
		25 ppm
Furan, Tetrahydro- (CAS 109-99-9)	STEL	735 mg/m3
		250 ppm
Methyl ethyl ketone (CAS 78-93-3)	TWA	590 mg/m3
		200 ppm
	STEL	885 mg/m3
		300 ppm
	TWA	590 mg/m3
		200 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
		Cyclohexanol, with hydrolysis	Urine	*
Furan, Tetrahydro- (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1) Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

Furan, Tetrahydro- (CAS 109-99-9) Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Face shield is recommended. Wear safety glasses with side shields (or goggles).

Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Translucent.
Physical state	Liquid.
Form	Liquid.
Color	Clear, or Purple
Odor	Solvent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	151 °F (66.11 °C)
Flash point	14.0 - 23.0 °F (-10.0 - -5.0 °C)
Evaporation rate	5.5 - 8
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 °C
Vapor density	2.5
Relative density	0.82 - 0.86
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	< 100 cP
Other information	
Bulk density	7 lb/gal
VOC (Weight %)	505 g/l SQACMD Method 304

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20 ml/kg
<i>Inhalation</i>		
LC50	Rat	50 mg/l, 8 Hours
<i>Oral</i>		
LD50	Rat	5800 mg/kg
Cyclohexanone (CAS 108-94-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	948 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 hours
<i>Oral</i>		
LD50	Rat	1540 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity	In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1)	3 Not classifiable as to carcinogenicity to humans.

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Narcotic effects. May cause drowsiness and dizziness. Respiratory tract irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Inhalation hazard	May be fatal if swallowed and enters airways.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) > 100 mg/l, 96 hours
Cyclohexanone (CAS 108-94-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 481 - 578 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.

Bioaccumulative potential	No data available.

Partition coefficient n-octanol / water (log Kow)	
Acetone (CAS 67-64-1)	-0.24
Cyclohexanone (CAS 108-94-1)	0.81
Furan, Tetrahydro- (CAS 109-99-9)	0.46
Methyl ethyl ketone (CAS 78-93-3)	0.29

Mobility in soil	No data available.

Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	
UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Methyl ethyl ketone RQ = 25063 LBS, Acetone RQ = 12522 LBS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II

Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED
Furan, Tetrahydro- (CAS 109-99-9)	LISTED
Methyl ethyl ketone (CAS 78-93-3)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes
	Delayed Hazard - No
	Fire Hazard - Yes
	Pressure Hazard - No
	Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)
Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**

Acetone (CAS 67-64-1) 6532

Methyl ethyl ketone (CAS 78-93-3) 6714

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1) 35 %WV

Methyl ethyl ketone (CAS 78-93-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1) 6532

Methyl ethyl ketone (CAS 78-93-3) 6714

US state regulations**US. Massachusetts RTK - Substance List**

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. Rhode Island RTK

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	17-December-2014
Revision date	-
Version #	01
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available. HCC Holdings Inc. an Oatey Affiliate cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.



NO SWEAT™
Reusable Valve Wraps

Identity: "NO SWEAT VALVE WRAPS"
U.S. Patent: #6907907
SDS-2014

Material Safety Data Sheet

Section 1 - Manufacturer's Name: "NO SWEAT" - Reusable Valve Wraps

NO SWEAT™ - Reusable Valve Wraps
P.O. Box 420
Newark, Delaware 19715-0420
www.ValveWraps.com
Phone: 800-416-4610 • Fax: 302-731-0932

Chemical Product / Company Identification

Tychem® QC consists of a durable Tyvek® substrate quality - coated with polyethylene. Rugged and durable, Tychem® QC is a tough barrier fabric that resists punctures and tears. Tychem® QC remains flexible in cold temperatures as well as a wide range of upper level temperatures. Tychem® QC is the only polyethylene coated fabric backed by DuPont quality standards. Impermeable to water. Documentation is also available upon request from NO SWEAT or via www.ValveWraps.com on how Tychem® QC performs against over 80 plus other chemicals.

Die cut fiber glass insulation inserts - supplied by Owens Corning - 419-248-5694, CertainTeed Corp. - 610-341-7000, Knauf Insulation - 317-398-4434, Johns Manville - 303-978-4900, or Manson Insulation Corporation - 450-659-9101.

Product Name: Fiber Glass Wool Insulation
CAS#: Not applicable
Generic Name: Fiber Glass Wool Product
Formula: Not Available
Chemical Name: Mixture
Hazard Label: FGW-01 or FGW-01-HT or FGW-01-1099 or L1009

Company Identification

Manufacturer of Tychem® QC
DuPont
1007 Market Street • Wilmington, Delaware 19898

Phone Numbers

Product Information: 1-800-441-7515 - Outside the United States # 302-774-1000
Transport Emergency: Chemtrec 1-800-424-9300 - Outside the U.S. # 703-527-3887
Medical Emergency: 1-800-441-3637 - Outside the United States # 302-774-1000

Section 2 - Composition /Information on Ingredients

Components

Material - CAS Number - 9002-88-4 - 100%
High Density Polyethylene Fiber coated with a low Density Polyethylene Polymer
CAS # 65997-17-3 - Fiber Glass Wool - Percent - 50-98

The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

Emergency Overview

Polyethylene may be categorized as essentially non-toxic and the added coating would be very low in toxicity in the finished product. The nature of the product makes either ingestion or inhalation highly improbable. Eye contact will produce a mechanical irritation like any foreign object. Skin contact would be non-hazardous.

Fiber Glass Wool - Appearance and odor: Yellow- Pink - White fibrous glass blanket insert or formed shape without facings. No significant odor.

Products designed for high temperature applications (above 177° C /350° F) may release gases irritating to the eyes, nose and throat during initial heat-up. In tightly confined or poorly ventilated areas, use air supplied respirators during the first heat-up cycles.

Inhalation of excessive amounts of dust from the product may cause temporary upper respiratory irritation and/or congestion — if so, remove individual to fresh air environment.

Potential Health Effects

Summary

Breathing dust from this product may cause a scratchy throat, congestion, and slight coughing. When subjected to high heat and humidity, this product may release formaldehyde gas. Formaldehyde may cause skin or respiratory sensitization (allergy).

HMIS (Hazardous Materials Information System) ratings for Health - Flammability - Physical Hazard * 1-0-0

Inhalation

Irritation of the upper respiratory tract (scratchy throat), coughing and congestion may occur in extreme exposures.

Skin

Temporary irritation (itching) or redness may occur.

Ingestion

This product is not intended to be ingested (eaten). If ingested, it may cause temporary irritation to the gastrointestinal (digestive) tract.

Ears

Temporary irritation (itching) or redness may occur.

Target Organs

Nose (nasal passages), throat, lungs, skin, eyes.

Medical Conditions Aggravated by Exposure

Pre-existing chronic respiratory, skin, or eye diseases or conditions.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.

Section 4 - First Aid Measures

First Aid: Inhalation

Remove to fresh air. Drink water to clear throat, and blow nose to remove dust.

First Aid: Skin

Wash gently with soap and warm water to remove dust. Wash hands before eating or using the restroom.

First Aid: Ingestion

Rinse mouth with water to remove fibers or dust, and drink plenty of water to help reduce the irritation. No chronic effects are expected following ingestion.

First Aid: Eye Contact

Mechanical irritation - remove particle. Do not rub or scratch your eyes. Flush eyes with large amounts of clean water for 5 - 15 minutes. Seek medical help if irritation persists.

First Aid: Ears

Do not rub or scratch the ear if itching occurs. Wash gently with soap and warm water to remove dust or fibers.

Section 5 - Fire Fighting Measures

Flammable Properties

Flash Point: 330-365 degrees C. for parent polymer - coatings may decrease slightly.

Autoignition Temperatures: 625 - 660 degrees F. (330-350 degrees C)

When exposed to temperatures at or above its melting point of 275° F (135° C) Tychem® QC tends to shrink away from the heat source, if the heat source reaches the auto ignition temperature of 750° F (400° C) - Tychem® QC will burn.

DuPont Tychem® QC is rated "Class 1 - normal flammability."

Gases/vapors produced in fire from complete combustion of Tychem® QC are CO₂ and water.

Incomplete combustion yields hazardous gases/vapors including CO, acrolein, other aldehydes, ketones, fatty acids and short chain hydrocarbons.

Hazardous gases/vapors produced in fire are CO, CO₂, acrolein, other aldehydes, flammable hydrocarbons,

Fire and Explosion Hazards:

Fiber Glass Wool Inserts

Flash Point: Not applicable

Method Used: Not applicable

Upper Flammable Limit (UFL): Not applicable

Lower Flammable Limit (LFL): Not applicable

Flammability Classification: Not determined

Auto Ignition: Not determined

Rate of Burning: Not determined

General Fire Hazards

There is no potential for spontaneous fire or explosion.

Extinguishing Media

Carbon dioxide (CO₂), water, water fog, dry chemical.

Fire Fighting Equipment/Instructions

No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

NFPA Ratings for Health - Flammability - Reactivity are: 1 - 0 - 0

Extinguishing Media

Water, Water Fog, Foam, Dry Chemical, CO₂.

Fire Fighting Instructions

Wear self-contained breathing apparatus.

Section 6 - Accidental Release Measures

Safeguards (Personnel)

Spill Clean up

Recover undamaged and minimally contaminated material for reuse and reclamation.

Accidental Release Measures

Material which is too contaminated for use should be containerized for disposal.

Containment Procedures

Pick up large pieces. Vacuum dusts. If sweeping is necessary, use a dust suppressant such as water. Avoid the generation of dusts during clean up.

Section 7 - Handling and Storage

Handling (Personnel)

Avoid contact with eyes.

Handling (Physical Aspects)

Keep away from direct heat, sparks and flames.

Storage

Material should be kept dry, and protected from moisture. Do not mix with strong oxidizing agents and strong acids. Do not store with strong oxidizing acids.

Protect product from damage during shipment and storage. Keep away from excessive heat and flames. Protect from exhaust gases from internal combustion engines, prolonged exposure will cause yellowing of outer wrap and edges.

Section 8 - Exposure Guidelines/Personal Protection

Applicable Exposure Limits

High Density Polyethylene Fiber

PEL (OSHA): None Established

TLV (ACGIH): None Established

AEL® (DuPont): 10 mg/m³, 8 & 12 Hr. TWA, total dust
5 mg/m³, 8 & 12 Hr. TWA, respirable dust.

Physical and Chemical Properties

Physical Data

Melting Point: - 135° C (-275° F) @ 760 mm Hg

% Volatiles: <0.1 WT% @ 25° C (77° F)

Solubility in Water: INSOLUBLE

Odor: Odorless

Form: Fabricated Valve Wraps or Rolls

Color: White, Gray, Black, Yellow

Specific Gravity: -1.0

Stability and Reactivity

Chemical Stability

Stable.

Aromatic hydrocarbons, gasoline, lubricating oils, halogenated hydrocarbons will soften and swell the base polymer.

Incompatibility with other Materials

Incompatible with strong oxidizing agents and strong acids.

Decomposition

Decomposition temperature : 335° C (635° F)

Hazardous gases/vapors produced are CO, CO₂, acrolein, other aldehydes, ketones and hydrocarbons.

Polymerization

Polymerization will not occur.

Ecological Information

Ecotoxicological Information

Aquatic Toxicity

Non- toxic — insoluble

Disposal Considerations

Waste Disposal

Treatment, Storage, Transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and local regulations.

Disposal off site by incineration or landfill in compliance with local, State and Federal regulations.

A. General Product Information

Fiber Glass Wool inserts, OSHA voluntary Health and Safety Partnership Program (HSPP): 1 f/cc TWA for fibers longer than 5 µm with a diameter less than 3 µm.

Protective equipment should be used as necessary to prevent irritation of the throat, eyes, and skin, and to keep exposures below the applicable exposure limits identified in Sect.8.

B. Component Exposure Limits

Fiber Glass Wool (65997-17-3)

ACGIH: 1 f/cc TWA (respirable fibers: length > 5µm, aspect ratio equal to or greater than 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase - contrast illumination.)

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Safety glasses with sideshields are recommended to keep dust out of the eyes.

Personal Protective Equipment : Ears

Use ear protection (earplugs, hood, or earmuffs) to prevent airborne dust or fibers from entering the ear.

Personal Protective Equipment: Skin

Leather or cotton gloves can be worn to prevent skin contact and irritation. Barrier creams may also be used to reduce skin contact and irritation caused by fiber glass. Wear a cap, a loose fitting, long sleeved shirt and long pants to protect skin from irritation. Clothing should be washed separately from other clothes and the washer should be rinsed thoroughly (run empty for a complete wash cycle). This will reduce the chances of fiber glass being transferred to other clothing.

Section 9 - Toxicological Information

Acute Toxicity

General Product Information

Dust from this product is a mechanical irritant, which means that it may cause temporary irritation or scratchiness of the throat, and/or itching of the eyes and skin.

Products designed for high temperature applications (above 177° C/350° F) may release gases irritating to the eyes, nose and throat during initial heat-up. In tightly confined or poorly ventilated areas, use air supplied respirators during the first heat-up cycles.

The data in this Material Safety Data Sheet relates only to the specific material designated herein. This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.



Safety Data Sheet Proto Corporation

Section 1 – Product and Company Information

Product Name: Proto ® PVC Fitting Covers and Jacketing

Proto Corporation
10500 47th Street North
Clearwater, FL 33762

Emergency Telephone Number:

CHEMTREC: 800-424-9300 or 1-703-741-5500

Customer Information:

800-875-7768

Section 2 – Hazardous Identification

Hazardous Components

GHS Classification

Not a hazardous substance or mixture

GHS Label element

Not a hazardous substance or mixture

No other known hazards

Section 3 – Composition and Information on Ingredients

General Product Description:

Thermoformed plastic fitting covers of varying shapes and sizes, including jacketing.

Section 4 – First Aid Measures

First Aid – Inhalation:

None Required

First Aid – Skin:

None Required

First Aid – Ingestion:

None Required

First Aid – Eyes:

None Required

First Aid – Ears:

None Required

Section 5 – Firefighting Measures

Flash Point: Not applicable

Upper Flammable Limit (UFL): Not applicable

Auto Ignition: Not determined

Rate of Burning: Not determined

General Fire Hazards:

There is no potential for spontaneous fire or explosion. If exposed to fire, product may melt and drops of molten product may cause burns.

Extinguishing Media:

Carbon Dioxide (CO₂), Dry Chemical

Fire Fighting Equipment/Instructions:

No special procedures are expected to be necessary for this product. Normal firefighting procedures should be followed to avoid inhalation of smoke and gases.

Method Used: Not applicable

Lower Flammable Limit (LFL): Not applicable

Flammability Classification: Not determined

Section 6 – Accidental Release Measures

Clean-Up Procedures,

Vacuum up dusts.

Section 7 – Handling and Storage

Handling Procedure

Handle in accordance with good industrial hygiene and safety practices.

Storage Procedures

Warehouse storage should be in accordance with packaging directions. Material should be kept dry and in original packaging.

Section 8 – Exposure Controls and Personal Protective Equipment

A: Component Exposure Limits:

This material has no components listed.

B: Personal Protective Equipment:

- i. **Personal Protective Equipment: Eyes and Face**
None required
- Personal Protective Equipment: Ears**
None required
- ii. **Personal Protective Equipment: Skin**
None required
- iii. **Personal Protective Equipment: Respiratory**
None required
- iv. **Ventilation:**
None required
- v. **Personal Protective Equipment: General**
None required

Section 9 – Physical/Chemical Properties

Appearance: Thermoformed plastic fitting covers
of varying colors shapes and sizes,
including jacketing.

Odor: No Odor

Physical State: Solid

Vapor Pressure: Not determined

Boiling Point: Not determined

Solubility (H₂O): Nil

Freezing Point: Not applicable

Percent Volatile: 0

pH: Not determined

Vapor Density: Not determined

Melting Point: Not determined

Specific Gravity: Variable

Evaporation Rate: Not applicable

VOC: Not determined

Section 10 – Stability and Reactivity Information

Stability

These products are not reactive.

Hazardous Decomposition

This product will not decompose at temperatures > 300°C. May form carbon dioxide and carbon monoxide.

Hazardous Polymerization

Will not occur.

Section 11 – Toxicological Information

Acute Toxicity

A. General Product Information

If dust evolves from this product during use, it may cause temporary mechanical irritation or scratchiness of the throat and/or itching of the eyes and skin.

B. Component Analysis

This material has no components listed.

Section 12 – Ecological Information

Ecotoxicity

A. General Product Information

No data available for this product.

B. Component Analysis – Ecotoxicity – Aquatic Toxicity

This material has no components listed.

Section 13 – Disposal Considerations

US EPA Waste Number and Description

A. General Product Information

This product is not expected to be a hazardous waste when it is disposed of according to the U.S Environmental Protection Agency (EPA) under Resource Conservation and Recovery (RCRA) regulations. Product characterization after use is recommended to ensure proper disposal under Federal and/or State requirements.

B. Component Waste Numbers

This material has no component listed.

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Section 14– Transport Information

International Transport Regulations

These products are not classified as dangerous goods according to international transport regulations.

Section 15 – Regulatory Information

US Federal Regulations

A. General Information

SARA 311/312. The product is not classified as hazardous under SARA 311/312

B. Component Analysis

This material has no components listed.

State Regulations

A. General Product Information

Other State regulation may apply. Check individual state requirements.

Component Analysis - State

This material has no components listed.

B. TSCA Status

This material has no components listed.

International Regulations

A. General Information

These products are considered articles under both U.S and international product regulations and, as such, these products do not require registration or notification on the various country-specific inventories.

B. Component Analysis – WHMIS IDL

This material has no components listed.

WHMIS Classification

This is not a WHMIS controlled product. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations. This SDS contains all the information required by the Controlled Products Regulations.

Section 16 – Other Information

Other Information

Prepared by:

Proto Corporation

10500 47th Street North

Clearwater, FL 33762

This SDS document is written and published by Proto Corporation to conform to OSHA standard CFR29 1910 and conforms to GHS guidelines.

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Material Safety Data Sheet
PLEASE SEE MANUFACTURER'S WEBSITE
FOR THE MOST CURRENT VERSION OF ALL
MATERIAL SAFETY DATA SHEETS

Section 1-Chemical Product and Company Identification

Product Name: B-10 LAG

Manufacturer Information:

Sound Seal

50 H.P. Almgren Dr.

Agawam, MA 01001

Telephone: 413-789-1770

Emergency Information: 800-569-1294

Internet address: <http://www.soundseal.com>

Date Prepared:

Section 2-Composition/ Information on Ingredients

CAS #	Hazardous Component	OSHA PEL	ACGIH TLV	OTHER LIMITS	%
	Barium Sulfate*		10 mg/m ³ total dust		>50%

*Although present in the formulation, the barium sulfate is bound in the PVC compound and not likely to be a dust hazard.

Section 3-Physical/Chemical Properties

Physical State	Solid	Solubility in water	Negligible
Boiling point	N/A	Specific Gravity (H ₂ O=1)	2.06
Vapor Pressure (mm Hg.)	N/A	Melting Point	Unknown
Freezing Point	N/A	PH	N/A
Percent Volatile	N/A	VOC	N/A
Vapor Density (AIR=1)	N/A	Evaporation rate	N/A
Appearance and odor: Black PVC sheet with reinforced, aluminized facing. There is no noticeable odor.			

Section 4-Fire Fighting Measures

Flash Point: N/A

Method Used:

Upper Flammability Limit (UFL): N/A

Lower Flammability Limit (LFL): N/A

Auto Ignition: N/A

Flammability classification: Class A (or 1)

Rate of Burning: N/A

General Fire Hazards:
unknown

Extinguishing Media:
CO2, water, water fog and dry chemical

Fire Fighting Equipment/Instructions:
No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

Section 5-Health Hazard Data

Summary: None known

Primary routes of entry: None known

Target Organs: None known

Inhalation: not an expected route of entry

Skin: not an expected route of entry

Absorption: not an expected route of entry

Ingestion: not an expected route of entry

Eyes: not an expected route of entry

Medical Conditions aggravated by exposure: none known

Health Hazards (Acute & Chronic): none known

Section 4-Fire Fighting Measures

Flash Point: N/A

Method Used:

Upper Flammability Limit (UFL): N/A

Lower Flammability Limit (LFL): N/A

Auto Ignition: N/A

Flammability classification: Class A (or 1)

Rate of Burning: N/A

General Fire Hazards:
unknown

Extinguishing Media:
CO2, water, water fog and dry chemical

Fire Fighting Equipment/Instructions:
No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

Section 5-Health Hazard Data

Summary: None known

Primary routes of entry: None known

Target Organs: None known

Inhalation: not an expected route of entry

Skin: not an expected route of entry

Absorption: not an expected route of entry

Ingestion: not an expected route of entry

Eyes: not an expected route of entry

Medical Conditions aggravated by exposure: none known

Health Hazards (Acute & Chronic): none known

Section 6-First Aid Measures

First Aid:

Notes to Physician:

Section 7-Accidental release measures

Containment Procedures: pick up large pieces

Clean-Up Procedures:

Section 8- Handling & Storage

Handling Procedures: wastes are not hazardous as defined by the resource and conservation and recovery act.

Storage Procedures: store indoors, out of direct sunlight.

Section 9-Exposure Controls/Personal Protection

Ventilation: general ventilation should suffice, if cutting than local exhaust may be required. If ventilation is not available, a respirator should be used.

Personal Protective Equipment:

Section 10-Chemical Stability & Reactivity Information

Stability	Unstable		Conditions to Avoid
	Stable	x	None known

Incompatibility (Materials to Avoid)

None known

Hazardous Decomposition or Byproducts

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	x	None known

Comments:

Section 11-Disposal Considerations

Disposal Method:

Comply with state and local regulations for disposal of these products

Comments:

Section 12-Transportation Information

DOT Information:
Not listed

Section 13-Other Information

Ulbrich Stainless Steels & Special Metals, Inc.

Safety Data Sheet (SDS) 003

SECTION 1: IDENTIFICATION

Product Identifier: Carbon Steels designated as follows: AISI-SAE 1050; 1006; 1008; 1010; 1040; 1065; 1070; 1074; 1075; 1095

Notice on Coated Materials: This SDS is for uncoated materials. Ulbrich occasionally has material coated for customers. Purchasers of coated materials should assure that they have the SDS for the coated material that they purchase.

Product Form: Metal Alloy/Mixture

Intended Use of the Product: Carbon steel, various uses

Supplier's Details: Ulbrich Stainless Steels & Special Metals, Inc.

153 Washington Avenue, P.O. Box 294,

North Haven, CT USA, 06473-1191

Phone Number (203) 239-4481 • (800) 243-1676

SDS Technical Contact Weekdays (203) 265-8299

FAX: (203) 239-7479 • E-Mail: information@ulbrich.com

Chemtrec 800-424-9300

Emergency Telephone Number (203) 239-4481

SECTION 2: HAZARDS IDENTIFICATION

Classification (GHS-US): Most products covered by this SDS are articles and, as such, are not considered hazardous under the 2012 OSHA Hazardous Communications Standard (29 CFR 1910.1200). Materials resulting from machining these products may be considered hazardous under the 2012 OSHA Hazardous Communications Standard (29 CFR 1200).

Label Elements: Signal word, hazard statement(s), symbols and precautionary statement(s):

SYMBOLS	HAZARD CLASSIFICATION	SIGNAL WORD	HAZARD STATEMENTS
	Carcinogenicity - 2 Specific Target Organ Toxicity (STOT) Repeat Exposure -1	Danger	Dust/fumes suspected of causing cancer via inhalation. Inhalation of dust/fumes causes damage to respiratory tract through prolonged or repeated exposure.
	Skin Sensitization - 1		Dust/fumes may cause an allergic skin reaction.
	Eye Irritation - 2B		Causes Eye Irritation

PRECAUTIONARY STATEMENT(S)

Do not handle until all safety precautions have been read and understood.

Avoid breathing dust/fumes.

Use personal protective equipment as required.

If exposed or concerned: Get medical advice/attention.

STORAGE	DISPOSAL
Store locked up. Store away from strong oxidizers, acids and incompatible materials. Dust and/or powders may form explosive mixtures with air or fluids. Store in accordance with federal/ provincial/state or local regulations.	Metal scrap should be recycled whenever possible Dispose of in accordance with federal, state and other regulations

Medical Conditions Aggravated By Exposure: If excessive concentrations of dust or welding fume are inhaled, individuals with impaired pulmonary function, disease, respiratory condition, etc. may incur further damage. Individuals who may have an allergy or sensitivity to metals may encounter skin rash or dermatitis. If prior damage or disease to neurological, circulatory, hematologic or renal systems has occurred, proper screening/examinations should be conducted on exposed individuals.

Hazards not otherwise classified: None Known, No data available

Unknown acute toxicity statement (mixture): None Known, No data available

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

STANDARD CARBON STEELS

ALLOY	UNS No.	CONSTITUENT(S)		% Maximum unless otherwise shown			
AISI-SAE		C	Mn	Fe	P	Other	Other
1006	G10060	0.08	0.25/0.40	BAL	P 0.04		
1008	G10080	0.10	0.30/0.50	BAL	P 0.05		
1010	G10100	0.08/0.13	0.30/0.60	BAL	P 0.04		
1040	G10400	0.36/0.44	0.60/0.90	BAL	P 0.04		
1050	G10500	0.4/0.55	0.60/0.90	BAL			
1065	G10650	0.60/0.70	0.60/0.90	BAL			
1070	G10700	0.65/0.75	0.60/0.90	BAL			
1074	G10740	0.70/0.80	0.50/0.80	BAL			
1075	G10750	0.70/0.80	0.40/0.70	BAL			
1095	G10950	0.90/1.03	0.30/0.50	BAL			
CAS Number		7440-44-0	7439-96-5	7439-89-6	7723-14-0		

BAL = Balance Min = minimum Max = maximum x/x = minimum to maximum

All commercial metals may contain trace amounts of various elements (less than 0.1%) in addition to those specified. These small quantities frequently originate in the raw material used.

4. FIRST AID MEASURES

Description of necessary measures:

Inhalation: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed, concerned, experiencing respiratory symptoms, or feel unwell: Get medical advice/attention or call a poison center or doctor/physician.

Eye Contact: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if in eyes: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Do not allow victim to rub or keep eyes tightly shut. Continue rinsing. If eye irritation persists, get medical advice/attention.

Skin Contact: If on skin: Wash thoroughly after handling. Wash with plenty of water. If irritation or rash occurs: Get medical advice, attention. Skin cuts and abrasions can be treated by standard first aid or medical treatment. Quickly remove dust contaminated clothing but do not shake clothing.

Ingestion: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. If exposed, concerned or feel unwell: Get medical advice/attention.

Most important symptoms/effects, acute and delayed (chronic):

Symptoms: May cause allergic skin reaction. May cause acute gastrointestinal effects if swallowed.

Note to Physicians: Treat symptomatically

5. FIRE FIGHTING MEASURES

FLASH POINT (WITH TEST METHOD)

None

FLAMMABLE (EXPLOSIVE) LIMITS VV/%

LEL: None

UEL: None

Suitable (and unsuitable) Extinguishing Media: Not Applicable for solid carbon steel as sold/shipped. Use extinguishers appropriate for surrounding materials.

Specific Hazards arising from the chemical: Not Applicable for solid carbon steel as sold/shipped. When burned, toxic smoke, fume and vapor may be emitted.

Special protective equipment and precautions for fire-fighters: Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

6. ACCIDENTAL MATERIAL RELEASE OR SPILL CONTROL MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Not Applicable for solid carbon steel as sold/shipped. For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust.

Methods and materials for containment and clean up: Not Applicable for solid carbon steel as sold/shipped. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

7. HANDLING AND STORAGE

Handling Precautions	Wear cut resistant gloves and clothing to avoid cuts. Metal in coiled form may be under tension and represent a source of potential energy due to the tension induced by coiling; it may suddenly uncoil to try to lay flat in a long strip when banding is cut or other forces are released. Measures should be taken to ensure that uncoiling will not occur. Machining of alloys may result in fine turnings, chips, dust, or fumes. Small diameter materials may be combustible or flammable. Keep this material away from any source of ignition. Keep fines and turnings completely dry or very wet (more than 25% water content by weight) for handling safety. Explosions can result from ignition of powder or machining fines containing moisture. Fires and explosions can result from dispersing fines and dust in air, especially if confined. Avoid these conditions. Avoid dust inhalation and eye or skin contact. Wear personal protective equipment to prevent contact with skin and eyes (Section 8). Practice good personal hygiene after handling, especially before eating, drinking, smoking, or applying cosmetics.

Storage Precautions	In solid form this material poses no special problems. Avoid breathing dust or fume. If the use of this material produces dust or fume, use appropriate ventilation controls, personal protective equipment or both.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation Local exhaust ventilation should be used to control exposure to airborne dust and fume emissions near the source (during crushing, grinding, welding, etc.). Assure exposure is less than regulatory limits.

Respiratory Protection None required as shipped, if processing emits welding fumes, airborne dusts or other hazards use NIOSH approved respirator as specified by an industrial hygienist or safety professional. Obtain medical approval for users of respirators. Use a welding fume respirator or air supplied respirator where local exhaust or ventilation does not keep exposure below overexposure limits.

Eye Protection Wear safety glasses when risk of eye injury is present particularly during machining, grinding, welding, powder handling, etc. Contact lenses should not be worn if working with metal dusts and powders.

Skin Protection Wear gloves as necessary to prevent metal cuts, skin abrasions and skin contact. Protective clothing such as arm, foot, body protection etc., may be required during handling operations as appropriate for the exposure.

Recommended Monitoring Procedures No medical surveillance required while working with metal in massive form. If processing creates dust, fume or other hazard, conduct industrial hygiene evaluation of processes. Follow requirements for medical surveillance of product constituents, compounds and fume if welding fume, dust or other hazards are created by customer processing or handling.

Occupational Exposure Limits (OELs): This product in the physical form it is sold does not present an inhalation hazard. However, operations including, but not limited to, cutting, welding, and grinding may produce fumes and/or particulates. The following exposure limits are for the constituents of the materials under these and similar processes.

Constituents	OSHA PEL ¹	ACGIH TLV ²
OSHA ACGIH Particulate:	15 mg/m ³ , total dust (PNOR)	10 mg/m ³ (as inhalable fraction, PNOS)
No Limit Established	5.0 mg/m ³ , respirable fraction (PNOR)	3.0 mg/m ³ (as respirable fraction, PNOS)
Carbon (C)	N/A	N/A
Iron (Fe)	10 mg/m ³ (as iron oxide fume)	5.0 mg/m ³ (as iron oxide dust and fume)
Manganese (Mn)	"C" 5.0 mg/m ³ (as Fume & Mn compounds)	0.2 mg/m ³
Phosphorus elemental (P)	0.1 mg/m ³	0.02 ppm (0.1mg/m ³)

NE - None Established, if none established, see "Particulate Where No Limit Has Been Established" in first row or specific compounds created by welding, etc.

Notes:

1. OSHA PELs (Permissible Exposure Limits) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A ("C") designation denotes a Ceiling Limit, which should not be exceeded during any part of the workday unless otherwise noted. A Short Term Exposure Limit (STEL) is a 15-minute exposure, which should not be exceeded.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. ACGIH TLVs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
3. The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH REL): Compendium of Policy and Statements, NIOSH, Cincinnati, OH (1992). NIOSH is the federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
4. Inhalable fraction. The concentration of inhalable particulate is to be determined from the fraction passing a size-selector per OSHA, ACGIH and other regulatory agencies.
5. PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts not listed specifically by substance name are covered by the PNOR limit which is the same as the inert or nuisance dust limit.
6. Respirable fraction - The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2014 TLVs® and BEIs® Appendix D, paragraph C
7. PNOS (Particulates Not Otherwise Specified). Particles not specified are covered by the PNOS limit.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid	APPEARANCE AND COLOR: Metallic Gray Color
ODOR: Odorless	ODOR THRESHOLD: Not Available
pH: Not Available	EVAPORATION RATE: Not Available
BOILING Range: Not Available	INITIAL BOILING POINT: Not Available
MELTING POINT: 1000°F - 3200°F	VAPOR PRESSURE (mmHg): Not Available
SPECIFIC GRAVITY (H ₂ O=1): 7.5 - 8.0	VAPOR DENSITY (AIR=1): Not Available
EVAPORATION RATE: Not Available	% VOLATILES BY VOLUME: None
FLASH POINT: None	FLAMMABLE LIMITS V/V% LEL: None UEL: None
RELATIVE DENSITY: Not Available	PARTIAL COEFFICIENT: N-OCTANOL/ WATER: Not Available
SOLUBILITY IN WATER = None	AUTO-IGNITION TEMPERATURE: Not Available
VISCOSITY: Not Available	DECOMPOSITION TEMPERATURE: Not Available

10. STABILITY AND REACTIVITY

REACTIVITY	Hazardous reactions should not occur under normal conditions.
STABILITY/ CHEMICAL STABILITY	These alloys are stable materials under normal handling and storage conditions.
CONDITIONS TO AVOID	Avoid strong acids or bases. Avoid creating or spreading dust. Sparks, heat, open flame and other sources of ignition.
INCOMPATIBLE MATERIALS	Strong acids, strong bases, strong oxidizers. Alkalies. Metal oxides. Water, humidity. Corrosive substances in contact with metals may produce flammable hydrogen gas.
HAZARDOUS DECOMPOSITION PRODUCTS	Solid metal will not decompose without combustion and/or chemical reaction. Elemental metals, metal oxides, metal compounds including chromium compounds, acids.
POSSIBILITY OF HAZARDOUS REACTIONS	Should not occur.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product	Specific Target Organ Toxicity (Single Exposure): Not classified
LD50 and LC50 Data: Not available	Symptoms/injuries after inhalation: Inhalation of dusts/fumes can cause metal fume fever. Symptoms include metallic or sweet taste in the mouth, sweating, headache, throat irritation, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness, fatigue, and shortness of breath. Dust may cause irritation to, nose, throat and lungs.
Skin Corrosion/Irritation: Not classified	Symptoms/injuries After Skin Contact: May cause an allergic skin reaction. Dust from physical alteration of this product causes skin irritation. Causes severe skin burns.
Aspiration Hazard: Not classified	Contact with fumes or metal powder will irritate skin. Contact with hot, molten metal will cause thermal burns. Dust may cause irritation in skin folds or by contact in combination with tight clothing. Danger from flying particles or slag is possible.
Carcinogenicity: Not classified.	Symptoms/injuries after eye contact: dust may cause mechanical eye & other irritation.
Reproductive Toxicity: Not classified.	
germ Cell Mutagenicity: Not classified	
Teratogenicity: Not classified	
Serious Eye Damage/Irritation: Not classified	
Respiratory or Skin Sensitization: Not classified.	

Symptoms/injuries after ingestion: Ingestion is likely to be harmful or have adverse effects. Specific Target Organ Toxicity (Repeated Exposure): Not classified.		Chronic Symptoms: In massive form, no hazard exists. If physically altered to present slivers, dusts, fumes, etc.: Inhalation of iron oxide fumes undergoing decomposition may cause irritation and flu-like symptoms. Manganese: Chronic exposure can cause inflammation and scarring of the lungs.	
12. ECOLOGICAL INFORMATION			
In solid form these alloys pose no special environmental problems. Metal powders or dusts may have an impact on air, land and water quality. Airborne emissions, spills, and releases to the environment (discharge to streams, sewer systems, surface soil, etc.) should be controlled immediately. Manganese undergoes complex geochemical cycling, and can accumulate in the top layer of sediment in lakes. In water, molybdenum will precipitate out with natural calcium. Soil levels should not exceed 50 ppm to avoid problems with livestock.			
13. DISPOSAL CONSIDERATIONS			
Whenever possible, recover alloys for reuse or recycling. Solid metal is not a hazardous waste per U.S. E.P.A. If material has been processed, analyze and dispose of waste material in accordance with local, state, or federal regulations. For specific labeling, packing, storage, transportation, and disposal procedures, contact an Environmental Engineer or consultant familiar with waste disposal regulations.			
14. TRANSPORT INFORMATION			
As sold, these solid alloys are not regulated by the U.S. Department of Transportation or the International Air Transport Association. Note: metals transported in coiled form may be under tension and represent a source of potential energy due to the tension induced by coiling; it may uncoil to try to lay flat when banding is cut or other forces are released; measures should be taken to ensure that uncoiling will not occur.			
The following information should be used by individuals with "Function-specific Training" required by U.S. Department of Transportation 49 CFR 172.704, and Dangerous Goods Regulations published by the International Air Transport Association (IATA).			
SHIPPING NAME	Not Available for solid alloys. If alloy dust or powder is created, it may be a flammable solid or spontaneously combustible material (DOT hazard class 4.1 and 4.2, respectively). A sample of metal powder should be tested according to the U.N. manual of tests and criteria. See 49 CFR 173.124 (a) and (b).		
IDENTIFICATION NUMBER	Not Available (Determine by test results)		
HAZARD CLASS	Not Available (Determine by test results)		
LABEL(S) REQUIRED	Not Available (Determine by test results)		
15. REGULATORY INFORMATION			
SPECIFIC U.S. EPA REGULATIONS	Toxic Substance Control Act: Components of this material (see section 3) are listed in the TSCA inventory. CERCLA: Components of this material (section 3) are listed as Hazardous Substances EPA Superfund Amendment and Reauthorization Act (SARA) of 1986 Section 311/312(SARA Title III): Components of this material (section 3) are listed in SARA Title III, Section 311/312 EPA, SARA Section 313: Components of this material (section 3) are listed Section 313 and subject to Toxic Release Inventory reporting. SARA Title III Hazard Categorization: Dust and fume are categorized as an immediate (acute) health hazard and a delayed (chronic) health hazard as defined by 40 CFR 370. Product is not categorized as a fire hazard, reactivity hazard or pressure release hazard.		
16. OTHER INFORMATION			
Revision Date: August 5, 2015			
This information is designed only as guidance for safe handling, use, storage, transportation, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Information contained herein is believed to be true and accurate at the date of its publication, but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material, or the results to be obtained from the use thereof. Compliance with all applicable Federal, State, and local laws and regulations remain the responsibility of the user.			
Trademarks: Several materials described in these Safety Data Sheets are proprietary alloys produced under license from various manufacturers. They are identified by the following subscript numbers:			
¹ Registered Trademark of AK Steel Corporation		⁴ Registered Trademark of ATI Allegheny Companies	
² Registered Trademark of Carpenter Technology Corporation		⁵ Registered Trademark of Haynes International, Inc.	
³ Registered Trademark of Special Metals Corporation		⁶ Registered Trademark of United Technologies Corporation	

Ulbrich Stainless Steels & Special Metals, Inc.
Safety Data Sheet (SDS) 004

SECTION 1: IDENTIFICATION

Product Identifier: Copper, Brass and Phosphor Bronze Alloys, designated as follows: ETP Copper and OFHC Copper (UNS 11000 and UNS C10200); Brass (UNS C21000, C22000, C22600, C23000 C24000 C26000 C27200); Phosphor Bronze (UNS C50500, C50700, C51000, C51100, C51900, C52100 and C52400)

Intended Use of the Product: Metal products, various uses

Supplier's Details: Ulbrich Stainless Steels & Special Metals, Inc.

153 Washington Avenue, P.O. Box 294,
 North Haven, CT USA, 06473-1191
 Phone Number (203) 239-4481 • (800) 243-1676
 FAX: (203) 239-7479 • E-Mail: information@ulbrich.com
 Emergency Telephone Number (203) 239-4481; Chemtrec 800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

Classification (GHS-US): Most products covered by this SDS are articles and, as such, are not considered hazardous under the 2012 OSHA Hazardous Communications Standard (29 CFR 1910.1200). Materials resulting from machining these products may be considered hazardous under the 2012 OSHA Hazardous Communications Standard (29 CFR 1200).

Specific Target Organ Toxicity (Repeated Exposure) - Category 1

Eye Damage/Irritation - Category 2B

Respiratory Sensitizer - Category 1

Skin Sensitizer - Category 1

Germ Cell Mutagenicity - Category 2

Carcinogenicity - Category 1B

Toxic to Reproduction - Category 1A

Label Elements:

Emergency Overview

Signal Word: Danger

Hazard statements:

May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 May cause an allergic skin reaction.
 Suspected of causing genetic defects.
 May cause cancer.
 May damage fertility or the unborn child.
 Causes damage to respiratory system through prolonged or repeated exposure.
 Harmful if swallowed
 Causes eye irritation.



Appearance Various massive product

Physical state Solid

Odor Odorless

Precautionary Statements - Prevention

Wear protective gloves/protective clothing/eye protection/face protection.
 Do not breathe dust/fume.
 In case of inadequate ventilation wear respiratory protection.
 Contaminated work clothing should not be allowed out of the workplace.
 Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Avoid release to the environment
 Take off and wash contaminated clothing before reuse.

Precautionary Statements - Response

In case of fire: Use Class D agent to extinguish.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical advice/attention.
 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a poison center/doctor.
 IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
 If exposed or concerned: Get medical advice/attention.
 Get medical advice/attention if you feel unwell.

STORAGE

Store locked up. Store away from acids and incompatible materials.
 Store in accordance with federal/state or other regulations.
 It and/or powders may form explosive mixtures with air or fluids.

DISPOSAL

Metal scrap should be recycled whenever possible
 Dispose of in accordance with applicable federal, state and other regulations

Hazards not otherwise classified: None Known, No data available

Unknown acute toxicity statement (mixture): None Known, No data available

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

ALLOY	UNS No.	CONSTITUTENT(S) % Nominal unless otherwise shown.				
		Cu	Sn	Zn	Pb	P
Phosphor Bronze 505	C50500	98.75	1.25	<0.3	0.0-0.05	<0.35
Phosphor Bronze 507	C50700	98	2	<0.3	0.0-0.05	<0.35
Phosphor Bronze 510	C51000	95	5	<0.3	0.0-0.05	<0.35
Phosphor Bronze 511	C51100	96	4	<0.3	0.0-0.05	<0.35
Phosphor Bronze 519	C51900	94	6	<0.2	0.0-0.05	<0.15
Phosphor Bronze 521	C52100	92	8	<0.2	0.0-0.05	<0.35
Phosphor Bronze 524	C52400	90	10	<0.2	0.0-0.05	<0.35
ETP Copper	C11000	>99.9				
Oxygen Free Copper	C10200	>99.9				
Brass 210	C21000	95		4-6	0.0-0.05	
Brass 220	C22000	90		9-11	0.0-0.05	
Brass 226	C22600	88		11-14	0.0-0.05	
Brass 230	C23000	85		14-16	0.0-0.05	
Brass 240	C24000	80		18.5-21.5	0.0-0.05	
Brass 260	C26000	70		30	0.04-0.07	
Brass 272	C27200	63		37	0.05-0.08	
CAS Number		7440-50-8	7440-31-5	7440-66-6	7439-92-1	7723-14-0

> Greater Than

< Less Than

x-x = minimum to maximum

All commercial metals may contain trace amounts of various elements (less than 0.1%) in addition to those specified. These small quantities frequently originate in the raw material used.

4. FIRST AID MEASURES

Eye Contact:	Immediately flush out fume and dust particles with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation develops, call a physician at once.
Skin Contact:	If exposed to dust or fumes, wash skin with plenty of water. Remove contaminated clothing and shoes and launder before reuse. If skin irritation or rash develops and persists or recurs, get medical advice/attention.
Inhalation:	If symptoms of lung irritation occur (coughing, wheezing or breathing difficulty), remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical advice/attention.
Ingestion:	Not a likely route of exposure for finished metal alloy. If dust is ingested, immediately drink water to dilute. Consult a physician if symptoms develop.

Description of necessary measures:

Inhalation: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed, concerned, experiencing respiratory symptoms, or feel unwell: Get medical advice/attention or call a poison center or doctor/physician.

Eye Contact: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if in eyes: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Do not allow victim to rub or keep eyes tightly shut. Continue rinsing. If eye irritation persists, get medical advice/ attention.

Skin Contact: If on skin: Wash thoroughly after handling. Wash with plenty of water. If irritation or rash occurs: Get medical advice/ attention. Skin cuts and abrasions can be treated by standard first aid or medical treatment. Quickly remove dust contaminated clothing but do not shake clothing.

Ingestion: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. If exposed, concerned or feel unwell: Get medical advice/attention.

Note to Physicians: There is no specific antidote to the active ingredients in this product; use symptomatic treatment. Refer to Section 11-TOXICOLOGY INFORMATION.

Immediate Medical Attention and Special Treatment: None Known

5. FIRE FIGHTING MEASURES

FLASH POINT (WITH TEST METHOD)	None
FLAMMABLE (EXPLOSIVE) LIMITS VV%	LEL: None UEL: None
EXTINGUISHING MEDIA	Not flammable in the form of this product as distributed. Flammable as finely divided pieces resulting from processing of this product. Type D fire extinguisher. Carbon dioxide is not effective in extinguishing burning metals.
SPECIAL FIREFIGHTING PROCEDURES	Do not spray water on burning metal as an explosion may occur. To extinguish a metal fire, smother with dry sand, salt (NaCl) or other class "D" fire extinguishing powder.
UNUSUAL FIRE AND EXPLOSION HAZARDS	No unusual fire or explosion hazards from solid alloys in massive form. Dust, chips, thin strips, etc. created by grinding or processing can ignite if a substantial number of small particles are dispersed or adequate ignition source is present. The hazard increases with finer particles. An explosion may follow a fire initiated in a mass of wet metal fines. The explosive characteristics of such material is caused by the steam and hydrogen generated within the burning mass. Metals may react exothermically with acids and oxidizers. Do not spray water on burning metal as a violent explosion may result. In molten state: reacts violently with water (moisture).
HAZARDOUS COMBUSTION PRODUCTS	Various metal oxides are hazardous. Also, may cause metal fume fever.
INCOMPATIBILITY (MATERIALS TO AVOID)	Strong acids, strong bases, strong oxidizers. Alkalis. Metal oxides. Water, humidity. Corrosive substances in contact with metals may produce flammable hydrogen gas.

6. ACCIDENTAL MATERIAL RELEASE OR SPILL CONTROL MEASURES

In solid form this material poses no special clean-up problems. If this material is in powder or dust form, do not dry sweep. Clean-up should be conducted with a grounded vacuum system utilizing high efficiency particulate air (HEPA) filtration. Caution should be taken to minimize airborne generation of powder or dust and avoid contamination of air, land and water. Prevent entry to sewers and public waters. Cleanup personnel should protect against dust inhalation and skin or eye contact, follow handling precautions below, and use non-sparking tools. Properly label all materials collected in waste container. Follow applicable OSHA regulations (29 CFR), EPA regulations (40 CFR), Canadian Workplace Hazardous Materials Information System (WHMIS) Regulations, and other regulatory requirements.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS	Wear cut resistant gloves and clothing to avoid cuts. Metal in coiled form may be under tension and represent a source of potential energy due to the tension induced by coiling; it may suddenly uncoil to try to lay flat in a long strip when banding is cut or other forces are released. Measures should be taken to ensure that uncoiling will not occur. Machining of alloys may result in fine turnings, chips, dust, or fumes. Small diameter materials may be combustible or flammable. Keep this material away from any source of ignition. Explosions can result from ignition of powder or machining fines containing moisture. Fires and explosions can result from dispersing fines and dust in air, especially if confined. Avoid these conditions. Avoid dust inhalation and eye or skin contact. Wear personal protective equipment to prevent contact with skin and eyes (Section 8). Practice good personal hygiene after handling, especially before eating, drinking, smoking, or applying cosmetics.
STORAGE PRECAUTIONS	In solid form this material poses no special problems. Avoid breathing dust or fume. If the use of this material produces dust or fume, use appropriate ventilation controls, personal protective equipment or both.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION	Local exhaust ventilation should be used to control exposure to airborne dust and fume emissions near the source (during crushing, grinding, welding, etc.). Assure exposure is less than regulatory limits.
RESPIRATORY PROTECTION	None required as shipped, if processing emits welding fumes, airborne dusts or similar hazards use NIOSH approved respirator as specified by an industrial hygienist/safety professional. Obtain medical approval for respirator users. Use a welding or air supplied respirator where local exhaust or ventilation does not keep exposure below overexposure limits.
EYE PROTECTION	Wear safety glasses when risk of eye injury is present particularly during machining, grinding, welding, powder handling, etc. Contact lenses should not be worn if working with metal dusts and powders.
SKIN PROTECTION	Wear gloves as necessary to prevent metal cuts, skin abrasions and skin contact. Protective clothing such as arm, foot, body protection etc., may be required during handling operations as appropriate for the exposure.
RECOMMENDED MONITORING PROCEDURES	No medical surveillance required while working with metal in massive form. If processing creates dust, fume or other hazard, conduct industrial hygiene evaluation of processes. Follow requirements for medical surveillance of product constituents, compounds and fume if welding fume, dust or other hazards are created by customer processing or handling.

Occupational Exposure Limits (OELs): This product in the physical form it is sold does not present an inhalation hazard. However, operations including, but not limited to, cutting, welding, and grinding may produce fumes and/or particulates. The following exposure limits are for the constituents of the materials under these and similar processes.

Constituents	OSHA PEL ¹	ACGIH TLV ²
OSHA ACGIH Particulate: No Limit Established	15 mg/m ³ , total dust (PNOR) 5 mg/m ³ , respirable fraction (PNOR)	10 mg/m ³ (as inhalable fraction, PNOS) 3.0 mg/m ³ (as respirable fraction, PNOS)
Copper (Cu)	0.1 mg/m ³ (as fume, Cu) 1.0 mg/m ³ (as dusts & mists, Cu)	0.1 mg/m ³ (as fume) 1.0 mg/m ³ (as dusts & mists, Cu)
Lead (Pb)	50 µg/m ³ TWA (as Pb) 30 µg/m ³ Action Level (as Pb)	0.05 mg/m ³
Phosphorus elemental (P)	0.1 mg/m ³	0.02 ppm (0.1 mg/m ³)
Tin, inorganic compounds (Sn)	2 mg/m ³	2 mg/m ³
Zinc (Zn)	5 mg/m ³	2 mg/m ³

NE - None Established, if none established, see "Particulate Where No Limit Has Been Established" in first row or specific compounds created by welding, etc.

Notes:

1. OSHA PELs (Permissible Exposure Limits) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A ("C") designation denotes a Ceiling Limit, which should not be exceeded during any part of the workday unless otherwise noted. A Short Term Exposure Limit (STEL) is a 15-minute exposure, which should not be exceeded.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. ACGIH TLVs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
3. Inhalable fraction. The concentration of inhalable particulate is to be determined from the fraction passing a size-selector per OSHA, ACGIH and other regulatory agencies.
4. PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts not listed specifically by substance name are covered by the PNOR limit which is the same as the inert or nuisance dust limit.
5. Respirable fraction - The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH TLVs® and BEIs®.
6. PNOS (Particles Not Otherwise Specified). Particles not specified are covered by the PNOS limit.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid	APPEARANCE AND COLOR: Reddish/Brown Metal Color
ODOR: No Odor	ODOR THRESHOLD: Not Available
pH: Not Available	EVAPORATION RATE: Not Available
BOILING Range: Not Available	INITIAL BOILING POINT: Not Available
MELTING POINT: 800°F - 2000°F	VAPOR PRESSURE (mmHg): Not Available
SPECIFIC GRAVITY (H ₂ O=1): 8.0 - 9.0	VAPOR DENSITY (AIR=1): Not Available
EVAPORATION RATE: Not Available	% VOLATILES BY VOLUME: None

9. PHYSICAL AND CHEMICAL PROPERTIES (CONTINUED)				
FLASH POINT: None		FLAMMABLE LIMITS VV% LEL: None UEL: None		
RELATIVE DENSITY: Not Available		PARTIAL COEFFICIENT: N-OCTANOL/ WATER: Not Available		
SOLUBILITY IN WATER = None		AUTO-IGNITION TEMPERATURE: Not Available		
VISCOSITY: Not Available		DECOMPOSITION TEMPERATURE: Not Available		
10. STABILITY AND REACTIVITY				
REACTIVITY		Hazardous reactions should not occur under normal conditions.		
STABILITY/ CHEMICAL STABILITY		These alloys are stable materials under normal handling and storage conditions.		
CONDITIONS TO AVOID		Avoid strong acids or bases. Avoid creating or spreading dust. Sparks, heat, open flame and other sources of ignition.		
INCOMPATIBLE MATERIALS		The corrosion-resistant alloys were designed for use in, and possess outstanding resistance to, mineral acids. To a lesser extent, the high temperature alloys also withstand these acids. Be aware, however, that if corrosion does occur, hydrogen might be evolved, causing a potentially explosive environment in confined, closed systems.		
HAZARDOUS DECOMPOSITION PRODUCTS		Solid metal will not decompose without combustion and/or chemical reaction. Various elemental metals, metal oxides, metal compounds including chromium compounds, acids.		
POSSIBILITY OF HAZARDOUS		Should not occur.		
11. TOXICOLOGICAL INFORMATION				
POTENTIAL EXPOSURE ROUTES: For dust: ingestion, inhalation, and eye contact. For fume: inhalation and eye contact. The finished alloy metal is not hazardous.				
For Product: The toxicological properties of this product have not been thoroughly investigated.		For Components, Dusts or Fumes		
		Copper	Lead	Zinc
Oral LD ₅₀	Believed to be moderately toxic	3.5 mg/kg (mouse, intraperitoneal)	No data	No data
Dermal LD ₅₀	Believed to be > 2 g/kg	375 mg/kg (rabbit, subcutaneous)	No data	No data
Inhalation LC ₅₀	Believed to be slightly to moderately toxic	No data	No data	No data
Irritation	Believed to be an eye and respiratory irritant	Respiratory irritant	Not irritating	Eye irritant
SUBCHRONIC/ CHRONIC TOXICITY: No information for product. Lead has caused blood, kidney and nervous system damage in laboratory animals.				
CARCINOGENICITY: This product is not known or reported to be carcinogenic. The International Agency for Research on Cancer (IARC) lists lead as possibly carcinogenic to humans, group 2B.				
MUTAGENICITY: This product is not known or reported to be mutagenic. Lead has been shown to be mutagenic in several in vitro assays.				
REPRODUCTIVE, TERATOGENICITY, OR DEVELOPMENTAL EFFECTS: This product is not known or reported to cause reproductive or developmental effects. Lead has been shown to affect fetal development including birth defects and reduce male reproductive function in laboratory animals.				
NEUROLOGICAL EFFECTS: This product is not known or reported to cause neurological effects. Lead has caused peripheral and central nervous system damage and behavioral effects in laboratory animals.				
INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY: None known or reported.				
12. ECOLOGICAL INFORMATION				
In solid form these alloys pose no special environmental problems. Metal powders or dusts may have significant impact on air, land and water quality. Airborne emissions, spills, and releases to the environment (discharge to streams, sewer systems, surface soil, etc.) should be controlled immediately.				
ECOTOXICITY: No data is available on this product. Individual constituents are as follows:				
Copper: The toxicity of copper to aquatic organisms varies significantly not only with the species, but also with the physical and chemical characteristics of the water, such as its temperature, hardness, turbidity and carbon dioxide content. Copper concentrations varying from 0.1 to 1.0 mg/l have been found by various investigators to be not toxic for most fish. However, concentrations of 0.015 to 3.0 mg/l have been reported as toxic, particularly in soft water to many kinds of fish, crustaceans, mollusks, insects, and plankton.				
Lead: LC50 (48 hrs.) to bluegill (Lepomis macrochirus) is reported to be 2-5 mg/l. Lead is toxic to waterfowl.				
MOBILITY: Dissolved lead may migrate through soil.				
PERSISTENCE/DEGRADABILITY: Lead may persist and accumulate in the environment.				
BIOACCUMULATION: No data				
13. DISPOSAL CONSIDERATIONS				
Whenever possible, recover alloys for reuse or recycling. Solid metal is not a hazardous waste per U.S. E.P.A. If material has been processed, analyze and dispose of waste material in accordance with local, state, or federal regulations. For specific labeling, packing, storage, transportation, and disposal procedures, contact an Environmental Engineer or consultant familiar with waste disposal regulations.				
14. TRANSPORT INFORMATION				
As sold, these solid alloys are not regulated by the U.S. Department of Transportation and the International Air Transport Association.				
Note: metals transported in coiled form may be under tension and represent a source of potential energy due to the tension induced by coiling; it may uncoil to try to lay flat in a long strip when banding is cut or other forces are released; uncoiling can be sudden and catastrophic and measures should be taken to ensure that uncoiling will not occur.				
The following information should be used by individuals with "Function-specific Training" required by U.S. Department of Transportation 49 CFR 172.704, and Dangerous Goods Regulations published by the International Air Transport Association (IATA).				

Shipping Name	If alloy dust or powder is created, it may be a flammable solid or spontaneously combustible material (DOT hazard class 4.1 and 4.2, respectively). A sample of metal powder should be tested according to the U.N. manual of tests and criteria. See 49 CFR 173.124 (a) and (b).
Identification Number	Not Available (Determine by test results)
Hazard Class	Not Available (Determine by test results)
bel(S) Required	Not Available (Determine by test results)

15. REGULATORY INFORMATION

SPECIFIC U.S. EPA REGULATIONS: Toxic Substance Control Act: Components of this material (see section 3) are listed in the TSCA inventory.
CERCLA: Components of this material (section 3) are listed as Hazardous Substances
EPA Superfund Amendment and Reauthorization Act (SARA) of 1986 Section 311/312(SARA Title III): Components of this material (section 3) are listed in SARA Title III, Section 311/312
EPA, SARA Section 313: Components of this material (section 3) are listed Section 313 and subject to Toxic Release Inventory reporting.
SARA Title III Hazard Categorization: Dust and fume are categorized as an immediate (acute) health hazard and a delayed (chronic) health hazard as defined by 40 CFR 370. Product is not categorized as a fire hazard, reactivity hazard or pressure release hazard.
CALIFORNIA PROPOSITION 65: Listed components known by the state to cause cancer, including Nickel, and Cobalt (metal powder). As sold, nickel is in alloy form. See section 3 for other constituents. During welding, melting, etc., may produce oxides and other compounds of the metals listed in section 3 including hexavalent chromium compounds which are listed in California's "Safe Drinking Water and Toxic Enforcement Act of 1986" (Proposition 65).

16. OTHER INFORMATION

Revision Date: August 5, 2015

This information is designed only as guidance for safe handling, use, storage, transportation, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Information contained herein is believed to be true and accurate at the date of its publication, but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material, or the results to be obtained from the use thereof. Compliance with all applicable Federal, State, and local laws and regulations remain the responsibility of the user.

WEEE/ROHS/ END OF LIFE VEHICLES, AND THE JAPANESE GREEN PROCUREMENT INITIATIVE: Uncoated stainless and specialty steels are generally in conformance with the requirements of the European Union's legislation on waste electrical and electronic equipment ("WEEE"; Directive 2002/53/EC) and its companion directive on the restriction on hazardous substances used in EEE ("RoHS"; Directive 2002/95/EC & 2003/11/EC), as well as EU Directive 2000/53/EC on End of Life Vehicles, and the Japanese Green Procurement Initiative.

Ulbrich Stainless Steels & Special Metals, Inc.
Safety Data Sheet (SDS) 001

SECTION 1: IDENTIFICATION

Product Identifier: High Performance, Stainless Steel and Related Alloys, designated as follows:

Stainless Steel and Related Alloys: 201; 254 SMO; 301; 301 AL; 301Si; 302; 303; 303 SE; 304; 304 L; 304 LV; 304 V; 3049; 305; 3512; 308; 309; 309 S; 309 SCB; 310; 310 S; 316; 316 L; 316 LN; 316 Ti; 317; 317 L; 321; 330; 347; 384; 405; 409; 410; 410 S; 414; 416; 416 SE; 420; 420 A; 420 HC; 420 LC; 420 MO; 430; 430Li; 434; 436; 439; 440 A; 440 C; 441; 442; 444; 446; 18 SR¹; Carpenter 20 CB3²; Carpenter 455²; Custom 450; 18-9LW¹; 19-90L⁴; Greek Ascology¹; AL-6XN⁴; 904L; Duplex 2205; Duplex 2304; Duplex 2507
High Manganese Alloys: Nitronic 32¹; Nitronic 33¹; Nitronic 40 (21-6-9)¹; Nitronic 50¹; Nitronic 60¹.
Precipitation Hardening and High Iron Alloys: A 286⁴; AM-350⁴; 17-4PH¹; 17-7PH¹; PH 15-7MO¹.
Electronic Alloys: Ulbravar 29-17 (Alloy 2917); Ulbraseal 36 (Alloy 36); Ulbraseal 42 (Alloy 42) Ulbraseal 46 (Alloy 46); Ulbraseal 52.
Nickel, Nickel Based & Nickel-Iron-Chromium Alloys: 80Ni-20 Cr; Ni 200; Ni 201; Ni 233; Ni 270; Hastelloy B3⁵; Hastelloy B2⁵; Hastelloy C-4⁵; Hastelloy C276⁵; Hastelloy C22⁵; Hastelloy G-3⁵; Hastelloy G-30⁵; Hastelloy X⁵; Haynes 214⁵; Haynes 230⁵; Haynes 242⁵; Haynes 282⁵; HR 120⁵; Waspaloy⁶; Nimonic 75³; Monel 400³; Monel 401³; Monel R405³; Monel K500³; Inconel 600³; Inconel 601³; Inconel 617³; Inconel 625³; Inconel 702³; Inconel 718³; Inconel 722³; Inconel X-750³; Incoloy 800³; Incoloy 801³; Incoloy 825³; Ni-Span-C 902³
Cobalt Based Superalloys and Related Alloys: L-605 (Haynes 25)⁵; Haynes 188⁵; N 155; ULMET

Product Form: Metal Alloy/Mixture

Intended Use of the Product: Solid stainless steel and related products, various uses

Supplier's Details: Ulbrich Stainless Steels & Special Metals, Inc.

153 Washington Avenue, P.O. Box 294,
 North Haven, CT USA, 06473-1191
 Phone Number (203) 239-4481 • (800) 243-1676
 SDS Technical Contact Weekdays (203) 265-8299
 FAX: (203) 239-7479 • E-Mail: information@ulbrich.com
 Emergency Telephone Number (203) 239-4481; Chemtrec 800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

Classification (GHS-US): Most products covered by this SDS are articles and, as such, are not considered hazardous under the 2012 OSHA Hazardous Communications Standard (29 CFR 1910.1200). Materials resulting from machining these products may be considered hazardous under the 2012 OSHA Hazardous Communications Standard (29 CFR

Acute toxicity - Oral	Category 4
Respiratory sensitization	Category 1B
Skin sensitization	Category 1
Carcinogenicity	Category 1B
Reproductive toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

Label Elements:

Emergency Overview

Signal Word: Danger

Hazard statements:

Harmful if swallowed

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

May cause cancer

Causes damage to the respiratory tract prolonged or repeated exposure if inhaled.

Suspected of damaging fertility or the unborn child

Causes eye irritation.



Appearance Various massive product

Physical state Solid

Odor Odorless

Precautionary Statements - Prevention

Do not breathe dusts / fume / gas / mist / vapor / spray.

Do not handle until all safety precautions have been read and understood

Wear protective gloves / protective clothing / eye protection / face protection.

Use personal protective equipment as required

Contaminated work clothing must not be allowed out of the workplace.

Take off and wash contaminated clothing before reuse.

Precautionary Statements - Response

If exposed, concerned, experiencing respiratory symptoms, or feel unwell: Get medical advice/attention.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

If in eyes: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

If on skin: Wash with plenty of water.

If skin irritation occurs: Get medical advice/attention

STORAGE

Store away from acids and incompatible materials. Store locked up
 Store in accordance with federal/state and local regulations.

DISPOSAL

Metal scrap should be recycled whenever possible
 Dispose of in accordance with federal/state or local regulations.

Hazards not otherwise classified: None Known, No data available
Unknown acute toxicity statement (mixture): None Known, No data available

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

STAINLESS STEEL ALLOYS

ALLOY		UNS No.	CONSTITUTENT(S) % Maximum unless otherwise shown.												
			C	Mn	Si	Cr	Ni	Mo	Fe	Cb + Ta	Ti	P	Cu	Other	Other
201		S0100	0.15	5.5/7.5	1.0	16.0/18.0	3.5/5.5		BAL						
254 SMO		S31254	0.02	1.0	0.8	19.5/20.5	17.5/18.5	6.0/6.5	BAL			0.03	0.5/1.0		S 0.01
301		S30100	0.15	2.0	1.0	16.0/18.0	6.0/8.0		BAL			0.45			S 0.03
301 AL		S30100	0.15	2.0	1.0	16.0/18.0	6.0/8.0		BAL						
301SI		S30116	0.15	2.0	1.3	16.0/18.0	6.0/8.0	0.75	BAL			0.04	0.75		S 0.03
302		S30200	0.15	2.0	1.0	17.0/19.0	7.0/10.0	0.75	BAL			0.04			S 0.03
302 HQ		S30430	0.08	2.0	1.0	17.0/19.0	8.0/10.0		BAL			0.045	3.0-4.0		S 0.03
303		S30300	0.15	2.0	1.0	17.0/19.0	8.0/10.0		BAL			0.02			S 0.15
303 SE		S30323	0.15	2.0	1.0	17.0/19.0	8.0/10.0		BAL			0.17		Se 0.15/0.35	
304		S30400	0.08	2.0	1.0	18.0/20.0	8.0/10.5		BAL						
304 L		S30403	0.03	2.0	1.0	18.0/20.0	8.0/12.0		BAL						
304 LV			0.03	2.0	1.0	18.0/20.0	8.0/10.5		BAL						
304 V			0.08	2.0	1.0	18.0/20.0	8.0/9.5		BAL			0.04			
3049			0.10	2.0	0.75	18.0/20.0	9.0/10.5		BAL			0.045			
305		S30500	0.12	2.0	1.0	17.0/19.0	10.5/13.0		BAL						
30512			0.12	2.0	1.0	17.0/19.0	12.0/13.0	0.75	BAL			0.04	0.75		
308		S30800	0.08	2.0	1.0	19.0/21.0	10.0/12.0		BAL						
309		S30900	0.20	2.0	1.0	22.0/24.0	12.0/15.0		BAL						
309 S		S30908	0.08	2.0	1.0	22.0/24.0	12.0/15.0		BAL						
309 SCB			0.08	2.0	0.75	22.0/24.0	12.0/16.0		BAL	10XC/1.1 max		0.75			
310		S31000	0.25	2.0	1.5	24.0/26.0	19.0/22.0		BAL			0.045			S 0.2
310 S		S31008	0.08	2.0	1.5	24.0/26.0	19.0/22.0		BAL						
316		S31600	0.08	2.0	1.0	16.0/18.0	10.0/14.0	2.0/3.0	BAL						
316 L		S31603	0.03	2.0	1.0	16.0/18.0	10.0/14.0	2.0/3.0	BAL						
316 LN			0.02	2.0	0.75	16.0/18.0	10.0/14.0	2.0/3.0	BAL						
316 Ti		S31635	0.08	2.0	1.0	16.0/18.0	10.0/14.0	2.0/3.0	BAL		0.07	0.045	0.075		S 0.03
317		S31700	0.08	2.0	1.0	18.0/20.0	11.0/15.0	3.0/4.0	BAL						
317 L		S31703	0.03	2.0	1.0	18.0/20.0	11.0/15.0	3.0/4.0	BAL						
321		S32100	0.08	2.0	1.0	17.0/19.0	9.0/12.0		BAL		5XC/0.7max				
330		N08330	0.08	2.0	0.75/1.5	17.0/20.0	34.0/37.0		BAL						
347		S34700	0.08	2.0	1.0	17.0/19.0	9.0/13.0		BAL	10XC min					
384		S38400	0.08	2.0	1.0	15.0/17.0	17.0/19.0		BAL						
405		S40500	0.08	1.0	1.0	11.5/14.5	0.5		BAL			0.04		Al 0.10/0.30	
409		S40900	0.08	1.0	1.0	10.5/11.75			BAL		6XCmin/0.75				
410		S41000	0.15	1.0	1.0	11.5/13.5			BAL						
410 S		S41008	0.08	1.0	1.0	11.5/14.5	0.6		BAL		0.2	0.04			S 0.03
414		S41400	0.15	1.0	1.0	11.5/13.5	1.25/2.5		BAL						
416		S41600	0.15	1.25	1.0	12.0/14.0			BAL						S 0.15 min
416 SE		S41623	0.15	1.25	1.0	12.0/14.0			BAL		0.15 min				
420		S42000	0.15 min	1.0	1.0	12.0/14.0	0.5	0.5	BAL						
420 A			0.25	1.0	1.0	12.0/14.0	1.0		BAL			0.04			S 0.03
420 HC			0.15	1.0	1.0	12.0/14.0	0.5		BAL			0.04			S 0.03
420 LC		S42000	0.27	1.0	1.0	12.0/14.0	0.5	0.5	BAL			0.04	0.5	Al 0.15	S 0.03
420 MO			0.30/0.40	1.0	1.0	12.0/14.0	0.5	0.5/1.75	BAL		0.05	0.04	0.5		S 0.03
430		S4300	0.12	1.0	1.0	16.0/18.0			BAL		0.5			Al 0.15	
430LI		S43000	0.022	1.0	1.0	16.0/18.0	0.5	0.5	BAL			0.04	0.5		S 0.03
434		S43400	0.12	1.0	1.0	16.0/18.0		0.75/1.25	BAL		0.5	0.04			S 0.03
436		S43600	0.12	1.0	1.0	16.0/18.0		0.75/1.25	BAL	5XC/0.80 max		0.04			S 0.03
439		S43036	0.04	1.0	0.6	17.0/18.0	0.5		BAL		0.2/0.6				
440 A		A44002	0.60/0.75	1.0	1.0	16.0/18.0		0.75	BAL						
440 C		S44004	0.95/1.2	1.0	1.0	16.0/18.0		0.75	BAL			0.04			
441		S44100	0.03	1.0	1.0	17.5/19.0	1.0		BAL	9XC+3/1.0 max	0.1/0.6	0.04			S 0.02
442		S44200	0.20	1.0	1.0	18.0/23.0			BAL						
444			0.025	1.0	1.0	17.5/19.5	1.0	1.75/2.5	BAL	0.8		0.04			
446		S44600	0.20	1.50	1.0	23.0/27.0			BAL						
A 286 ⁴		K66286	0.08	2.0	1.0	13.5/16.0	24.0/27.0	1.0/1.75	BAL		1.9/2.3	0.04		Al 0.35	V 0.5 S 0.035
AM-350 ⁴		S35000	0.07/0.11	0.5/1.25	0.50	16.0/17.0	4.0/5.0	2.5/3.25	BAL			0.04			S 0.03
PH 15-7 MO ¹		S15700	0.09	1.0	1.0	14.0/16.0	6.5/7.75	2.0/3.0	BAL			0.04		Al 0.75/1.5	S 0.03
17-4 PH ¹		S17400	0.07	1.0	1.0	15.0/17.5	3.0/5.0		BAL	0.3		0.04	3.0/5.0	Al 0.75/1.5	S 0.03
17-7 PH ¹		S17700	0.09	1.0	1.0	16.0/18.0	6.5/7.75		BAL			0.04		Al 0.75/1.5	S 0.03
18 SR ¹		N/L	0.02	0.50	1.0	17.0/19.0	0.50		BAL		3.0/6.0			Al 1.0/2.0	
18-9LW ¹		N/L	0.10	2.0	1.0	17.0/19.0	8.0/10.0	0.5	BAL	0.5	1.4		3.0/4.0		
19-90L ⁴		K63198	0.28/0.35	0.75/1.5	0.3/0.8	18.0/21.0	8.0/11.0	1.0/1.75	BAL	0.25/0.60	0.1/0.35	0.04	0.50	W 1.0/1.75	
CARPENTER 20 CB3 ²		N08020	0.06	2.0	1.0	19.0/21.0	32.5/35.0	2.0/3.0	BAL	8XC/1.0 max		0.035	3.0/4.0		
CARPENTER 455 ²			0.10	1.0	1.0	11.5	8.0/9.0	0.50	BAL		1.0/2.0		2.0/3.0		
CUSTOM 450		S45000	0.05	1.0	1.0	14/16	5/7	0.5/1	75			0.03	1.25/1.75		S 0.03
GREEK ASCOLOGY		F41800	0.15/0.2	0.50	0.50	12.0/14.0	2.0	0.50	BAL			0.03		W 2.5/3.5	S 0.01 V 2.2
AL-6XN ⁴		N08367	0.03	2.0	1.0	20.0/22.0	23.5/25.5	6.0/7.0	BAL				0.75		
904L		N08904	0.02	2.0	1.0	23.0	28.0	5.0				0.045	2.0		S 0.035
DUPLEX 2205		S2205	0.03	2.0	1.0	22.0/23.0	4.5/6.5	3.0/3.5	BAL			0.03			S 0.02
DUPLEX 2304		S2304	0.03	2.5	1.0	21.5/24.5	3.0/5.5	0.05/0.6	BAL			0.04	0.05/0.6		S 0.04
DUPLEX 2507		S32750	0.03	1.2	0.8	24.0/26.0	6.0/8.0	3.0/5.0	BAL			0.035	0.50		S 0.02
CAS Number			7440-44-0	7439-96-5	7440-21-3	7440-47-3	7440-02-0	7439-98-7	7439-89-6	Ta 7440-03-1 Cb 7440-25-7	7440-32-6	7723-14-0	7440-50-8	Se 7782-49-2 Al 7429-90-5 W 7440-33-7	S 7446-09-5 Co 7440-48-4 V 7440-62-2

BAL = Balance Min = minimum Max = maximum x/x = minimum to maximum

HIGH MANGANESE ALLOYS

ALLOY	UNS No.	CONSTITUENT(S) % Maximum unless otherwise shown.												
		C	Mn	Si	Cr	Ni	Mo	Fe	Cb + Ta	Ti	P	N	Al	V
NITRONIC 32 ¹	S24100	10	12.0	5	18.0	1.6		BAL				0.35		
NITRONIC 33 ¹	S24000	0.06	13.0	0.5	18.0	3.0		BAL				0.30		
NITRONIC 40 ¹	S21904	0.08	8.0/10.0	1.0	18.0/20.0	5.0/7.0		BAL				0.15/0.40		
NITRONIC 50 ¹	S20910	0.06	4.0/6.0	1.0	20.5/23.5	11.5/13.5	1.5/3.0	BAL	0.1/0.3			0.2/0.4		0.1/0.3
NITRONIC 60 ¹	S21800	0.10	7.0/9.0	3.5/4.5	16.0/18.0	8.0/9.0	0.75	BAL	0.1	0.05	0.04		0.35	0.1/0.5
CAS Number		7440-44-0	7439-96-5	7440-21-3	7440-47-3	7440-02-0	7439-98-7	7439-89-6	Ta 7440-03-1 Cb 7440-25-7	7440-32-6	7723-14-0	7727-37-9	7429-90-5	7440-62-2

BAL = Balance Min = minimum Max = maximum x/x = minimum to maximum

ELECTRONIC ALLOYS

ALLOY	UNS No.	CONSTITUENT(S) % Maximum unless otherwise													
		C	Mn	Si	Cr	Ni	Co	Cu	Fe	Al	Mo	Ti	Mg	Zr	Other
ULBRASEAL36	K93601	0.03	0.30	0.20	0.10	36.0	0.05	0.15	BAL	0.01					
ULBRASEAL42	K94100	0.05	0.80	0.30	0.25	41.0			BAL	0.10					
ULBRASEAL48		0.05	0.80	0.30	0.25	46.0			BAL	0.10					
ULBRASEAL52	K95050	0.05	0.80	0.30	0.25	50.5			BAL	0.10					
ULBRAVAR29-17	K94610	0.04	0.50	0.20	0.20	29.0	17.0	0.20	BAL	0.10	0.20	0.10	0.10	0.10	
CAS Number		7440-44-0	7439-96-5	740-21-3	7440-47-3	7440-02-0	7440-48-4	7440-50-8	7439-89-6	7429-80-5	7439-98-7	7440-32-6	1309-48-4	7440-67-7	
BAL = Balance		Min = minimum		Max = maximum		x/y = minimum to maximum									

BAL = Balance Min = minimum Max = maximum x/x = minimum to maximum

NICKEL, NICKEL BASED, NICKEL-IRON-CHROMIUM AND COPPER NICKEL ALLOYS

ALLOY	UNS No.	CONSTITUENT(S) % Maximum unless otherwise shown.														
		C	Mn	Fe	Si	Cu	Cr	Al	Ti	Ni	Mo	Cb + Ta	Co	W	Other	Other
80Ni-20Cr	N/L	0.15	2.5	1.0	0.75/1.60		19.0/21.0			BAL						
CN 715	C71500	0.05	1.0	1.0		BAL				33			1.0			Zn 1.0
Ni 200	N0220	0.08	0.18	0.2	0.15	0.13				BAL						S 0.005
Ni 201	N02201	0.01	0.18	0.2	0.18	0.13				BAL						S 0.005
Ni 233	N/L	0.10	0.30	0.10	0.10	0.10			0.005	BAL						S 0.008
Ni 270	N02270	0.01	0.001	0.003	0.001	0.001	0.001		0.001	BAL						S 0.001
INCONEL 600 ³	N06600	0.08	0.5	8.0	0.25	0.25	15.5			BAL						
INCONEL 601 ³	N06601	0.05	0.5	14.1	0.25	0.50	23.0	1.35		BAL						
INCONEL 617 ³	N06617	0.07	0.5	1.5	0.5	0.20	22.0	1.20	0.3	52.0	9.0		1.25			
INCONEL 625 ³	N06625	0.05	0.25	2.5	0.25		21.5	0.2	0.2	BAL	9.0	3.65				
INCONEL 702 ³	N/L	0.05	0.5	1.0	0.35	0.25	15.5	3.25	0.63	BAL						
INCONEL 718 ³	N07718	0.08	0.35	BAL	0.35	0.30	17.0/21.0	0.2/0.8	0.65/1.15	50/55	2.8/3.3	4.75/5.5	1.0			
INCONEL 722 ³	N/L	0.08	1.0	5.0/9.0	0.70	0.50	14.0/17.0	0.4/1.0	2.0/2.75	BAL		7/1.2	1.0			
INCONEL X-750 ³	N07750	0.08	0.35	5.0/9.0	0.35	0.50	14.0/17.0	0.4/1.0	2.25/2.75	BAL			1.0			
INCOLOY 800 ³	N08800	0.10	0.75	39/46	0.50	0.38	19/23	0.15/0.6	0.15/0.6	30/35						
INCOLOY 801 ³	N08801	0.05	1.0	44/48	0.5	0.25	19/22		1.1	BAL		0.2	1.0		Zr 0.01	V 0.2
INCOLOY 825 ³	N08825	0.05	0.10	22/30	0.5	1.5/3.0	19.5/23.5	0.2	0.6/1.2	38/46	2.5/3.5	0.5				
PAN-C 802 ³	N09902	0.06	80	BAL	1.0		4.9/5.75	0.3/0.8	2.2/2.75	BAL			2.5	3.0/4.5		V 0.35
HASTELLOY B2 ⁵	N10665	0.02	1.0	2.0	0.10	0.5	1.0			BAL	26.0/30.0		1.0	0.5		
HASTELLOY B3 ⁵	N10675	0.02	3.0	1.5	0.10	0.2	1.0/3.0		0.20	BAL	27.0/32.0	0.2	1.0	3.0	Zr 0.01	V 0.2
HASTELLOY C-4	N06455	0.01	1.0	3.0	0.08		14.0/18.0			BAL	14.0/17.0		3.0		P 0.025	S 0.010
HASTELLOY C276 ⁵	N10276	0.01	1.0	4.0/7.0	0.08		14.5/16.5			BAL	15.0/17.0		2.5	3.0/4.5		V 0.35
HASTELLOY C22 ⁵	W86022	0.015	0.50	2.0/6.0	0.08		20.0/22.5			BAL	12.5/14.5		2.5	2.5/3.5		V 0.35
HASTELLOY G3 ⁵	N06985	0.015		18/21	1.0	2.5	21/23.5			BAL	6.0/8.0	0.5	5.0	W 1.5	P 0.04	S 0.03
HASTELLOY G30 ⁵	N06030	0.03	1.5	13.0/17.0	0.80	1.0/2.4	28.0/31.5			BAL	4.0/6.0	0.3/1.5	5.0	1.5/4.0		
HASTELLOY X ⁵	N06002	0.05/0.15	1.0	17.0/20.0	1.0	0.50	20.5/23.0	0.50	0.15	BAL	8.0/10.0		0.5/10.0	17.0/20.0		
HAYNES 214 ⁵	N/L	0.15	0.2	2.0/6.0	0.10		15.0/17.0	4.0/5.0	0.10	BAL	0.10		0.10	0.10		
HAYNES 230 ⁵	N/L	0.05/0.15	1.0	17.0/20.0	1.0		20.5/23.0			BAL	8.0/10.0		0.5/2.5	0.2/1.0		
HAYNES 242 ⁵	N10242	0.03	0.8	2.0	0.4	0.5	7/9	0.5		BAL	24.0/26.0		1.0			
HAYNES 282 ⁵	N07718	0.06	0.3	1.5	0.15		19.0/21.0	1.0/2.0	3.0	BAL	8.0/9.0		9.0/11.0	0.50		
HR 120	N08120	0.05	0.75	30/35	0.6		25	0.1		BAL	2.5	0.7	3	2.5		
WASPALLOY ⁵	N07001	0.02/0.10	0.1	2.0	0.15	0.10	18.0/21.0	1.2/3.0	2.75/4.0	BAL	3.5/5.0		12.0/15.0		Zr 0.02/0.08	
NIMONIC 75 ³	N06075	0.12	1.0	3.0	1.0	0.25	19.0/21.0			BAL						
MONEL 400 ³	N04400	0.30	2.0	2.5	0.5	28/34				BAL						S 0.024
MONEL 401 ³	N04400	0.10	2.25	0.75	0.25	BAL				40/45						S 0.015
MONEL R405 ³	N04405	0.15	1.0	1.25	0.25	31.5				BAL						S 0.043
MONEL K500 ³	N05500	0.13	0.75	1.0	0.25	29.5		2.73	0.60	BAL						S 0.005
CAS Number		7440-44-0	7439-96-5	7439-89-6	7440-21-3	7440-50-8	7440-47-3	7429-90-5	7440-32-6	7440-02-0	7439-98-7	Ta 7440-03-1 Cb 7440-25-7	7440-48-4	7440-33-7	Zr 7440-87-7 P 7723-14-0 Mg 7439-95-4	V 7440-62-2 S 7446-09-5 Zn 7440-66-6

BAL = Balance Min = minimum Max = maximum x/x = minimum to maximum

COBALT BASED SUPERALLOYS AND RELATED ALLOYS

ALLOY	UNS No.	CONSTITUENT(S) % Maximum unless otherwise shown.														
		C	Mn	P	S	Si	Cr	Ni	Co	Fe	W	La	Cu	Mo	Cb + Ta	Other
L-605	R30606	0.05/0.15	1.0/2.0	0.04	0.03	0.40	19.0/21.0	9.0/11.0	BAL	3.0	14.0/16.0					
HAYNES 188 ⁵	R30188	0.05/0.15	1.25	0.02	0.015	0.2/0.5	20.0/24.0	20.0/24.0	BAL	3.0	13.0/16.0	0.02/0.12				
MP35N	R30035	0.02	0.15	0.015	0.01	0.15	19.0/21.0	33.0/37.0	BAL	1.0				9.0/10.5		Ti 1.0
N-155	R30155	0.08/0.16	1.0/2.0	0.04	0.04	1.0	20.0/22.5	19.0/21.0	18.5/21.0	BAL	2.0/3.0		0.50	2.5/3.5	0.75/1.25	N 0.10/0.20
ULMET	231233	0.06	0.08			0.3	26	9	BAL	3.0	2			5		
S Number		7440-44-0	7439-96-5	7723-14-0	7704-34-9	7440-21-3	7440-47-3	7440-02-0	7440-48-4	7439-89-6	7440-33-7	7439-91-0	7440-50-8	7439-98-7	Cb 7440-25-7 Ta 7440-03-1	N 7727-37-9 Ti 7440-32-6

BAL = Balance Min = minimum Max = maximum x/x = minimum to maximum

All commercial metals may contain small amounts of various elements (less than 0.1%), in addition to those specified. These small quantities frequently originate in the raw material used.

4. FIRST AID MEASURES

Description of necessary measures:

Inhalation: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed, concerned, experiencing respiratory symptoms, or feel unwell: Get medical advice/attention or call a poison center or doctor/physician.

Eye Contact: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if in eyes: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Do not allow victim to rub or keep eyes tightly shut. Continue rinsing. If eye irritation persists, get medical advice/attention.

Skin Contact: If on skin: Wash thoroughly after handling. Wash with plenty of water. If irritation or rash occurs: Get medical advice, attention. Skin cuts and abrasions can be treated by standard first aid or medical treatment. Quickly remove dust contaminated clothing but do not shake clothing.

Ingestion: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. If exposed, concerned or feel unwell: Get medical advice/attention.

Most important symptoms/effects, acute and delayed (chronic):

Symptoms: May cause allergic skin reaction. May cause acute gastrointestinal effects if swallowed.

Note to Physicians: Treat symptomatically

5. FIRE FIGHTING MEASURES

Flash Point (With Test Method)

None

Flammable (Explosive) Limits VV%

LEL: None

UEL: None

Extinguishing Media

Do not spray water on burning metal as a violent explosion may result. This product is not flammable in the form it is sold. May be flammable if there are finely divided pieces resulting from processing of this product. Carbon dioxide is not effective in extinguishing burning metals. Do not spray water on burning metal as an explosion may occur. Use class "D" fire extinguisher, smother with dry sand, or salt (NaCl).

Specific Hazards Rising From The Chemical

No unusual fire or explosion hazards from solid alloys in massive form. Dust, chips, thin strips, etc. created by grinding or processing can ignite if a substantial number of small particles are dispersed or adequate ignition source is present. The hazard increases with finer particles. An explosion may follow a fire initiated in a mass of wet metal fines. The explosive characteristics of such material is caused by the steam and hydrogen generated within the burning mass. Metals may react exothermically with acids and oxidizers.

Special Protective Equipment And Precautions For Fire-Fighters:

Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

6. ACCIDENTAL MATERIAL RELEASE OR SPILL CONTROL MEASURES

In solid form this material poses no special clean-up problems. If this material is in powder or dust form, do not dry sweep. Notify safety personnel. Clean-up should be conducted with a grounded vacuum system utilizing high efficiency particulate air (HEPA) filtration. Caution should be taken to minimize airborne generation of powder or dust and avoid contamination of air, land and water. Cleanup personnel should protect against dust inhalation and skin or eye contact, follow handling precautions below, and use non-sparking tools. Properly label all materials collected in waste container. Follow applicable OSHA regulations (29 CFR), EPA regulations (40 CFR), Canadian Workplace Hazardous Materials Information System (WHMIS) Regulations, and other regulatory requirements.

7. HANDLING AND STORAGE

Handling Precautions

Wear cut resistant gloves and clothing to avoid cuts. Metal in coiled form may be under tension and represent a source of potential energy due to the tension induced by coiling; it may suddenly uncoil to try to lay flat in a long strip when banding is cut or other forces are released. Measures should be taken to ensure that uncoiling will not occur. Machining of alloys may result in fine turnings, chips, dust, or fumes. Small diameter materials may be combustible or flammable. Keep this material away from any source of ignition. Keep fines and turnings completely dry or very wet (more than 25% water content by weight) for handling safety. Explosions can result from ignition of powder or machining fines containing moisture. Fires and explosions can result from dispersing fines and dust in air, especially if confined. Avoid these conditions. Avoid dust inhalation and eye or skin contact. Wear personal protective equipment to prevent contact with skin and eyes (Section 8). Practice good personal hygiene after handling, especially before eating, drinking, smoking, or applying cosmetics.

Storage Precautions

In solid form this material poses no special problems. Avoid breathing dust or fume. If the use of this material produces dust or fume, use appropriate ventilation controls, personal protective equipment or both.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation

Local exhaust ventilation should be used to control exposure to airborne dust and fume emissions near the source (during crushing, grinding, welding, etc.). Assure exposure is less than regulatory limits.

Respiratory Protection

None required as shipped, if processing emits welding fumes, airborne dusts or similar hazards use NIOSH approved respirator as specified by an industrial hygienist/safety professional. Obtain medical approval for respirator users. Use a welding or air supplied respirator where local exhaust or ventilation does not keep exposure below overexposure limits.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

Eye Protection	Wear safety glasses when risk of eye injury is present particularly during machining, grinding, welding, powder handling, etc. Contact lenses should not be worn if working with metal dusts and powders.
Skin Protection	Wear gloves as necessary to prevent metal cuts, skin abrasions and skin contact. Protective clothing such as arm, foot, body protection etc., may be required during handling operations as appropriate for the exposure.
Recommended Monitoring Procedures	No medical surveillance required while working with metal in massive form. If processing creates dust, fume or other hazard, conduct industrial hygiene evaluation of processes. Follow requirements for medical surveillance of product constituents, compounds and fume if welding fume, dust or other hazards are created by customer processing or handling.

Occupational Exposure Limits (OELs): This product in the physical form it is sold does not present an inhalation hazard. However, operations including, but not limited to, cutting, welding, and grinding may produce fumes and/or particulates. The following exposure limits are for the constituents of the materials under these and similar processes.

Constituents	OSHA PEL ¹	ACGIH TLV ²
OSHA ACGIH Particulate:	15 mg/m ³ , total dust (PNOR)	10 mg/m ³ (as inhalable fraction, PNOS)
No Limit Established	5 mg/m ³ , respirable fraction (PNOR)	3.0 mg/m ³ (as respirable fraction, PNOS)
Aluminum (Al)	15 mg/m ³ (as total dust) 5 mg/m ³ (as respirable fraction)	10 mg/m ³ (as metal dust) 5.0 mg/m ³ (as welding fume)
Boron (B)	15 mg/m ³ (as total dust, boron oxide)	10 mg/m ³ (as boron oxide)
Cobalt (Co)	0.1 mg/m ³ (as dust & fume)	0.02 mg/m ³
Chromium (Cr)	0.5 mg/m ³ (as Cr II & III, inorganic compounds) 1.0 mg/m ³ (as Cr, metal) 0.005 mg/m ³ (as Cr VI, inorganic compounds & certain water insoluble) "AL" 0.0025 mg/m ³ (as Cr VI, inorganic compounds & certain water insoluble)	0.5 mg/m ³ (as Cr III, inorganic compounds) 0.5 mg/m ³ (as Cr, metal) 0.05 mg/m ³ (as Cr VI, inorganic compounds) 0.01 mg/m ³ (as Cr VI, inorganic compounds & certain water insoluble)
Copper (Cu)	0.1 mg/m ³ (as fume, Cu) 1.0 mg/m ³ (as dusts & mists, Cu)	0.1 mg/m ³ (as fume) 1.0 mg/m ³ (as dusts & mists, Cu)
Iron (Fe)	10 mg/m ³ (as iron oxide fume)	5.0 mg/m ³ (as iron oxide dust and fume)
Lead (Pb)	50 µg/m ³ TWA (as Pb) 30 µg/m ³ Action Level (as Pb)	0.05 mg/m ³
Magnesium (Mg)	15 mg/m ³ (as magnesium oxide)	10 mg/m ³ (as magnesium oxide)
Manganese (Mn)	"C" 5.0 mg/m ³ (as Fume & Mn compounds)	0.2 mg/m ³
Molybdenum (Mo)	15 mg/m ³ (as total dust, soluble compounds) 5.0 mg/m ³ (as respirable fraction)	10 mg/m ³ (as Mo insoluble compounds, inhalable fraction) 3.0 mg/m ³ (as Mo insoluble compounds, respirable fraction) 0.5 mg/m ³ (as Mo soluble compounds, respirable fraction)
Nickel (Ni)	1.0 mg/m ³ (as Ni metal & insoluble compounds)	1.5 mg/m ³ (as inhalable fraction Ni metal) 0.2 mg/m ³ (as inhalable fraction Ni inorganic only insoluble and soluble)
Niobium (Nb)/ Columbium (Cb)	10 mg/m ³ (PNOR)	10 mg/m ³ (PNOS)
Phosphorus elemental (P)	0.1 mg/m ³	0.02 ppm (0.1 mg/m ³)
Selenium (Se)	0.2 mg/m ³	0.2 mg/m ³
Silicon (Si)	15 mg/m ³ (total dust, PNOR) 5.0 mg/m ³ (as respirable fraction, PNOR)	10 mg/m ³
Sulfur (S)	5 ppm (13 mg/m ³) (as Sulfur Dioxide)	0.25 mg/m ³ (as Sulfur Dioxide)
Tantalum (Ta)	5 mg/m ³	5 mg/m ³
Tungsten (W)	NE	5.0 mg/m ³ STEL 10 mg/m ³
Titanium (Ti)	NE	NE
Tin, inorganic compounds (Sn)	2 mg/m ³	2 mg/m ³
Vanadium (V)	"C" 0.5 mg/m ³ (as V ₂ O ₅ respirable dust) "C" 0.1 mg/m ³ (as V ₂ O ₅ fume)	0.05 mg/m ³ (as V ₂ O ₅ , inhalable fraction)
Zinc (Zn)	5 mg/m ³	2 mg/m ³
Zirconium (Zr)	5 mg/m ³	5 mg/m ³ STEL: 10 mg/m ³

NE - None Established, if none established, see "Particulate Where No Limit Has Been Established" in first row or specific compounds created by welding, etc.

Notes:

- OSHA PELs (Permissible Exposure Limits) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A ("C") designation denotes a Ceiling Limit, which should not be exceeded during any part of the workday unless otherwise noted. A Short Term Exposure Limit (STEL) is a 15-minute exposure, which should not be exceeded.
- Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. ACGIH TLVs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
- The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH REL): Compendium of Policy and Statements, NIOSH, Cincinnati, OH (1992). NIOSH is the federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
- Inhalable fraction. The concentration of inhalable particulate is to be determined from the fraction passing a size-selector per OSHA, ACGIH and other regulatory agencies.
- PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts not listed specifically by substance name are covered by the PNOR limit which is the same as the inert or nuisance dust limit.
- Respirable fraction - The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH TLVs® and BEIs®.
- PNOS (Particles Not Otherwise Specified). Particles not specified are covered by the PNOS limit.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid	Appearance And Color: Silver /Gray Color	Odor: No Odor	Odor Threshold: Not Available
pH: Not Available	Evaporation Rate: Not Available		
Boiling Range: Not Available	Vapor Pressure (MmHg): Not Available	Initial Boiling Point: Not Available	

PHYSICAL AND CHEMICAL PROPERTIES (CONTINUED)

Melting Point: 900°F - 3200°F	Vapor Density (Air=1): Not Available	Specific Gravity (H ₂ O=1): 7.5 - 8.0
Flash Point: None	% Volatiles By Volume: None	Auto-Ignition Temperature: Not Available

Relative Density: Not Available	Evaporation Rate: Not Available	Decomposition Temperature: Not Available
Solubility In Water = None	Flammable Limits V/V% LEL: None	UEL: None
Viscosity: Not Available	Partial Coefficient: N-Octanol/ Water: Not Available	
10. Stability And Reactivity		
Reactivity	Hazardous reactions should not occur under normal conditions.	
Stability/ Chemical Stability	These alloys are stable materials under normal handling and storage conditions.	
Possibility of Hazardous Reactions	Should not occur to solid metal under normal handling and storage conditions.	
Conditions to Avoid	Avoid strong acids or bases. Avoid creating or spreading dust. Sparks, heat, open flame and other sources of ignition.	
Incompatible Materials	Dissolves in hydrofluoric acid. Ignites in the presence of flourine. When heated above 200°C, may react exothermically with chlorine, bromine, halocarbons, carbon tetrachloride, Freon, carbon tetrafluoride, acetylene, acids and oxidizers. Corrosion is unlikely, however, if it does occur, hydrogen might be evolved, causing a potentially explosive environment.	
Hazardous Decomposition Products	Solid metal is stable but may decompose from combustion and/or chemical reaction. This may produce various hazardous materials such as elemental metals, metal oxides, carbon dioxide, carbon monoxide, sulfur compounds, metal compounds including hexavalent chromium, titanium dioxide, vanadium pentoxide and acids.	

11. TOXICOLOGICAL INFORMATION

Toxicity Data	Eye: Rabbit (cobalt) unknown amount produced severe reaction with abscess involving lens, ciliary body, vitreous humor and retina.	
	Skin: Nickel-containing alloys may cause sensitization by skin contact.	
	Ingestion:	Guinea Pig (nickel): LD ₅₀ : 5 mg/kg Mouse (boron): LD ₅₀ : 560 mg/kg Rat (cobalt): LD ₅₀ : 6,171 mg/kg Rat (iron): LD ₅₀ : 30,000 mg/kg Rat (manganese) LD ₅₀ : 9,000 mg/kg Rat (Titanium): LD ₅₀ : >5,000 mg/kg Rabbit (Silicon Dioxide): LD ₅₀ : >5,000 mg/kg Rabbit (cobalt): LD ₅₀ : 750 mg/kg Human (copper): TD ₀₁ : 120 µg/kg, affects the gastrointestinal tract (nausea or vomiting). Human (chromium): LD ₅₀ : 71 mg/kg
	Inhalation:	Rabbit (nickel): TC _{LO} : 130 µg/m ³ 35 weeks (intermittent) - 6 hours Human (chromium VI): TC _{LO} : 110 µg/m ³ 3 years (continuous) tumorigenic (carcinogenic per RTECS) Pig (cobalt): TC _{LO} : 100 µg/m ³ 6 hours for 13 weeks (intermittent) Human (manganese): TC _{LO} : 2300µg/m ³ Rat (titanium): LC ₅₀ : >6,820 mg/ m ³
	Subchronic:	Rat (molybdenum) inhalation: 12-16 g/m ³ /1 hour/30 days, resulted in slight growth depression, and thickening of the intra-alveolar septa, which contained connective tissue fibers.
	Other:	Dog (nickel) Intravenous: LD ₅₀ : 10 mg/kg Rat (chromium), Implant: TD ₀₁ : 1200 µg/kg intermittent over 6 weeks. Rat (cobalt) intramuscular: 126 mg/kg, tumorigenic at site of application. Rabbit (molybdenum) intra-tracheal: LD ₅₀ : 70 mg/kg produced focal fibrosis (pneumoconiosis).
	Nickel alloys and hexavalent chromium compounds are listed as carcinogens by IARC. Detailed information from these sources may be obtained from the following: IARC Monographs on the evaluation of carcinogenic risk of Chemicals to Man; and the NTP annual report on carcinogens, NTP Public Information Office, MD B204 Box 12233, Research Triangle Park, North Carolina 27709.	
	Welding Fumes: Follow OSHA and NIOSH methods for monitoring of welding fumes to determine exposure potential.	
	Teratology:	Rat (nickel) oral: TDLo: 158 mg/kg Rat (molybdenum) oral: 5800 µg/kg given to female 30 weeks prior to mating and during days 1-20 of pregnancy caused specific musculoskeletal system development abnormalities.
	Reproduction:	Rat (molybdenum) oral: 6050 µg/kg given to female 35 weeks prior to mating produced pre-, and post-implantation mortality. Rat (cobalt) unspecified exposure route, 0.05 mg/kg continuous, administered throughout gestation to female was embryotoxic.
	Mutagenicity:	Hamster (chromium III) lung cell: 34 mg/L caused sister chromatid exchange. Human (cobalt) DNA damage: Human Leukocyte 3mg/L. Human (Chromium VI) DNA damage: Human Leukocyte 50µmol/L.

12. ECOLOGICAL INFORMATION

In solid form these alloys pose no special environmental problems. Metal powders or dusts may have significant impact on air, land and water quality. Airborne emissions, spills, and releases to the environment (discharge to streams, sewer systems, surface soil, etc.) should be controlled immediately.

Manganese undergoes complex geochemical cycling, and can accumulate in the top layer of sediment in lakes.

In water, molybdenum will precipitate out with natural calcium. Soil levels should not exceed 50 ppm to avoid problems with livestock. Molybdenum; (fathead minnow), LC₅₀: 370 mg/L/96 hours. Terrestrial plants can contain enough molybdenum to be toxic to animals but still grow normally.

Environmental Fate: In water, cobalt is adsorbed greatly to hydrosylate or oxidate sediments. It may be taken into solution in small amounts through bacteriological activity. In water, molybdenum will precipitate out with natural calcium. In water, chromium III oxide is expected to eventually precipitate to sediments. In air, chromium III oxide is primarily removed by fallout and precipitation. Soils with a high chromium content (>0.2%) are expected to be infertile.

12. ECOLOGICAL INFORMATION (CONTINUED)

Ecotoxicity: Few plants accumulate cobalt at greater than 100 ppm, the level at which severe phytotoxicity would occur. The potential for bioaccumulation of cobalt by aquatic and terrestrial organisms is low with trophic transfer factors less than 1. Little tendency for chromium III bioaccumulation in the food chain. The half-life of chromium in soils may be several years.

13. DISPOSAL CONSIDERATIONS

Whenever possible, recover alloys for reuse or recycling. Solid metal is not a hazardous waste per U.S. E.P.A. If material has been processed, analyze and dispose of waste material in accordance with local, state, or federal regulations. For specific labeling, packing, storage, transportation, and disposal procedures, contact an Environmental Engineer or consultant familiar with waste disposal regulations.

14. TRANSPORT INFORMATION

As sold, these solid alloys are not regulated by the U.S. Department of Transportation and the International Air Transport Association.

Note: metals transported in coiled form may be under tension and represent a source of potential energy due to the tension induced by coiling; it may uncoil to try to lay flat in a long strip when banding is cut or other forces are released; uncoiling can be sudden and catastrophic and measures should be taken to ensure that uncoiling will not occur.

The following information should be used by individuals with "Function-specific Training" required by U.S. Department of Transportation 49 CFR 172.704, and Dangerous Goods Regulations published by the International Air Transport Association (IATA).

Shipping Name	None as sold, however, if dust or powder is created, it may be a flammable solid or spontaneously combustible material (DOT hazard class 4.1 and 4.2, respectively). A sample of metal powder should be tested according to the U.N. manual of tests and criteria. See 49 CFR 173.124 (a) and (b).
Identification	Not Available (Determine by test results)
Hazard Class	Not Available (Determine by test results)
Label(S) Required	Not Available (Determine by test results)

15. REGULATORY INFORMATION

SPECIFIC U.S. EPA REGULATIONS: Toxic Substance Control Act: Components of this material (see section 3) are listed in the TSCA inventory.

CERCLA: Components of this material (section 3) are listed as Hazardous Substances

EPA Superfund Amendment and Reauthorization Act (SARA) of 1986 Section 311/312(SARA Title III): Components of this material (section 3) are listed in SARA Title III, Section 311/312

EPA, SARA Section 313: Components of this material (section 3) are listed Section 313 and subject to Toxic Release Inventory reporting.

SARA Title III Hazard Categorization: Dust and fume are categorized as an immediate (acute) health hazard and a delayed (chronic) health hazard as defined by 40 CFR 370. Product is not categorized as a fire hazard, reactivity hazard or pressure release hazard.

CALIFORNIA PROPOSITION 65: Listed components known by the state to cause cancer, including Nickel, and Cobalt (metal powder). As sold, nickel is in alloy form. See section 3 for other constituents. During welding, melting, etc., may produce oxides and other compounds of the metals listed in section 3 including hexavalent chromium compounds which are listed in California's "Safe Drinking Water and Toxic Enforcement Act of 1986" (Proposition 65).

16. OTHER INFORMATION

Revision Date: August 5, 2015

This information is designed only as guidance for safe handling, use, storage, transportation, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Information contained herein is believed to be true and accurate at the date of its publication, but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material, or the results to be obtained from the use thereof. Compliance with all applicable Federal, State, and local laws and regulations remain the responsibility of the user.

HEXAVALENT CHROMIUM: Hexavalent Chromium is not a constituent component of uncoated Stainless Steels. Stainless Steels are iron-based alloys that contain chromium. It is this addition of chromium that gives stainless steel its unique corrosion resistant properties through the formation of an invisible and adherent chromium-rich oxide surface film. The vast majority of chromium in stainless and other specialty steels is in the metallic/elemental form *(zero valence state). A small amount of trivalent chromium (oxide) is formed on the surface of specialty steels and is crucial for protecting the alloy from corrosion. Hexavalent chromium, which is associated with certain adverse health effects, is not a constituent of stainless or other specialty steels. It can also be formed by welding on stainless steel. The high temperatures involved result in oxidation that converts the chromium to a hexavalent state.

WEEE/ROHS/ END OF LIFE VEHICLES, AND THE JAPANESE GREEN PROCUREMENT INITIATIVE: Uncoated stainless and specialty steels are generally in conformance with the requirements of the European Union's legislation on waste electrical and electronic equipment ("WEEE"; Directive 2002/53/EC) and its companion directive on the restriction on hazardous substances used in EEE ("RoHS": Directive 2002/95/EC & 2003/11/EC), as well as EU Directive 2000/53/EC on End of Life Vehicles, and the Japanese Green Procurement Initiative.

This information is designed only as guidance for safe handling, use, storage, transportation, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Information contained herein is believed to be true and accurate at the date of its publication, but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material, or the results to be obtained from the use thereof. Compliance with all applicable Federal, State, and local laws and regulations remain the responsibility of the user.

Trademarks: Several materials described in these Safety Data Sheets are proprietary alloys produced under license from various manufacturers. They are identified by the following subscript numbers:

¹Registered Trademark of AK Steel Corporation

²Registered Trademark of Carpenter Technology Corporation

³Registered Trademark of Special Metals Corporation

⁴Registered Trademark of ATI Allegheny Companies

⁵Registered Trademark of Haynes International, Inc.

⁶Registered Trademark of United Technologies Corporation

Ulbrich Stainless Steels & Special Metals, Inc.
Safety Data Sheet (SDS) 002

SECTION 1: IDENTIFICATION

Product Identifier: Titanium, Aluminum, Tantalum, Niobium and Zirconium Based Alloys, **designated as follows:**
Titanium & Titanium Based Alloys: IA25/A35; Grade IIA40; Grade III A55; Grade IV A70/A75; 6A1-4V; 3A1-2.5V.
Aluminum Alloys: 1100, 1050, 1070, 3003, 3004, 3105, 5005, 5052, 5083, 5182, 5454, 5754, 6061
Zirconium, Niobium: (Synonym – Columbium)
Tantalum, and Sintered Tantalum
Product Form: Metal Alloy/Mixture
Intended Use of the Product: Solid metal products, various uses
Supplier's Details: Ulbrich Stainless Steels & Special Metals, Inc.
 153 Washington Avenue, P.O. Box 294,
 North Haven, CT USA, 06473-1191
 Phone Number 203-239-4481 • 800-243-1676•
 SDS Technical Contact Weekdays (203) 265-8299
 FAX: (203) 239-7479 • E-Mail: information@ulbrich.com
 Emergency Telephone Number 203- 239-4481; Chemtrec 800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

Classification (GHS-US): Most products covered by this SDS are articles and, as such, are not considered hazardous under the 2012 OSHA Hazardous Communications Standard (29 CFR 1910.1200). Materials resulting from machining these products may be considered hazardous under the 2012 OSHA Hazardous Communications Standard (29 CFR 1910.1200).

Label Elements:

Signal word, hazard statement(s), symbols and precautionary statement(s):

Hazard Symbol	Hazard Classification	Signal Word	Hazard Statement(s)
	Single Target Organ Toxicity (STOT) Repeat Exposure -2	Warning	May cause damage to respiratory tract, liver and kidney through prolonged or repeated inhalation exposure. If converted to small particles during further processing, handling, or by other means, may form combustible dust concentrations in air.
NA	Eye Irritation Combustible Dust		Causes eye irritation. If converted to small particles during further processing, handling, or by other means, may form combustible dust concentrations in air.
Prevention	Do not breathe dusts / fume / mist. Wear protective gloves / protective clothing / eye protection / face protection. Contaminated work clothing must not be allowed out of the workplace. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product.		
Response	Get medical advice/attention if you feel unwell.		
Storage	Store in accordance with federal, state and other regulations. Dust, powder and strips are combustible and may form explosive mixtures with air or fluids. Store locked up.		
Disposal	Metal scrap should be recycled whenever possible. Dispose of in accordance with federal, state and other regulations.		

Hazards not otherwise classified: None Known

Unknown acute toxicity statement (mixture): None Known

Primary Entry Routes	Not considered a physical or health hazard in the solid form that it is sold. However, operations such as abrading, burning, welding, sawing, brazing, grinding, cutting, polishing, and machining that results in the creation of dust or elevated temperatures may cause eye, skin, and respiratory tract irritation and other hazards described in this document. Entry Routes for Dust: Inhalation, Skin, Eye for all components; Ingestion for Molybdenum, Chromium & Vanadium
Target Organs	Target Organs for Dust - Respiratory System, Skin, Eyes, NOTE: Liver and Kidney for Molybdenum
Effects of Overexposure	EYES: Dust may cause mechanical irritation. DERMAL: Dust may cause mechanical irritation. Chromium, molybdenum and vanadium are skin irritants. INHALATION: Excessive exposure to high concentrations of dust may cause irritation to the mucous membranes of the upper respiratory tract. Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 microns from many metals can produce an acute reaction known as "metal fume fever". Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms), metallic taste in the mouth, dryness and irritation of the throat followed by weakness and muscle pain. The symptoms come on in a few hours after excessive exposures and usually last from 12 to 48 hours. Titanium dioxide and Chromium may cause pulmonary fibrosis and permanent damage. Vanadium Pentoxide may cause green tongue, metallic taste, eczema, cough, fine rales, wheezing, bronchitis, and dyspnea (breathing difficulty). INGESTION: Ingestion of harmful amounts of this product as distributed is unlikely due to its solid insoluble form. Ingestion of dust may cause nausea or vomiting.
Acute	
Chronic	Titanium Dioxide: The signs and symptoms of chronic exposure to titanium dioxide include X-ray evidence of mild fibrosis, dyspnea, cough, and declines in pulmonary function.

Effects of Overexposure	Aluminum: Aluminum dusts/fines are a low health risk by inhalation and should be treated as a nuisance dust. Aluminum dust is a respiratory and eye irritant. Tin: Exposure to dust and fume of tin (oxide) is recognized to result in a benign pneumoconiosis called stannosis. Molybdenum: Certain handling operations, such as burning and welding, may generate both insoluble molybdenum compounds (metal and molybdenum dioxide) and soluble molybdenum compounds (molybdenum trioxide). Molybdenum compounds generally exhibit a low order of toxicity with the trioxide the more toxic. However, some reports
Carcinogenic References	Titanium dioxide: The International Agency for Research on Cancer (IARC) identifies Titanium Dioxide as Group 3 carcinogens, not classifiable as to their human carcinogenicity. Chromium: The International Agency for Research on Cancer (IARC) identifies chromium metal and trivalent chromium compounds as Group 3 carcinogens, not classifiable as to their human carcinogenicity. Hexavalent chromium is listed by IARC as Group 1 carcinogen that are carcinogenic to humans. Iron oxide: The International Agency for Research on Cancer (IARC) identifies Titanium Dioxide as Group 3 carcinogens, not classifiable as to their human carcinogenicity.
Medical Conditions Aggravated By Exposure	Chronic respiratory disease, impaired pulmonary function and conditions such as asthma, emphysema, chronic bronchitis, etc., may be aggravated or damaged by exposure to dust or fumes if excessive concentrations are inhaled. If prior damage or disease to the neurological, circulatory, hematologic or renal systems has occurred, proper screening or examinations should be conducted on individuals who may be exposed.

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

ALUMINUM ALLOY	UNS No.	CONSTITUENT(S) % Maximum unless otherwise shown.									
		Mg	Mn	Cr	Cu	Al	Si	Fe	Zn	V	Other
1100	A91100				0.12	99.0 min.					
1050	A91050	0.05	0.05		0.05	99.1	0.25	0.4	0.07		Ti 0.05
1070	A91070	0.03	0.03		0.04	99.7	0.25	0.25	0.04	0.05	Ti 0.3
3003	A93003		1.2		0.12	98.6 min.					
3004	A93004	1.2	1.2			97.8					
3105	A93105	0.5	0.55			99.0					
5005	A95005	0.8				99.2 min.					
5052	A95052	2.5		0.25		97.2 min.					
5083	A95083	4.4	0.7		0.15	94.7					
5182	A95182	4.5	0.35			95.2					
5454	A95454	2.7	0.8	0.12		96.3					
5754	A95754	3.2	0.5			95.5	0.4	0.4			
6061	A96061	0.8/1.2	0.15	0.04/0.35	0.15/0.4	95.8/98.6			0.25		
CAS Number		7439-95-4	7439-96-5	7440-47-3	7440-50-8	7429-90-5	7440-21-3	7439-89-6	7440-66-6	7440-62-2	Ti 7440-32-6

BAL = Balance

Min = minimum

Max = maximum

x/x = minimum to maximum

TITANIUM BASED ALLOY	UNS No.	CONSTITUENT(S) %Maximum unless otherwise shown				Ti	V	Al	Tin	Other	Other
		C	N	Fe	H						
GRADE I-25A/35A		0.10	0.03	0.20	0.01	BAL					
GRADE II -40A	R50400	0.08	0.03	0.30	0.0125	BAL					
GRADE III -55A	R50550	0.08	0.05	0.30	0.015	BAL					
GRADE IV-70A/75A	R50700	0.08	0.05	0.50	0.015	BAL					
GRADE V-6A1-4V	R56400	0.08	0.05	0.25	0.015	BAL	3.5/4.5	5.75/6.75			
GRADE IX - 3-2.5	R56320	0.10	0.03	0.25	0.15	BAL	2.0/3.0	2.5/3.5			
GRADE 21-Beta 21S	R58210	0.05	0.05	0.4	0.015	BAL		2.5/3.5		Co 2.4/3.2	Mo 14/16
15-3-3-3	R58153	0.05	0.05	0.25	0.015	BAL	14.0/16.0	2.5/3.5	2.5/3.5	Cr 2.5/3.5	
15P		0.08	0.03	0.30	0.015	BAL					Pd 0.12/0.25
TITANIUM 6-2-4-2	R54620 R54621	0.08	0.01/0.013	0.25	0.015	BAL		5.5/6/5	1.8/2.2		Mo 1.8/2.2 Zr 3.60/4.40
NITINOL	N01555					44/45				Ni 55/56	
3Al-2.5V	R56320	0.05	0.02	0.30	0.015	BAL	2.0/3.0	2.5/3.5			
CAS Number		7440-44-0	7727-37-9	7439-89-6	1333-74-0	7440-32-6	7440-62-2	7429-90-5	7440-31-5	Co 7440-03-1 Cr 7440-47-3 Ni 7440-02-0	Mo 7439-98-7 Pd 7440-05-3 Sn 7440-31-5

BAL = Balance

Min = minimum

Max = maximum

x/x = minimum to maximum

ALLOY	UNS No.	CONSTITUENT(S) % Ranges unless otherwise shown							
		Zr	Niobium	Tantalum	Molybdenum	Iron	Titanium	Nickel	Tungsten
ZIRCONIUM 702	S20100	99/100							
NIObIUM TYPE I (SYNONYM-COLUMBIUM)	R04210		99/100						
NIObIUM TYPE II (SYNONYM-COLUMBIUM)	R04300		99/100						
TANTALUM	R05200		0.10	BAL	0.020	0.010	0.010	0.010	0.05
SINTERED TANTALUM	R05400		0.10	BAL	0.020	0.010	0.010	0.010	0.05
CAS Number		7440-67-7	7440-03-1	7440-25-7	7439-98-7	7439-89-6	7440-32-6	7440-02-0	7440-33-7

BAL = Balance

Min = minimum

Max = maximum

x/x = minimum to maximum

All commercial metals may contain small amounts of various elements (less than 0.1%), in addition to those specified. These small quantities frequently originate in the raw material used.

4. FIRST AID MEASURES

Description of necessary measures:

Inhalation: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed, concerned, experiencing respiratory symptoms, or feel unwell: Get medical advice/attention or call a poison center or doctor/physician.

Eye Contact: As sold/shipped material is in solid form, not a likely form of exposure. However during processing (welding, grinding, burning, etc.), if in eyes: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Do not allow victim to rub or keep eyes tightly shut. May cause conjunctivitis with repeated exposures. If eye irritation persists, get medical advice/attention.

Skin Contact: If on skin: Wash thoroughly after handling with plenty of water. If irritation or rash occurs, get medical advice/attention. Skin cuts and abrasions can be treated by first aid or medical treatment. Quickly remove dust contaminated clothing but do not shake clothing.

Ingestion: As sold/shipped in solid form, not a likely form of exposure. However during welding, grinding, burning, etc., if swallowed, call a poison center or physician if you feel unwell and rinse mouth. If exposed, concerned or feel unwell: Get medical advice/attention.

Most important symptoms/effects, acute and delayed (chronic):

Inhalation: As sold/shipped, solid metal is not likely to present an acute or chronic health effect.

Eye: As sold/shipped, solid metal is not likely to present an acute or chronic health effect. See component effects.

Skin: As sold/shipped, solid metal is not likely to present an acute or chronic health effect. See component effects.

Ingestion: As sold/shipped, solid metal is not likely to present an acute or chronic health effect. See component effects.

However, during further processing (welding, grinding, etc.) individual components may illicit an acute or chronic health effect.

Refer to Section 11-Toxicological Information.

Immediate Medical Attention and Special Treatment: None Known

5. FIRE FIGHTING MEASURES

Flash Point (With Test Method): None in solid form FLAMMABLE (EXPLOSIVE) LIMITS V/V%: LEL: None UEL: None

Extinguishing Media	Not flammable in the form of this product as distributed. Flammable as finely divided pieces resulting from processing. Use Type D fire extinguisher. Carbon dioxide is not effective in extinguishing burning metals.
Special Firefighting Procedures	Do not spray water on burning metal as an explosion may occur. To extinguish a metal fire, smother with dry sand, salt (NaCl) or other class "D" fire extinguishing powder.
Unusual Fire and Explosion Hazards	Intense heat. Dust, chips, thin strips, etc. created by grinding or processing can ignite if a substantial number of small particles are dispersed or adequate ignition source is present. The hazard increases with finer particles. An explosion may follow a fire initiated in a mass of wet metal fines. The explosive characteristics of such material is caused by the steam and hydrogen generated within the burning mass. Do not allow dust, chips, thin strips, etc. to accumulate, it can be pyrophoric. Contact with water or steam above 704°C causes a violent reaction.
Hazardous Combustion Products	Various metal oxides, carbon dioxide, carbon monoxide, sulfur compounds including titanium dioxide - an IARC Group 2B carcinogen; hexavalent chromium may cause lung, nasal, and/or sinus cancer; vanadium pentoxide affects eyes, skin, respiratory system; zinc, copper, magnesium, or cadmium fumes may cause metal fume fever. Soluble molybdenum compounds may cause lung irritation.
Incompatibility (Materials To Avoid)	Reacts with acids, bases, oxidizing agents, alcohols, metal oxides, halogenated hydrocarbons, halogens, especially fluorine. Dangerous fire hazard in the form of dust when exposed to heat, flame or by chemical reaction with oxidizing agents. May be an explosion hazard in the form of dust by chemical reaction with air, alkali hydroxides, chromates, dichromates, molybdates, sulfates, tungstates, borax, CCl ₄ , copper oxide, lead, lead oxide, phosphorus, KClO ₃ , KNO ₃ , nitryl fluoride. Do not allow dusts or other fines to accumulate. Molten metal may react violently with water and liberate hydrogen. When heated above 200°C, reacts exothermically with chlorine, bromine, halocarbons, carbon tetrachloride, carbon tetrafluoride, Freon, acetylene, acids and oxidizers. In some cases, an ignitable corrosion product containing fine particulate forms on the surface of the metal. This film can be rendered non-flammable by oxidation treatments such as specific heat treatments.

6. ACCIDENTAL MATERIAL RELEASE OR SPILL CONTROL MEASURES

In solid form this material poses no special clean-up problems. If this material is in powder or dust form, do not dry sweep. Notify safety personnel. Clean-up should be conducted with a grounded vacuum system utilizing high efficiency particulate air (HEPA) filtration. Caution should be taken to minimize airborne generation of powder or dust and avoid contamination of air, land and water. Cleanup personnel should protect against dust inhalation and skin or eye contact, follow handling precautions and use non-sparking tools. Properly label all waste materials and follow applicable OSHA regulations (29 CFR), EPA regulations (40 CFR) and other regulatory requirements.

7. HANDLING AND STORAGE

Handling Precautions	Wear cut resistant gloves and clothing to avoid cuts. Metal in coiled form may be under tension and represent a source of potential energy due to the tension induced by coiling; it may suddenly uncoil to try to lay flat in a long strip when banding is cut or forces are released. Ensure that uncoiling will not occur. Machining of alloys may result in fine turnings, chips, dust, or fumes. Small diameter materials may be combustible or flammable. Keep this material away from any source of ignition. Keep fines and turnings completely dry or very wet (more than 25% water content by weight) for handling safety. Explosions can result from ignition of powder or machining fines containing moisture. Fires and explosions can result from dispersing fines and dust in air, especially if confined. Avoid these conditions. Avoid dust inhalation and eye or skin contact, wear personal protective equipment (Section 8). Practice good personal hygiene after handling.
Storage Precautions	In solid form this material poses no special problems. Avoid breathing dust or fume. If the use of this material produces dust or fume, use appropriate ventilation controls, personal protective equipment or both.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation	Local exhaust ventilation should be used to control exposure to airborne dust and fume emissions near the source (during crushing, grinding, welding, etc.). Assure exposure is less than regulatory limits.
Respiratory Protection	None required as shipped, if processing emits welding fumes airborne dusts or similar hazards use NIOSH approved respirators as specified by an industrial hygienist or safety professional. Obtain medical approval for users of negative pressure devices. Use a welding fume respirator or an air supplied respirator where local exhaust or ventilation does not keep exposure below overexposure limits.
Eye Protection	Wear safety glasses when risk of eye injury is present particularly during machining, grinding, welding, powder handling, etc. Contact lenses should not be worn if working with metal dusts and powders.
Skin Protection	Wear gloves as necessary to prevent metal cuts, skin abrasions and skin contact. Protective clothing such as arm, foot, body protection etc., may be required during handling operations as appropriate for the exposure.
Recommended Monitoring Procedures	No medical surveillance required while working with metal in massive form. If processing creates dust, fume or other hazard, conduct industrial hygiene evaluation of processes. Follow requirements for medical surveillance of product constituents, compounds and fume if welding fume, dust or other hazards are created by customer processing or handling.

Occupational Exposure Limits (OELs): This product in the physical form it is sold does not present an inhalation hazard. However, operations including, but not limited to, cutting, welding, and grinding may produce fumes and/or particulates. The following exposure limits are for the constituents of the materials under these and similar processes.

Constituents	OSHA PEL ¹	ACGIH TLV ²
OSHA ACGIH Particulate: No Limit Established	15 mg/m ³ , total dust (PNOR) 5.0 mg/m ³ , respirable fraction (PNOR)	10 mg/m ³ (as inhalable fraction, PNOS) 3.0 mg/m ³ (as respirable fraction, PNOS)
Aluminum (Al)	15 mg/m ³ (as total dust) 5 mg/m ³ (as respirable fraction)	10 mg/m ³ (as metal dust) 5.0 mg/m ³ (as welding fume)
Cobalt (Co)	0.1 mg/m ³ (as dust & fume)	0.02 mg/m ³
Chromium (Cr)	0.5 mg/m ³ (as Cr II & III, inorganic compounds) 1.0 mg/m ³ (as Cr, metal) 0.005 mg/m ³ (as Cr VI, inorganic compounds & certain water insoluble) "AL" 0.0025 mg/m ³ (as Cr VI, inorganic compounds & certain water insoluble)	0.5 mg/m ³ (as Cr III, inorganic compounds) 0.5 mg/m ³ (as Cr, metal) 0.05 mg/m ³ (as Cr VI, inorganic compounds) 0.01 mg/m ³ (as Cr VI, inorganic compounds & certain water insoluble)
Copper (Cu)	0.1 mg/m ³ (as fume, Cu) 1.0 mg/m ³ (as dusts & mists, Cu)	0.1 mg/m ³ (as fume) 1.0 mg/m ³ (as dusts & mists, Cu)
Iron (Fe)	10 mg/m ³ (as iron oxide fume)	5.0 mg/m ³ (as iron oxide dust and fume)
Magnesium (Mg)	15 mg/m ³ (as magnesium oxide)	10 mg/m ³ (as magnesium oxide)
Manganese (Mn)	"C" 5.0 mg/m ³ (as Fume & Mn compounds)	0.2 mg/m ³
Molybdenum (Mo)	15 mg/m ³ (as total dust, soluble compounds) 5.0 mg/m ³ (as respirable fraction)	10 mg/m ³ (as Mo insoluble compounds, inhalable fraction) 3.0 mg/m ³ (as Mo insoluble compounds, respirable fraction) 0.5 mg/m ³ (as Mo soluble compounds, respirable fraction)
Nickel (Ni)	1.0 mg/m ³ (as Ni metal & insoluble compounds)	1.5 mg/m ³ (as inhalable fraction Ni metal) 0.2 mg/m ³ (as inhalable fraction Ni inorganic only insoluble and soluble)
Niobium (Nb)/ Columbium (Cb)	10 mg/m ³ (PNOR)	10 mg/m ³ (PNOS)
Silicon (Si)	15 mg/m ³ (total dust, PNOR) 5.0 mg/m ³ (as respirable fraction, PNOR)	10 mg/m ³
Titanium (Ti)	NE	NE
Tin, inorganic compounds (Sn)	2 mg/m ³	2 mg/m ³
Vanadium (V)	"C" 0.5 mg/m ³ (as V2O5 respirable dust) "C" 0.1 mg/m ³ (as V2O5 fume)	0.05 mg/m ³ (as V2O5, inhalable fraction)
Zinc (Zn)	5 mg/m ³	2 mg/m ³
Zirconium (Zr)	5 mg/m ³	5 mg/m ³ STEL: 10 mg/m ³

NE - None Established, if none established, see "Particulate Where No Limit Has Been Established" in first row or specific compounds created by welding, etc.

Notes:

1. OSHA PELs (Permissible Exposure Limits) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A ("C") designation denotes a Ceiling Limit, which should not be exceeded during any part of the workday unless otherwise noted. A Short Term Exposure Limit (STEL) is a 15-minute exposure, which should not be exceeded.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. ACGIH TLVs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
3. The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH-REL): Compendium of Policy and Statements, NIOSH, Cincinnati, OH (1992). NIOSH is the federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
4. Inhalable fraction. The concentration of inhalable particulate is to be determined from the fraction passing a size-selector per OSHA, ACGIH and other regulatory agencies.
5. PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts not listed specifically by substance name are covered by the PNOR limit which is the same as the inert or nuisance dust limit.
6. Respirable fraction - The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2014 TLVs® and BEIs® Appendix D, paragraph C.
7. PNOS (Particulates Not Otherwise Specified). Particles not specified are covered by the PNOS limit.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid -	APPEARANCE AND COLOR: Silver /Gray Color
ODOR: None	ODOR THRESHOLD: Not Available
pH: Not Available	EVAPORATION RATE: Not Available
BOILING Range: Not Available	INITIAL BOILING POINT: Not Available
MELTING POINT: 900°F - 3200°F	VAPOR PRESSURE (mmHg): Not Available
SPECIFIC GRAVITY (H2O=1): >3	VAPOR DENSITY (AIR=1): Not Available
EVAPORATION RATE: Not Available	% VOLATILES BY VOLUME: None

9. PHYSICAL AND CHEMICAL PROPERTIES (CONTINUED)	
FLASH POINT: None	FLAMMABLE LIMITS V/V% LEL: None UEL: None
RELATIVE DENSITY: Not Available	PARTIAL COEFFICIENT: N-OCTANOL/ WATER: Not Available
SOLUBILITY IN WATER = Negligible	AUTO-IGNITION TEMPERATURE: Not Available
VISCOSITY: Not Available	DECOMPOSITION TEMPERATURE: Not Available
10. STABILITY AND REACTIVITY	
REACTIVITY	Hazardous reactions should not occur with solid product under normal conditions.
STABILITY/ CHEMICAL STABILITY	These alloys are stable materials under normal handling and storage conditions.
CONDITIONS TO AVOID	Avoid strong acids or bases. Avoid creating or spreading dust. Sparks, heat, open flame and other sources of ignition. Avoid contact with carbon monoxide, particularly at temperatures between 50°C and 300° C, to prevent formation of nickel carbonyl which is toxic and a carcinogen. Halogenated hydrocarbons can react violently with finely divided aluminum.
INCOMPATIBLE MATERIALS	If dusts or finely divided materials are produced, avoid strong oxidizers – violent reaction with heat generation. Acids and Alkalis – reacts to generate hydrogen. Water and aluminum mixtures may be hazardous when confined due to hydrogen generation. If corrosion occurs, hydrogen might be evolved, causing a potentially explosive environment in confined areas. Hydrofluoric acid or hydrofluoric-nitric acid mixtures rapidly dissolve alloys. Niobium and Zirconium alloys will ignite in cold fluorine and above 200°C will react exothermically with chlorine, bromine, fluorine, iodine, and halocarbons such as carbon tetrachloride, carbon tetrafluoride and freons. Nitryl-fluoride, FNO2 will initiate a reaction at room temperature to produce a glowing or white incandescence.
HAZARDOUS DECOMPOSITION PRODUCTS	Solid metal will not decompose without combustion and/or chemical reaction. Products include elemental metals, metal oxides, metal compounds including products listed in handling precautions (section 7) and decomposition products (directly above).
POSSIBILITY OF HAZARDOUS REACTIONS	Should not occur with solid metal.
11. TOXICOLOGICAL INFORMATION	
TOXICITY DATA	Eye: Rabbit (cobalt) unknown amount produced severe reaction with abscess involving lens, ciliary body, vitreous humor and retina.
	Skin: No data.
	Ingestion: Guinea Pig (nickel): LD ₅₀ : 5 mg/kg Mouse (boron): LD ₅₀ : 560 mg/kg Rat (cobalt): LD ₅₀ : 6,171 mg/kg Rabbit (cobalt): LD ₅₀ : 750 mg/kg Human (copper): TD ₀₁ : 120 µg/kg, affects the gastrointestinal tract (nausea or vomiting). Human (chromium): LD ₅₀ : 71 mg/kg Rat (Iron): LD ₅₀ : 30,000 mg/kg Rat (manganese) LD ₅₀ : 9,000 mg/kg Rabbit (Silicon Dioxide): LD ₅₀ : >5,000 mg/kg Rat (Titanium): LD ₅₀ : >5,000 mg/kg
	Inhalation: Rabbit (nickel): TC ₀₁ : 130 µg/m ³ 35 weeks (intermittent) - 6 hours Human (chromium VI): TC ₀₁ : 110 µg/m ³ 3 years (continuous) tumorigenic (cardinogenic per RTECS) Pig (cobalt): TC ₀₁ : 100 µg/m ³ 6 hours for 13 weeks (intermittent) Human (manganese): TC ₀₁ : 2300µg/m ³ Rat (titanium): LC ₅₀ : >6,820 mg/ m ³
	Subchronic: Rat (molybdenum) inhalation: 12-16 g/m ³ /1 hour/30 days, resulted in slight growth depression, and thickening of the intra-alveolar septa, which contained connective tissue fibers.
	Other: Dog (nickel) Intravenous: LD ₅₀ : 10 mg/kg Rat (chromium), Implant: TD ₀₁ : 1200 µg/kg intermittent over 6 weeks. Rat (cobalt) intramuscular: 126 mg/kg, tumorigenic at site of application. Rabbit (molybdenum) intra-tracheal: LD ₅₀ : 70 mg/kg produced focal fibrosis (pneumoconiosis).
	Nickel alloys and hexavalent chromium compounds are listed as carcinogens by IARC. Detailed information from these sources may be obtained from the following: IARC Monographs on the evaluation of carcinogenic risk of Chemicals to Man; and the NTP annual report on carcinogens, NTP Public Information Office, MD B204 Box 12233, Research Triangle Park, North Carolina 27709.
	Welding Fumes: Follow OSHA and NIOSH methods for monitoring of welding fumes to determine exposure potential.
	Teratology: Rat (nickel) oral: TDLo: 158 mg/kg Rat (molybdenum) oral: 5800 µg/kg given to female 30 weeks prior to mating and during days 1-20 of pregnancy caused specific musculoskeletal system development abnormalities.
	Reproduction: Rat (molybdenum) oral: 6050 µg/kg given to female 35 weeks prior to mating produced pre-, and post-implantation mortality. Rat (cobalt) unspecified exposure route, 0.05 mg/kg continuous, administered throughout gestation to female was embryotoxic.
Mutagenicity: Hamster (chromium III) lung cell: 34 mg/L caused sister chromatid exchange. Human (cobalt) DNA damage: Human Leukocyte 3mg/L. Human (Chromium VI) DNA damage: Human Leukocyte 50µmol/L.	

12. ECOLOGICAL INFORMATION

In solid form these alloys pose no special environmental problems. Metal powders or dusts may have significant impact on air, land and water quality. Airborne emissions, spills, and releases to the environment (discharge to streams, sewer systems, surface soil, etc.) should be controlled immediately.

Ecotoxicity: Few plants accumulate cobalt at greater than 100 ppm, the level at which severe phytotoxicity would occur. The potential for bioaccumulation of Cobalt by both aquatic and terrestrial organisms is low with trophic transfer factors less than 1. There is little tendency for chromium III bioaccumulation along the food chain. Terrestrial plants can contain enough molybdenum to be toxic to animals but still grow normally.

Molybdenum: (fathead minnow), LC_{50} : 370 mg/L/96 hours. Terrestrial plants can contain enough molybdenum to be toxic to animals but still grow normally.

Environmental Fate: In water, cobalt is adsorbed greatly to hydrous oxide or oxide sediments. It may be taken into solution in small amounts through bacteriological activity. In water, molybdenum will precipitate out with natural calcium. In water, chromium III oxide is expected to eventually precipitate to sediments. In air, chromium III oxide is primarily removed by fallout and precipitation. Soils with a high chromium content (>0.2%) are expected to be infertile. The half-life of chromium in soils may be several years.

Manganese undergoes complex geochemical cycling, and can accumulate in the top layer of sediment in lakes. In water, molybdenum will precipitate out with natural calcium. Soil levels should not exceed 50 ppm to avoid problems with livestock.

13. DISPOSAL CONSIDERATIONS

Whenever possible, recover alloys for reuse or recycling. Solid metal is not a hazardous waste per U.S. EPA. If material has been processed, analyze and dispose of waste material in accordance with local, state, or federal regulations. For specific labeling, packing, storage, transportation, and disposal procedures, contact an Environmental Engineer or consultant familiar with waste disposal regulations.

14. TRANSPORT INFORMATION

As sold, these solid alloys are not regulated by the U.S. Department of Transportation and the International Air Transport Association. Note: metals transported in coiled form may be under tension and represent a source of potential energy due to the tension induced by coiling; it may uncoil to try to lay flat when banding is cut or forces are released; this can be sudden and catastrophic and measures should be taken to ensure that uncoiling will not occur.

The following information should be used by individuals with "Function-specific Training" required by U.S. Department of Transportation 49 CFR 172.704, and Dangerous Goods Regulations published by the International Air Transport Association (IATA).

Shipping Name	Not applicable, however, if alloy dust or powder is created, it may be a flammable solid or spontaneously combustible material (DOT hazard class 4.1 and 4.2, respectively). A sample of metal powder should be tested according to the U.N. manual of tests and criteria. See 49 CFR 173.124 (a) and (b).
Identification Number	Not Available (Determine by test results)
Hazard Class	Not Available (Determine by test results)
Label(S) Required	Not Available (Determine by test results)

15. REGULATORY INFORMATION

SPECIFIC U.S. EPA REGULATIONS: Toxic Substance Control Act: Components of this material (see section 3) are listed in the TSCA inventory.

CERCLA: Components of this material (section 3) are listed as Hazardous Substances

EPA Superfund Amendment and Reauthorization Act (SARA) of 1986 Section 311/312(SARA Title III): Components of this material (section 3) are listed in SARA Title III, Section 311/312

EPA, SARA Section 313: Components of this material (section 3) are listed Section 313 and subject to Toxic Release Inventory reporting.

SARA Title III Hazard Categorization: Dust and fume are categorized as an immediate (acute) health hazard and a delayed (chronic) health hazard as defined by 40 CFR 370. Product is not categorized as a fire hazard, reactivity hazard or pressure release hazard.

CALIFORNIA PROPOSITION 65: Listed components known by the state to cause cancer, including Nickel, and Cobalt (metal powder). As sold, nickel is in alloy form. See section 3 for other constituents. During welding, melting, etc., may produce oxides and other compounds of the metals listed in section 3 including hexavalent chromium compounds which are listed in California's "Safe Drinking Water and Toxic Enforcement Act of 1986" (Proposition 65).

16. OTHER INFORMATION

Revision Date: August 5, 2015

This information is designed only as guidance for safe handling, use, storage, transportation, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Information contained herein is believed to be true and accurate at the date of its publication, but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material, or the results to be obtained from the use thereof. Compliance with all applicable Federal, State, and local laws and regulations remain the responsibility

Trademarks: Several materials described in these Safety Data Sheets are proprietary alloys produced under license from various manufacturers. They are identified by the following subscript numbers:

¹Registered Trademark of AK Steel Corporation

²Registered Trademark of Carpenter Technology Corporation

³Registered Trademark of Special Metals Corporation

⁴Registered Trademark of ATI Allegheny Companies

⁵Registered Trademark of Haynes International, Inc.

⁶Registered Trademark of United Technologies Corporation

MATERIAL SAFETY DATA SHEET

Date Prepared: 1/30/13

Revision No.: 2.0

SECTION 1: Product and Manufacturer Information

Product Description:

VentureClad®

Product Designations:

1577CW

Manufacturer:

GTA-NHT, Inc.

Venture Tape

800-343-1076

30 Commerce Road

Rockland, MA 02370

www.venturetape.com

SECTION 2: Hazardous Components

The above listed products may contain one or more hazardous chemical components. However, due to their incorporation into the structure of the products, exposure to such components is not anticipated under normal conditions of use. See section 16 for further discussion.

SECTION 3: Description of Hazards

Exposure to hazards of chemical components is not anticipated in normal use.

SECTION 4: First Aid Measures

Clean and dress wound if cut by product edge. There are no known acute, immediate effects requiring treatment as a result of the use of this product as supplied.

MATERIAL SAFETY DATA SHEET

Pressure Sensitive Tape Products (continued)

Page 2 of 3

SECTION 5: Fire-fighting Measures

All extinguishing chemicals and methods are applicable. Self-contained, positive pressure breathing apparatus should be used if available in fire conditions. Fire or very high temperatures (not normal conditions of use) can cause release of toxic smoke and fumes.

SECTION 6: Accidental Release Measures

Not applicable.

SECTION 7: Handling and Storage Guidelines

Use care to avoid paper cuts from sheet edges. No other special handling or storage precautions apply in respect to potential hazards.

SECTION 8: Exposure Controls and Personal Protection

None required in normal use. Exercise care to avoid paper cuts from sheet edges.

SECTION 9: Physical and Chemical Properties

Product is a manufactured article in the form of a flexible sheet or strip. Contains some combination of two or more of the following major material components: paper, plastic film, aluminum foil, reinforcing yarn, adhesive.

SECTION 10: Stability and Reactivity

Hazardous decomposition will occur only under fire conditions. Various harmful compounds could be formed during combustion. No hazards associated with normal use.

SECTION 11: Toxicological Information

Although hazardous chemicals may be used in this product, exposure to those chemicals and possible hazardous effects will not occur with the product in this form, in normal use.

MATERIAL SAFETY DATA SHEET

Pressure Sensitive Tape Products (continued)

Page 3 of 3

SECTION 12: Ecological Information

The anticipated instances of release into the environment would be during disposal of scrapped building materials, of which this product could be a part, or waste during use. Other than the paper component, the materials of construction are very resistant to biodegradation and are not water soluble.

SECTION 13: Disposal Considerations

Dispose of per appropriate local regulations. Product is not recyclable.

SECTION 14: Transport Information

No special procedures required.

SECTION 15: Regulatory Information

No known regulations apply.

SECTION 16: Other Information

Per the Code of Federal Regulations 1910.1200, this product is considered by Venture Tape to be an *article*, defined in the regulation as "a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees."

Although this product may contain hazardous components, we do not believe those hazards are present as manufactured or when used. Since the product meets the definition of an article, it is technically not subject to this regulation or MSDS reporting. This document is provided for informational purposes, and is not meant to imply that this product is hazardous.



SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

1.1 Product Identifier: Versi-Foam Systems 1, 9, 15, 50, and 1.75 pcf Refillable – Standard – Component A

1.2 Relevant identified uses of the substance or mixture and uses advised against:

General Use: Component in low pressure polyurethane foam, Component A, for professional use only.

Uses Advised Against: No further information available.

1.3 Details of the supplier of the Safety Data Sheet:

Manufacturer/Supplier: RHH Foam Systems, Inc.
5500 S. Westridge Dr.
New Berlin, WI 53151 USA
1-800-657-0702 / 262-754-8088

1.4 Emergency telephone numbers:

Within the USA: CHEMTREC (contract #18811) (24 hours) 1-800-424-9300
International: CHEMTREC (contract #18811) (24 hours) 001-703-527-3887

SECTION 2 – HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture:

Product definition: Mixture

OSHA/GHS Classification: Gases Under Pressure – Compressed Gas
Respiratory Sensitizer Category 1
Skin Sensitizer Category 1
Skin Irritant Category 2
Eye Irritant Category 2B
Specific Organ Toxicity – Single Exposure Category 3 (STOT SE 3)

2.2 Label elements: (Regulation (EC) No 1272/2008)

Hazard Symbols:



Signal Word: DANGER

Hazard Statement(s):

H280: Contains gas under pressure; may explode if heated.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H320: Causes eye irritation.
H334: May cause allergy or asthma like symptoms or breathing difficulties if inhaled.
H335+H336: May cause respiratory irritation, drowsiness, or dizziness.

Precautionary Statement(s):

P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P251: Pressurized container: Do not pierce or burn, even after use.
P261: Avoid breathing vapor, mist, or spray.
P262: Do not get in eyes, on skin, or on clothing.
P264: Wash hands thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P272: Contaminated work clothing must not be allowed out of the workplace.
P280: Wear protective gloves/protective clothing/eye protection/ face protection.
P284: In case of inadequate ventilation: wear respiratory protection.
P302+P352+P333+P313: IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342+P312: If experiencing respiratory symptoms or feel unwell: Call a POISON CENTER or doctor.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P362: Take off contaminated clothing and wash it before reuse.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

P410: Protect from sunlight.

P411: Store at temperatures not exceeding 120°F (48°C).

P412: Do not expose to temperatures exceeding 250°F (121°C).

P501: Dispose of contents/container in accordance with local, state, national, and international regulations.

Hazards Not Otherwise Classified:

Tetrafluoroethane vapors may displace oxygen and cause asphyxiation. System is pressurized.

1% of the mixture consists of ingredient(s) of unknown acute toxicity

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components	CAS #	% by Weight
Polymethylene polyphenyl isocyanate containing 4,4' Methylene bisphenyl isocyanate	009016-87-9 000101-68-8	90-100%
Tetrafluoroethane	811-97-2	5-10%

SECTION 4 – FIRST-AID MEASURES

4.1 Description of first aid measures:

Eyes: Flush eyes with large amounts of water for at least 15 minutes. Get medical attention.

Skin: Wash skin thoroughly with large amounts of water. Consult a physician if irritation develops or persists. Remove contaminated clothing and wash before re-use. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a Polyglycol-based skin cleanser or corn oil may be more effective than soap and water.

Inhalation: If affected by vapors, remove patient to fresh air and get medical attention. Give oxygen or artificial respiration if necessary. Do not give stimulants. Epinephrine and similar drugs may adversely affect the heart due to a possible risk of eliciting cardiac dysrhythmias.

Ingestion: If swallowed, do not induce vomiting. Get medical attention immediately. The hazard of aspirating material into the lungs is greater than the hazard associated with allowing material to progress through the intestinal tract.

4.2 Note to physician:

No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, Expectorants, and Antitussives may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed for 24-48 hours for signs of respiratory distress.

SECTION 5 – FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: Carbon Dioxide, Dry Chemical, or Alcohol Foam are preferred. Water is not recommended but may be applied in large amounts as a fine spray if other extinguishing media are not available.

Unsuitable extinguishing media: Do not use direct water stream as it may spread fire. Product reacts with water. Reaction may be violent, producing heat and gases.

5.2 Special hazards arising from the substance or mixture:

During a fire dense smoke will be produced containing the original material as well as unidentified toxic or irritating compounds. Hazardous combustion products may include, but are not limited to, nitrogen oxides, isocyanates, hydrogen cyanide, carbon monoxide, and carbon dioxide. Sealed container may rupture from gases generated in a fire situation. Spills of these organic liquids on hot fibrous insulations may lead to lowering of the auto-ignition temperatures. This may result in spontaneous combustion.

5.3 Protective equipment / Precautions for fire-fighters:

Fire-fighters should wear full protective fire-fighting gear including a full face piece, positive-pressure self-contained breathing apparatus (SCBA). Avoid contact with this material during fire-fighting operations. Consider fighting fire from a remote location with unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from area if you hear rising sound from a venting safety device or the container discolors.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Always clear area and use protective equipment (as recommended in Section 8) before attempting to stop spill. Wear suitable chemical resistant clothing including foot protection. Always wear eye protection and gloves when handling this product. Avoid any contact. Barricade area. Clear non-emergency personnel from area. Keep upwind of spill. Ventilate area of leak or spill. The area must be evacuated and reentered by persons equipped for decontamination.

6.2 Environmental precautions:

Contain liquid to prevent contamination of soil, surface water or ground water. Keep out of ditches, sewers, and water supplies.

6.3 Methods and materials for containment and cleaning up:

Should the product enter sewers or drains, it should be pumped into an open vessel. Emergency services may need to be called to assist in the cleanup operation.

Supplies of suitable decontaminant should always be kept available. Absorb with material such as: sawdust, vermiculite, dirt, sand, clay, cob grit, Millisorb. Avoid materials such as cement powder. Collect material in suitable and properly labeled open containers. Do not place in sealed container. Prolonged contact with water results in a chemical reaction which may result in rupture of the container. Place in: poly lined fiber packs, plastic drums, or properly labeled metal containers. Remove to a well-ventilated area. Clean up floor areas. Attempt to neutralize by decontaminant solution: formulation 1: Sodium Carbonate 5-10%; Liquid Detergent 0.2%; Water to make up to 100%. Or formulation 2: Concentrated ammonia solution 3-8%; Liquid Detergent 0.2%; Water to make up 100%. If ammonia is used, use good ventilation to prevent vapor exposure. If you have any questions on how to neutralize call RHH Foam Systems, Inc.

SECTION 7 – HANDLING AND STORAGE

7.1 Precautions for safe handling:

Wear proper protective equipment (as recommended in Section 8) and provide proper ventilation during and after application. Avoid contact of this product with water at all times during handling and storage. Do not eat, drink, or smoke where this product is used. Keep equipment clean and use disposable containers and tools whenever possible.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a cool, covered, well-ventilated place away from direct sunlight. Keep container tightly closed and store locked up in an upright position. Do not expose to moisture. Do not expose to excessive heat. Do not allow to freeze. Ideal storage temperatures are 65°-90°F (18°-32°C). Keep out of reach of children.

SECTION 8 – EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters:

Ingredient	CAS #	OSHA PEL	ACGIH TLV	WEEL TWA
4,4' Methylene bisphenyl isocyanate	000101-68-8	0.2 mg/m ³ ; 0.02 ppm	0.05 mg/m ³ ; 0.005 ppm	
1,1,1,2 Tetrafluoroethane	811-97-2			4240 mg/m ³ ; 1000 ppm

8.2 Exposure controls:

Engineering controls:

Use only with adequate ventilation. Provide exhaust ventilation to control airborne concentrations. Exhaust systems should be designed to move the air away from workers and the work area. Odor is an inadequate warning of excessive exposure.

Protective equipment:

Eye protection: Wear chemical resistant safety goggles.

Hand protection: Wear chemically resistant gloves such as: nitrile/butadiene (NBR), neoprene, butyl rubber or PVC (vinyl). An individual's body reaction to specific glove materials should be considered during the selection process and verified prior to the application. The break through time of the selected glove must be greater than the intended period of use.

Other protective equipment: Wear chemical resistant clothing such that no skin is exposed.

Respiratory protection: If concentration levels exceed exposure limits, use a NIOSH approved air-purifying respirator equipped with an organic vapor cartridge and particle filter (P100). Employers are required to implement a cartridge change-out schedule for such respirators. If concentration levels are unknown or extremely high use a positive-pressure self-contained breathing apparatus.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance: Brown liquid	LFL/UFL: Not Applicable.
Odor: Slightly musty	Vapor Pressure: <1 x 10 ⁻⁵ mmHg @ 25°C (77°F)
Odor Threshold: Well above the exposure limits.	Vapor Density: 8.5 (air = 1)
pH: No Data.	Relative Density: 1.24 @ 20°C
Melting Point: No Data.	Solubility: Reacts with water.
Freezing Point: No Data.	Partition Coefficient: No Data
Boiling Point: 410°F (210°C) @ 5 mmHg	Auto-Ignition Temp.: >1100°F (600°C)
Flash Point: >400°F (204°C)	Viscosity: No Data
Evaporation Rate: No Data.	

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity:

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability:

Stable under recommended storage conditions (per section 7).

10.3 Possibility of hazardous reactions:

Material reacts slowly with water releasing carbon dioxide. This reaction can cause pressure to build and closed containers to rupture. Elevated temperatures accelerate this reaction.

10.4 Conditions to avoid:

Heat, flames, welding arcs, and atmospheric moisture.

10.5 Incompatible materials:

Acids, alcohols, water, amines, ammonia, bases, and strong oxidizers. Avoid contact with metals such as: aluminum, zinc, brass, copper, galvanized metals, and tin.

10.6 Hazardous decomposition products:

Hazardous decomposition products vary depending upon temperature, air supply, and presence of other materials. Gases, such as, carbon monoxide and carbon dioxide are likely.

SECTION 11 – TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects:**

Likely Routes of Exposure: Inhalation, ingestion, skin, and eye contact.

Toxicity Data:

Oral – LD50 = >10,000 mg/kg

Dermal – LD50 = >2000 mg/kg

Effects and Symptoms:

Immediate: May cause eye and skin irritation. Excessive exposure by inhalation may cause irritation of the eyes, respiratory tract, and lungs. Pulmonary edema may also occur. Tetrafluoroethane vapors may cause drowsiness or dizziness. Excessive exposure can lead to unconsciousness or asphyxiation.

Delayed: Respiratory symptoms may not present for several hours.

Chronic: May cause skin and respiratory sensitization. Skin contact may play a role in respiratory sensitization. Sensitized individuals may have allergic reactions to concentrations below exposure guidelines. Repeated, excessive exposures to MDI aerosols have been shown to cause tissue injury to the upper respiratory tract and lungs in laboratory animals. Decreased lung function has been associated with overexposure to isocyanates.

Carcinogen: Lung tumors have been observed in lab animals in correlation with persistent lung injury caused by repeated, excessive exposures to aerosols. Such exposures are unlikely to occur in actual working environments.

SECTION 12 – ECOLOGICAL INFORMATION**12.1 Ecotoxicity:**

Based on information for MDI and polymeric MDI. The ecotoxicity measurement is that of the hydrolyzed product generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100mg/L in the most sensitive species). The LC50 for earthworm *isenia foetida* is >1000 mg/kg.

12.2 Persistence and degradability:

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polymers which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

12.3 Bioaccumulative potential:

No data available.

12.4 Mobility in soil:

Movement is expected to be limited by the product's reactivity with water, forming predominantly insoluble polymers.

12.5 Results of PBT and vPvB assessment:

No data available.

12.6 Other adverse effects:

None known.

SECTION 13 – DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods:****Procedure for handling empty or partially used disposable cylinders:**

Versi-Foam® is best disposed of as solid material as opposed to the liquid chemicals. To that end, we recommend the following:

Empty remaining chemicals, if any, into a waste container. Make sure that the waste container contains both "A" and "B" chemicals. They do not have to be on ratio, but they both must be present. Mix the waste chemical blend with a stick so that it becomes a solid substance. This substance can then be disposed of as solid industrial waste.

VENTING OF THE TANKS: Turn the tanks upside down. Open tank valves. Leave in this position for 24 hours. Any remaining pressure should be evacuated from the tanks within this period of time.

If only one of the chemicals remains within the container, the chemical must be absorbed and possibly neutralized before disposal.

For "A" chemical remaining, follow this procedure:

Always wear respiratory protection. After venting tanks, empty "A" chemical into a waste container. Absorb chemical with a dry oil-absorbent material (for example sawdust or vermiculite). Remove to an outdoor or extremely well ventilated area. Decontaminate with solution of 90-95 parts water, 2-8 parts aqueous ammonia solution and .03-.05 parts liquid detergent. Be sure to add 10%-20% of this decontamination solution to the absorbed chemical. DO NOT SEAL THE CONTAINER. Allow to stand for 72 to 96 hours. Dispose of as solid industrial waste.

Waste, Residue, or Chemical: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. The preferred option for disposal is sending waste to a licensed and permitted recycler, reclaimer, incinerator, or other thermal destruction device. All disposal methods must be in compliance with local, state, national, and international regulations. Compliance with these regulations is the sole responsibility of the waste generator. RHH FOAM SYSTEMS, INC. HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION.

Container: Containers may contain residue and should be treated with the same considerations as the product itself. Dispose of vented empty tanks as ordinary industrial waste. Check with your City Department of Public Works for more information.

Procedure for handling empty refillable tanks:

Refillable tanks, measuring in 9 gallons or larger, should be returned to RHH Foam Systems Inc., where they will be cleaned, refilled and re-distributed.

SECTION 14 – TRANSPORT INFORMATION

Note: The U.S. Department of Transportation requires that any person preparing a hazardous material for shipping, including packing, marking, labeling and preparation of documents must be trained in accordance with 49 CFR Parts 100 – 185. Contact the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration at <http://phmsa.dot.gov/hazmat> at 1-800-467-4922 or email: phmsa.hm-training@dot.gov for information on their CD ROM Training Module for Hazardous Materials Transportation.

	Versi-Foam Systems 9, 15, 50, & 1.75 pcf Refillable	Versi-Foam System I
DOT (Ground)	UN #: UN3500 Shipping Name: Chemical Under Pressure, N.O.S. (Nitrogen) Shipping Class: 60 Hazard Class: 2.2 Packing Group: N/A	Shipping Name: Consumer Commodity Shipping Class: 55 Hazard Class: ORM-D
IMDG (Ocean)	UN #: UN3500 Shipping Name: Chemical Under Pressure, N.O.S. (Nitrogen) Hazard Class: 2.2 Packing Group: N/A Marine Pollutant: No	UN #: UN1950 Shipping Name: Aerosols Hazard Class: 2.2 Packing Group: N/A Marine Pollutant: No
IATA (Air)	UN #: UN3500 Shipping Name: Chemical Under Pressure, N.O.S. (Nitrogen) Hazard Class: 2.2 Packing Group: N/A Packing Instructions: 218	UN #: UN1950 Shipping Name: Aerosols, non-flammable Hazard Class: 2.2 Packing Group: N/A Packing Instructions: 203
Bulk Transport (>5000 lb)	UN #: UN3500 Shipping Name: Chemical Under Pressure, N.O.S. (Nitrogen), RQ (Methylene Diphenyl Diisocyanate) Hazard Class: 2.2 Packing Group: N/A Special Precautions: None known	

Note: Additional certifications are required to ship hazardous material by ocean (IMDG) and air (IATA).

SECTION 15 – REGULATORY INFORMATION

15.1 Safety, health, and environmental regulations/legislations specific for the substance or mixture: (Not meant to be all-inclusive – selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown below. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that its activities comply with federal, state, provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state, provincial, and local laws and regulations.

U.S. Federal Regulations:

SARA 313 Information: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Chemical Name	CAS #	Concentration
Methylene Bis(Phenylisocyanate) (MDI)	000101-68-8	42-45%
Polymeric Diphenylmethane Diisocyanate	009016-87-9	100%

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

- An immediate health hazard
- A delayed health hazard

Toxic Substances Control Act (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.
The CAS numbers for TSCA are:

CAS# 009016-87-9

CAS# 000101-68-8

State Right-To-Know: The following product components are cited on certain lists as mentioned.

Chemical Name	CAS #	LIST
Methylene Bis(Phenylisocyanate) (MDI)	000101-68-8	NJ3, NJ2, PA1, PA3
Polymeric Diphenylmethane Diisocyanate	009016-87-9	NJ2

NJ2 = New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).

NJ3 = New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).

PA1 = Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%)

PA3 = Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%)

OSHA Hazard Communication Standard: This product is a "Hazard Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Comprehensive Environmental Response Compensation and Liability Act (CERCLA, or Superfund): This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA which may require reporting of releases:

Chemical Name	CAS #	Reportable Quantity (lbs.)	% in Product
Methylene bisphenyl isocyanate	000101-68-8	5000	42-45%

Canadian Regulations:

WHMIS Information: The Canadian Workplace Hazardous Materials System (WHMIS) Classification for this product is:

D2A – Respiratory tract sensitizer.

D2B – Eye or skin irritant.

D2B – Skin sensitizer.

CPR Statement: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and this Safety Data Sheet contains all the information required by the CPR.

Hazardous Products Act Information: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA Section 13 and 14):

Components	CAS #	% by Weight
Methylene Bis(Phenylisocyanate) (MDI)	000101-68-8	42-45%
Polymeric Diphenylmethane Diisocyanate	009016-87-9	90-100%

SECTION 16 – OTHER INFORMATION

NFPA Ratings:

Health	2
Flammability	1
Reactivity	1

SPECIAL HAZARD: Avoid Water

Other Information: The reaction of polyols and isocyanates generate heat. Contact of the reacting materials with skin or eyes can cause severe burns and may be difficult to remove from the affected areas. In addition, such contact increases the risk of isocyanate vapors.

Date of Preparation/Last Revision: August 1, 2015
Prepared by: RHH Foam Systems Inc.

WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF, RHH FOAM SYSTEMS INC. MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ANY LIABILITY FROM RELIANCE THEREON.



SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

- 1.1 Product Identifier:** Versi-Foam Systems 1, 9, 15, 50, and 1.75 pcf Refillable – Standard – Component B
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
General Use: Component in low pressure polyurethane foam, Component B, for professional use only.
Uses Advised Against: No further information available.
- 1.3 Details of the supplier of the Safety Data Sheet:**
Manufacturer/Supplier: RHH Foam Systems, Inc.
5500 S. Westridge Dr.
New Berlin, WI 53151 USA
1-800-657-0702 / 262-754-8088
- 1.4 Emergency telephone numbers:**
Within the USA: CHEMTREC (contract #18811) (24 hours) 1-800-424-9300
International: CHEMTREC (contract #18811) (24 hours) 001-703-527-3887

SECTION 2 – HAZARDS IDENTIFICATION

- 2.1 Classification of substance or mixture:**
Product definition: Mixture
OSHA/GHS Classification: Gases Under Pressure – Compressed Gas
Skin Irritant Category 2
Skin Irritant Category 2B
Specific Target Organ Toxicity – Single Exposure Category 3

- 2.2 Label elements:**
Hazard Symbols:

(Regulation (EC) No 1272/2008)



Signal Word:

DANGER

Hazard Statement(s):

H280: Contains gas under pressure; may explode if heated
H315: Causes skin irritation.
H320: Causes eye irritation.
H335: May cause respiratory irritation.
H360: May damage fertility of the unborn child if ingested.

Precautionary Statement(s):

P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P251: Pressurized container: Do not pierce or burn, even after use.
P261: Avoid breathing vapor, mist, or spray.
P264: Wash hands thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P281: Wear protective gloves/protective clothing/eye protection/ face protection.
P285: In case of inadequate ventilation: wear respiratory protection.
P302+P352+P332+P313: IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342+P312: If experiencing respiratory symptoms or feel unwell: Call a POISON CENTER or doctor.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P362: Take off contaminated clothing and wash it before reuse.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P410: Protect from sunlight.
P411: Store at temperatures not exceeding 120°F (48°C).

P412: Do not expose to temperatures exceeding 250°F (121°C).

P501: Dispose of contents/container in accordance with local, state, national, and international regulations.

Hazards Not Otherwise Classified:

Contains substances that can displace oxygen in the air.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components	CAS #	% by Weight
Polyol Blend	Unassigned	40-60%
Pentamethyldiethylenetriamine	3030-47-5	<1%
Organotin Mixture	280-57-9 1067-33-0 107-21-1	<1%
Flame Retardant Mixture	Unassigned	0-5%
Tetrafluoroethane, 1,1,1,2-	811-97-2	15-20%

SECTION 4 – FIRST-AID PROCEDURES

4.1 Description of first aid measures:

Eyes: Flush eyes with large amounts of water for at least 15 minutes. Get medical attention.

Skin: Wash skin thoroughly with large amounts of water. Consult a physician if irritation develops or persists. Remove contaminated clothing and wash before re-use.

Inhalation: If affected by vapors, remove patient to fresh air and get medical attention. Give oxygen or artificial respiration if necessary. Do not give stimulants. Epinephrine and similar drugs may adversely affect the heart due to a possible risk of eliciting cardiac dysrhythmias.

Ingestion: If swallowed, do not induce vomiting. Get medical attention immediately. The hazard of aspirating material into the lungs is greater than the hazard associated with allowing material to progress through the intestinal tract.

SECTION 5 – FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: Carbon Dioxide, Dry Chemical, or Alcohol Foam are preferred. Water is not recommended but may be applied in large amounts as a fine spray if other extinguishing media are not available.

Unsuitable extinguishing media: Do not use direct water stream as it may spread fire.

5.2 Special hazards arising from the substance or mixture:

May emit toxic or irritation fumes if burned. Sealed containers may build pressure if exposed to high temperatures as experienced in a fire. If safe to do, spray containers exposed to fire and heat with water to keep cool.

5.3 Protective equipment / Precautions for fire-fighters:

Fire-fighters should wear full protective fire-fighting gear including a full face piece, positive-pressure self-contained breathing apparatus (SCBA). Avoid contact with this material during fire-fighting operations. Consider fighting fire from a remote location with unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from area if you hear rising sound from a venting safety device or the container discolors.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Always clear area and use protective equipment (as recommended in Section 8) before attempting to stop spill. Wear suitable chemical resistant clothing including foot protection. Always wear eye protection and gloves when handling this product. Avoid any contact. Barricade area. Clear non-emergency personnel from area. Keep upwind of spill. Ventilate area of leak or spill. The area must be evacuated and reentered by persons equipped for decontamination.

6.2 Environmental precautions:

Contain liquid to prevent contamination of soil, surface water or ground water. Keep out of ditches, sewers, and water supplies.

6.3 Methods and materials for containment and cleaning up:

Contain and absorb spill with inert absorbent material. Shovel material into properly labeled containers for disposal.

SECTION 7 – HANDLING AND STORAGE

7.1 Precautions for safe handling:

Wear proper protective equipment (as recommended in Section 8) and provide proper ventilation during and after application. Avoid contact of this product with water at all times during handling and storage. Do not eat, drink, or smoke where this product is used. Keep equipment clean and use disposable containers and tools whenever possible.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a cool, covered, well-ventilated place away from direct sunlight. Keep container tightly closed and store locked up in an upright position. Do not expose to moisture. Do not expose to excessive heat. Do not allow to freeze. Ideal storage temperatures are 65°-90°F (18°-32°C). Keep out of reach of children.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 Control parameters:**

Ingredient	CAS #	OSHA PEL	ACGIH TLV	WEEL TWA
1,1,1,2 Tetrafluoroethane	811-97-2			4240 mg/m ³ ; 1000 ppm

8.2 Exposure controls:**Engineering controls:**

Mechanical or local exhaust is required to keep airborne concentrations at safe levels. Exhaust systems should be monitored regularly in case of obstruction.

Protective equipment:

Eye protection: Wear chemical resistant safety goggles.

Hand protection: Wear chemically resistant gloves such as: nitrile/butadiene (NBR), neoprene, butyl rubber or PVC (vinyl). An individual's body reaction to specific glove materials should be considered during the selection process and verified prior to the application. The break through time of the selected glove must be greater than the intended period of use.

Other protective equipment: Wear chemical resistant clothing such that no skin is exposed.

Respiratory protection: If concentration levels exceed exposure limits, use a NIOSH approved air-purifying respirator equipped with an organic vapor cartridge and particle filter (P100). Employers are required to implement a cartridge change-out schedule for such respirators. If concentration levels are unknown or extremely high use a positive-pressure self-contained breathing apparatus.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties:**

Appearance: Clear to Dark Amber liquid.
Odor: Faint ethereal odor.
Odor Threshold: No Data.
pH: No Data.
Melting Point: No Data.
Freezing Point: No Data.
Boiling Point: No Data.
Flash Point: >300°F (149°C)
Evaporation Rate: Faster than n-butyl acetate.

LFL/UFL: No Data
Vapor Pressure: <25 psia @ 25°C (77°F)
Vapor Density: Heavier than air
Relative Density: 1.16 @ 25°C (77°F)
Solubility: Negligibly soluble in water (<0.1%)
Partition Coefficient: No Data
Auto-Ignition Temp.: No Data
Viscosity: No Data

SECTION 10 – STABILITY AND REACTIVITY**10.1 Reactivity:**

Polyols react with isocyanates generating heat and gases. If product is contaminated pressure may build to hazardous levels in sealed containers.

10.2 Chemical stability:

Stable under recommended storage conditions (per section 7).

10.3 Possibility of hazardous reactions:

Hazardous polymerization will not occur.

10.4 Conditions to avoid:

Open flames, welding arcs, and other high temperature source can induce thermal decomposition.

10.5 Incompatible materials:

Avoid long storage in aluminum, other alkali or alkaline earth metals, or their alloys.

10.6 Hazardous decomposition products:

Carbon monoxide, carbon dioxide, hydrogen chloride and/or hydrogen fluoride, traces of phosphorous oxides, and traces of carbonyl halides such as phosgene.

SECTION 11 – TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects:**

Likely Routes of Exposure: Inhalation, ingestion, skin, and eye contact.

Toxicity Data:

Oral – LD50 (Estimated) = >2400 mg/kg
 Dermal – LD50 (Estimated) = >2300 mg/kg

Effects and Symptoms:

Immediate: Liquid contact can cause eye damage. Vapors may be irritating to eyes. Skin contact may cause irritation. Excessive inhalation of Tetrafluoroethane vapors can cause respiratory irritation, dizziness, and drowsiness. They may even cause unconsciousness or asphyxiation.

Delayed: If not properly cared for areas of skin exposure may develop serious irritation and drying.

Chronic: Ingestion may be damaging to fertility and the unborn child. Consult a physician if exposed. . Overexposure to Tetrafluoroethane can cause cardiac sensitization to epinephrine.

SECTION 12 – ECOLOGICAL INFORMATION**12.1 Ecotoxicity:**

No data available

12.2 Persistence and degradability:

No data available

12.3 Bioaccumulative potential:

No data available.

12.4 Mobility in soil:

No data available

12.5 Results of PBT and vPvB assessment:

No data available.

12.6 Other adverse effects:

This product contains a substance that may be toxic to fish and aquatic organisms.

Note: While there is no data on the ecotoxicity of this product it is always best practice, when handling any chemical, to prevent it from entering drains, sewers, soil, or any bodies of water.

SECTION 13 – DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods:****Procedure for handling empty or partially used disposable cylinders:**

Versi-Foam® is best disposed of as solid material as opposed to the liquid chemicals. To that end, we recommend the following:

Empty remaining chemicals, if any, into a waste container. Make sure that the waste container contains both "A" and "B" chemicals. They do not have to be on ratio, but they both must be present. Mix the waste chemical blend with a stick so that it becomes a solid substance. This substance can then be disposed of as solid industrial waste.

VENTING OF THE TANKS: Turn the tanks upside down. Open tank valves. Leave in this position for 24 hours. Any remaining pressure should be evacuated from the tanks within this period of time.

If only one of the chemicals remains within the container, the chemical must be absorbed and possibly neutralized before disposal.

For "B" chemical remaining, follow this procedure:

After venting tanks, empty "B" chemical into waste container. Absorb with dry oil-absorbent material (for example sawdust or vermiculite). . Dispose of as ordinary industrial waste.

Waste, Residue, or Chemical: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. The preferred option for disposal is sending waste to a licensed and permitted recycler, reclaimer, incinerator, or other thermal destruction device. All disposal methods must be in compliance with local, state, national, and international regulations. Compliance with these regulations is the sole responsibility of the waste generator. RHH FOAM SYSTEMS, INC. HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION.

Container: Containers may contain residue and should be treated with the same considerations as the product itself. Dispose of vented empty tanks as ordinary industrial waste. Check with your City Department of Public Works for more information.

Procedure for handling empty refillable tanks:

Refillable tanks, measuring in 9 gallons or larger, should be returned to RHH Foam Systems Inc., where they will be cleaned, refilled and re-distributed.

SECTION 14 – TRANSPORT INFORMATION

Note: The U.S. Department of Transportation requires that any person preparing a hazardous material for shipping, including packing, marking, labeling and preparation of documents must be trained in accordance with 49 CFR Parts 100 – 185. Contact the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration at <http://phmsa.dot.gov/hazmat> at 1-800-467-4922 or email: phmsa.hm-training@dot.gov for information on their CD ROM Training Module for Hazardous Materials Transportation.

	Versi-Foam Systems 9, 15, 50, & 1.75 pcf Refillable	Versi-Foam System 1
DOT (Ground)	UN #: UN3500 Shipping Name: Chemical Under Pressure, N.O.S. (Nitrogen) Shipping Class: 60 Hazard Class: 2.2 Packing Group: N/A	Shipping Name: Consumer Commodity Shipping Class: 55 Hazard Class: ORM-D
IMDG (Ocean)	UN #: UN3500 Shipping Name: Chemical Under Pressure, N.O.S. (Nitrogen) Hazard Class: 2.2 Packing Group: N/A Marine Pollutant: No	UN #: UN1950 Shipping Name: Aerosols Hazard Class: 2.2 Packing Group: N/A Marine Pollutant: No
IATA (Air)	UN #: UN3500 Shipping Name: Chemical Under Pressure, N.O.S. (Nitrogen) Hazard Class: 2.2 Packing Group: N/A Packing Instructions: 218	UN #: UN1950 Shipping Name: Aerosols, non-flammable Hazard Class: 2.2 Packing Group: N/A Packing Instructions: 203
Bulk Transport (>5000 lb)	UN #: UN3500 Shipping Name: Chemical Under Pressure, N.O.S. (Nitrogen), RQ (Methylene Diphenyl Diisocyanate) Hazard Class: 2.2 Packing Group: N/A Special Precautions: None known	

Note: Additional certifications are required to ship hazardous material by ocean (IMDG) and air (IATA).

SECTION 15 – REGULATORY INFORMATION

15.1 Safety, health, and environmental regulations/legislations specific for the substance or mixture:
(Not meant to be all-inclusive – selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown below. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that its activities comply with federal, state, provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state, provincial, and local laws and regulations.

U.S. Federal Regulations:

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1984 (SARA Title III) and is considered, under applicable definitions, to meet the following categories

An Immediate health hazard

A delayed health hazard

TSCA (Toxic Substances Control Act): Regulations 40 CFR 710 – All ingredients are on the TSCA Section 8 (b) Inventory.

Canadian Regulations:

The Workplace Hazardous Materials Information System (WHMIS) Classifications for this product are:

D1B

D2A

D2B

SECTION 16 – OTHER INFORMATION**Other Information:**

The reaction of polyols and isocyanates generate heat. Contact of the reaction materials with skin or eyes can cause severe burns and may be difficult to remove from the affected areas. Immediately wash the affected areas with plenty of water and seek medical assistance.

Date of Preparation/Last Revision: August 1, 2015
Prepared by: RHH Foam Systems Inc.

WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF, RHH FOAM SYSTEMS INC. MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ANY LIABILITY FROM RELIANCE THEREON.