

Silicone Caulk Clear/Aluminum
Silicone Caulk High Temperature
Silicone Caulk Multipurpose
Solder 95/5
Teflon Tape
Thread Cutting Oil

Boss
Boss
Boss
Bridgit
Blue Monster
Harvey

Blue Monster



THE MILL-ROSE COMPANY
CLEANFIT DIVISION
7310 Corporate Blvd. Mentor, OH 44060-4885
Toll Free: (800) 321-3598
Fax: (440) 255-1072 • E-Mail: info@cleanfit.com
Website: www.cleanfit.com

SAFETY DATA SHEET

Revision Date: Jun 1st 2015

SAFETY DATA SHEET FOR MILL-ROSE BLUE MONSTER[®] COMPRESSION SEAL TAPE

1. IDENTIFICATION OF SUBSTANCE OR PREPARATION AND THE COMPANY / UNDERTAKING

Product Name: Blue Monster[®] Compression Seal Tape
Trade Name: Dipoly Siloxane
Product Code: R1-5-8 series
Chemical Name / Synonyms: Silicone Rubber MIL A-A-59163
Most Common Intended Uses: Electrical splice protection, electrical insulation, mechanical seal.
Manufacturers Identification: The Mill-Rose Company
7310 Corporate Blvd. Mentor, OH 44060
www.cleanfit.com
Emergency Telephone: North America: 1-800-321-3598

2. HAZARDS IDENTIFICATION

Emergency Overview This product is a stable, chemically inert, opaque rubber material that has no known health effects in its final state.
Primary Route of Exposure Inhalation • Eye Contact • Skin Contact • Ingestion
Threshold Limit Value N/A
Potential Acute Health Effects None Known
Potential Chronic Health Effects None Known

Inhalation of airborne contamination generated during heat cure, or combustion should be avoided.

3. COMPOSITION / INFORMATION OF INGREDIENTS

Substances presenting a Health or Environmental hazard within the meaning of the Chemicals (Hazard Information & Packaging) Regulations 1994 as amended.

(Typical Values – Not Specifications)

Hazardous Components	Chemical Name	CAS #	%	
	Octamethylcyclo - tetrasiloxane	556-67-2	<2	
	Boric Acid	10043-35-3	<1	
	Amorphous Fumed Silica	112945-52-5	<40	**Dust Hazard
Perkadox PD-50S-PS-A	Di(2,4-dichlorobenzoyl) peroxide	133-14-2	<2	

ALL OTHER INGREDIENTS ARE NON HAZARDOUS AND ARE NOT LISTED SINCE PROPRIETARY.

** This material is encapsulated in a polymeric binder which eliminates airborne exposure to Dust Hazard

4. FIRST AID MEASURES

Eye Contact: Eye contact is not expected to occur during normal use of final product. No adverse health effects are expected from eye contact.
Skin Contact: No adverse health effects are expected from skin contact. Contact with skin during final product use is not expected to result in significant irritation.
Ingestion: Due to the physical state of this material, ingestion is unlikely to occur. No adverse health effects are expected from swallowing of the final product.
Inhalation: This product may have a characteristic odour; however, no adverse health effects are anticipated. Health effects from inhalation are not expected



THE MILL-ROSE COMPANY
CLEANFIT DIVISION
7310 Corporate Blvd. Mentor, OH 44060-4885
Toll Free: (800) 321-3598
Fax: (440) 255-1072 • E-Mail: info@cleanfit.com
Website: www.cleanfit.com

SAFETY DATA SHEET

Revision Date: Jun 1st 2015

unless the product is in combustion. If products of combustion are inhaled, remove to fresh air. Seek medical attention if respiratory irritation occurs, or breathing becomes difficult.

5. FIRE FIGHTING MEASURES

<i>Flash Point</i>	<i>Units</i>	<i>Method</i>	<i>Flammable Limits</i>	<i>LEL</i>	<i>UEL</i>
N/A	N/A	N/A	N/A	N/A	N/A

Extinguishing Media: Use standard fire fighting techniques to extinguish fires involving this material. DRY CHEMICAL, CARBON DIOXIDE, FINE WATER SPRAY.

Special Fire-Fighting Procedures: As in any fire, prevent human exposure to fire, smoke fumes, or products of combustion. Evacuate non-essential personnel from fire area. Fire fighters should wear full face, self contained breathing apparatus.

Unusual Fire and Explosion Hazards: None Known

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken in case material is released or spilled:

Remove material from floor. Dispose of material if contaminated.

Waste disposal method:

Dispose of in accordance with all local, state, federal and/or provincial regulations.

7. HANDLING & STORAGE

Precautions to be taken in handling and storing:

No required handling or storage pre-cautions. Ideally, store in the re-sealable bag provided. If possible apply stock rotation.

Engineering Controls

As dictated by use process.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection	Not normally required except for products of combustion.
Eye & Face Protection	Safety glasses or normal departmental safety requirements.
Protective Gloves	Not normally required.
Other Protective Equipment	Use good personal hygiene.
Ventilation	Not normally required. Local ventilation is recommended for high temperature processes.

9. PHYSICAL DATA

Boiling Point	N/A	Units	N/A
Vapour Pressure (mm Hg.)	N/A		
Vapour Density (air=1)	N/A		
Solubility In Water	Not Soluble		
Appearance	Rubbery Solid		
Specific Gravity(H₂O=1)	1.178		
Melting Point	N/A	Units	N/A
Evaporation Rate	N/A		
% Volatiles (by volume)	N/A		
Odour	Sweet Odour		



THE MILL-ROSE COMPANY
CLEANFIT DIVISION
7310 Corporate Blvd. Mentor, OH 44060-4885
Toll Free: (800) 321-3598
Fax: (440) 255-1072 • E-Mail: info@cleanfit.com
Website: www.cleanfit.com

SAFETY DATA SHEET

Revision Date: Jun 1st 2015

10. STABILITY & REACTIVITY DATA

Conditions Causing Instability	Product is stable
Incompatibility (materials to avoid)	None known.
Hazardous Decomposition Products	Carbon Monoxide, Carbon Dioxide, Silicon Dioxide
Hazardous Polymerization	Will Not Occur
Special Sensitivity	None

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: This material is not considered a carcinogen by IARC or NTP and is not regulated as a carcinogen by OSHA.

12. ECOLOGICAL INFORMATION

ECOTOXICITY

Testing performed on the product shows compliance to BS6920: Part1: 2000 - "Suitability of non-metallic products for use in direct contact with water intended for human consumption with regard to their effect on the water." The results show that it can be fully submersed up to 85°C with no effect on the quality of the water.

These test results indicate that there is no aquatic toxicity nor is there any risk to environmentally relevant organisms.

MOBILITY

There is no potential for the substance, if released to the environment, to transport to groundwater or far from the site of release.

PERSISTENCE AND DEGRADABILITY

The degradation half life of the product is not known.

Test results from the NFX 70-100 "Analysis of Gaseous Effluents Test" indicate a very low C.I.T (conventional index of toxicity) value: 5.20. If the product is incinerated, the resultant gaseous components are of low risk to the environment.

BIOACCUMULATIVE POTENTIAL

There is no potential of the substance to accumulate in biota and pass through the food chain.

K_{ow} N/A

Biological Concentration Factor N/A

OTHER ADVERSE EFFECTS

There is no potential of adverse environmental effects from the use of the substance. It has no ozone depletion potential. It has no photochemical ozone creation potential. It does not have the potential to accelerate global warming.

13. DISPOSAL CONSIDERATIONS

RCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste? **NO**

14. TRANSPORTATION INFORMATION

DOT Road Shipment Information (49 CFR 172.101)	Not subject to DOT.
Ocean Shipment (IMDG)	Not subject to IMDG code.
Air Shipment (IATA)	Not subject to IATA regulations.
EPA Hazard Waste:	N/A
OSHA Hazard Class:	N/A
WHMIS Classification:	No known WHMIS class
NFPA/HMIS Classification:	HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0



THE MILL-ROSE COMPANY
CLEANFIT DIVISION
7310 Corporate Blvd. Mentor, OH 44060-4885
Toll Free: (800) 321-3598
Fax: (440) 255-1072 • E-Mail: info@cleanfit.com
Website: www.cleanfit.com

SAFETY DATA SHEET

Revision Date: Jun 1st 2015

15. REGULATORY INFORMATION

CERCLA

The Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) requires notification to the National Response Centre for releases of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in 40 CFR 302.4 (for CERCLA 102).

Components present in this product at a level which could require reporting under the statute are:

Chemical Name	CAS #	Maximum Concentration (Wt. %)
Silica, amorphous, fumed, crystalline-free	112945-52-5	40%

SARA Title III, section 311/312

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311, and 312).

Components present in this product at a level which could require reporting under the statute are:

Chemical Name	CAS #	Maximum Concentration (Wt. %)
Silica, amorphous, fumed, crystalline-free	112945-52-5	40%

SARA Title III, section 313

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313).

Components present in this product at a level which could require reporting under the statute are:

Chemical Name	CAS #	Maximum Concentration (Wt. %)
Silica, amorphous, fumed, crystalline-free	112945-52-5	40%

TSCA

The components of this mixture are listed in the Toxic Substance Control Act Inventory of Chemical Substances.

This product does not contain any chemicals that would require export notification under Section 12(b) of the TSCA regulation.

16. OTHER INFORMATION

The information contained in this safety data sheet is provided in accordance with the requirements of the Chemicals (Hazard Information & Packaging) Regulations. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of issues of the product are outside the suppliers control the user is responsible for ensuring that the requirements of relevant legislation are complied with. TP-21

The information contained in this Safety Data Sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Further Information and relevant advice can be found in:-

The Control of Substances Hazardous to Health Regulations 1994 (SI 1994:3246)

The Manual Handling Operations Regulations 1992 (SI 1992:2793)

Storage of Packaged Dangerous Substances HS (G) 71

The Environmental Protection (Duty of Care) Regulations 1992 (SI 1988: 2839)

DISCLAIMER

The Mill-Rose Company believes, to the best of its knowledge, information, and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials and make no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and data to comply with all applicable international, federal, state, and local laws and regulations.

BOC Gases

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
1 / 15

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

1.1 Product identifier

Product name: Acetylene, dissolved

Trade name: Acetylene

Additional identification

Chemical name: acetylene (ethyne)

Chemical formula: C₂H₂

INDEX No. 601-015-00-0

CAS-No. 74-86-2

EC No. 200-816-9

REACH Registration No. 01-2119457406-36-0041

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Industrial and professional. Perform risk assessment prior to use.
Fuel gas for welding, cutting, heating, brazing and soldering applications. Use as a fuel. Use for electronic component manufacture. Using gas alone or in mixtures for the calibration of analysis equipment. Using gas as feedstock in chemical processes. Formulation of mixtures with gas in pressure receptacles. Metal coating by spray gun. Lubrication of moulds for the manufacture of glass bottles.
Consumer use.

Uses advised against Fuel gas for welding, cutting, heating, brazing and soldering applications. Contact supplier for more information on uses. Uses other than those listed above are not supported.

1.3 Details of the supplier of the safety data sheet

Supplier

BOC
Priestley Road, Worsley
M28 2UT Manchester

Telephone: 0800 111 333

E-mail: ReachSDS@boc.com

1.4 Emergency telephone number: 0800 111 333

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
 Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
 2 / 15

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC as amended.

F+; R12 R5 R6

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended.

Physical Hazards

Flammable gas	Category 1	H220: Extremely flammable gas.
Chemically unstable gases	Category A	H230: May react explosively even in the absence of air.
Gases under pressure	Dissolved gas	H280: Contains gas under pressure; may explode if heated.

2.2 Label Elements



Signal Words: Danger

Hazard Statement(s): H220: Extremely flammable gas.
 H230: May react explosively even in the absence of air.
 H280: Contains gas under pressure; may explode if heated.

Precautionary Statement

Prevention: P202: Do not handle until all safety precautions have been read and understood.
 P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response: P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
 P381: Eliminate all ignition sources if safe to do so.

Storage: P403: Store in a well-ventilated place.

Disposal: P501: Dispose of cylinder via gas supplier only; cylinder contains a porous material which in some cases contains asbestos.

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
3 / 15

2.3 Other hazards:

For safety reasons, acetylene is dissolved in a solvent, either acetone (CAS No, 67-64-1) or N,N-dimethylformamide (DMF) (CAS No. 68-12-2). A small quantity of the solvent (as an impurity) may be carried over with the acetylene as it is used. The concentration of the solvent in the gas is below the limit which could affect the classification of the acetylene.

SECTION 3: Composition / information on ingredients

3.1 Substances

Chemical name acetylene (ethyne)
INDEX No.: 601-015-00-0
CAS-No.: 74-86-2
EC No.: 200-816-9
REACH Registration No.: 01-2119457406-36-0041
Purity: 100%

The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.

Trade name: Acetylene

SECTION 4: First Aid Measures

General: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

4.1 Description of first aid measures

Inhalation: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Eye contact: Adverse effects not expected from this product.

Skin Contact: Adverse effects not expected from this product.

Ingestion: Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed: Respiratory arrest.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: None.

Treatment: None.

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
4 / 15

SECTION 5: Firefighting Measures

General Fire Hazards: Heat may cause the containers to explode.

5.1 Extinguishing media

Suitable extinguishing media: Water Spray or Fog. Dry powder. Foam.

Unsuitable extinguishing media: Carbon dioxide.

5.2 Special hazards arising from the substance or mixture:

Fire or excessive heat may produce hazardous decomposition products. When involved in a fire, acetylene can begin to decompose, breaking down into its constituent elements of hydrogen and carbon. The decomposition reaction is exothermic and produces heat. Acetylene cylinders are designed to contain and inhibit decomposition of acetylene, however, if left unchecked decomposition could lead to cylinder failure. Acetylene may continue to be a hazard after a external fire has been extinguished, due to the decomposition of the acetylene within the cylinder, and requires specific operational procedures.

Hazardous Combustion Products: If involved in a fire the following toxic and / or corrosive fumes may be produced by thermal decomposition: carbon monoxide

5.3 Advice for firefighters

Special fire fighting procedures:

In case of fire: Stop leak if safe to do so. Do not extinguish flames at leak because possibility of uncontrolled explosive re-ignition exists. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out. Acetylene cylinders that have been heated, damaged by fire or subjected to a flash back must not be moved until it has been demonstrated that there is no decomposition of the acetylene within the cylinder. Acetylene cylinders should be cooled with a water spray and a hazard zone designated around them. Water cooling should be continued for at least one hour. After a minimum of one hour of water cooling the cylinder's temperature should be checked to see if it has been effectively cooled. Effectively cooled means bringing the cylinder shell temperature down to ambient temperature. The "Wetting test" and / or thermal imaging equipment should be used to ascertain if the cylinder shell has been effectively cooled. When effective cooling of the cylinder shell has been achieved, water cooling should be stopped. The cylinder should still not be moved for a further one hour, during this time temperature checks of the cylinder shell should be made every 15 minutes. If any increase in temperature is observed a further one hour continuous water cooling should be applied to the cylinder before its temperature is re-checked. When the cylinder shell temperature remains at ambient temperature for one hour without being water cooled, and is not leaking, the cylinder may be moved.

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
5 / 15

**Special protective equipment
for firefighters:**

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

SECTION 6: Accidental Release Measures

**6.1 Personal precautions,
protective equipment and
emergency procedures:**

Evacuate area. Provide adequate ventilation. Consider the risk of potentially explosive atmospheres. Eliminate all ignition sources if safe to do so. Monitor the concentration of the released product. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

6.2 Environmental Precautions:

Prevent further leakage or spillage if safe to do so.

**6.3 Methods and material for
containment and cleaning up:**

Provide adequate ventilation. Eliminate sources of ignition.

6.4 Reference to other sections:

Refer to sections 8 and 13.

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
6 / 15

SECTION 7: Handling and Storage:

7.1 Precautions for safe handling:

Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Purge air from system before introducing gas. Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Assess the risk of a potentially explosive atmosphere and the need for suitable equipment i.e. explosion-proof. Take precautionary measures against static discharges. Keep away from ignition sources (including static discharges). Provide electrical earthing of equipment and electrical equipment usable in explosive atmospheres. Use only non-sparking tools. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Ensure the complete system has been (or is regularly) checked for leaks before use. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local / regional / national / international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place. Avoid suckback of water, acid and alkalis. Solvent may accumulate in piping systems. For maintenance use appropriately chemically resistant gloves and goggles. Only equipment fitted with suitable means of preventing a 'flash back' should be fitted to the cylinders. Mechanical shock alone to a cold acetylene cylinder cannot initiate decomposition. For further information on safe use refer to EIGA "Code of Practice: Acetylene" IGC Doc 123.

SAFETY DATA SHEET

Acetylene, dissolved

Issue Date: 25.01.2016
Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
7 / 15

7.2 Conditions for safe storage, including any incompatibilities:

All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere. Segregate from oxidant gases and other oxidants being stored. Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material. Acetylene cylinders should be stored vertically. If a cylinder has been transported horizontally, it should be stood upright for a minimum of 1 hour prior to use. This will allow the acetone to evenly re-distribute within the cylinder and prevent acetone being carried into the flame during use causing a 'flame thrower' effect.

7.3 Specific end use(s):

None.

SECTION 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

DNEL-Values

Critical component	type	Value	Remarks
acetylene (ethyne)	Worker - inhalative, long-term - systemic	2500 ppm	-
	Worker - inhalative, short-term - systemic	2500 ppm	-

PNEC-Values

Critical component	type	Value	Remarks
acetylene (ethyne)			PNEC not available.

8.2 Exposure controls

Appropriate engineering controls:

Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate general and local exhaust ventilation. Keep concentrations well below lower explosion limits. Gas detectors should be used when quantities of flammable gases or vapours may be released. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Systems under pressure should be regularly checked for leakages. Product to be handled in a closed system. Use only permanent leak tight installations (e.g. welded pipes). Take precautionary measures against static discharges.

SAFETY DATA SHEET

Acetylene, dissolved

Issue Date: 25.01.2016
Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
8 / 15

Individual protection measures, such as personal protective equipment

General information:	A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. Do not eat, drink or smoke when using the product.
Eye / face protection:	Safety eyewear, goggles or face-shield to EN166 should be used to avoid exposure to liquid splashes. Wear eye protection to EN 166 when using gases. Guideline: EN 166 Personal Eye Protection.
Skin protection	
Hand Protection:	Wear working gloves while handling containers Guideline: EN 388 Protective gloves against mechanical risks.
Body protection:	Wear fire / flame resistant / retardant clothing. Guideline: ISO / TR 2801:2007 Clothing for protection against heat and flame -- General recommendations for selection, care and use of protective clothing.
Other:	Wear safety shoes while handling containers Guideline: ISO 20345 Personal protective equipment - Safety footwear.
Respiratory Protection:	Not required.
Thermal hazards:	No precautionary measures are necessary.
Hygiene measures:	Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.
Environmental exposure controls:	For waste disposal, see section 13.

SECTION 9: Physical And Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:	Gas
Form:	Dissolved gas
Colour:	Colorless
Odour:	Garlic-like odor
Odour Threshold:	Odour threshold is subjective and is inadequate to warn of over exposure.
pH:	not applicable.
Melting Point:	-80.7 °C
Boiling Point:	-84.7 °C (101.3 hPa)

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
 Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
 9 / 15

Sublimation Point:	not applicable.
Critical Temp. (°C):	35.0 °C
Flash Point:	Not applicable to gases and gas mixtures.
Evaporation Rate:	Not applicable to gases and gas mixtures.
Flammability (solid, gas):	Flammable gas
Flammability limit - upper (%):	99.99 %(V)
Flammability limit - lower(%):	2.3 %(V)
Vapour pressure:	698.5968 kPa (25 °C)
Vapour density (air=1):	0.91 AIR=1
Relative density:	0.6208 (-82 °C)4 °C
Solubility(ies)	
Solubility in Water:	1,200 mg / l (25 °C)
Partition coefficient (n-octanol / water):	0.37
Autoignition Temperature:	305 °C
Decomposition Temperature:	635 °C
Viscosity	
Kinematic viscosity:	No data available.
Dynamic viscosity:	0.011 mPa.s
Explosive properties:	Not applicable.
Oxidising Properties:	not applicable.

9.2 Other information: None.

Molecular weight: 26.02 g / mol (C₂H₂)

SECTION 10: Stability and Reactivity

10.1 Reactivity:	No reactivity hazard other than the effects described in sub-section below.
10.2 Chemical Stability:	Stable under normal conditions.
10.3 Possibility of Hazardous Reactions:	Can form a potentially explosive atmosphere in air. May react violently with oxidants. Forms explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper.
10.4 Conditions to Avoid:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. High temperature High pressure May decompose violently at high temperature and/ or pressure or in the presence of a catalyst.
10.5 Incompatible Materials:	Air and oxidisers. For material compatibility see latest version of ISO-11114. Avoid contact with pure copper, mercury, silver and brass with greater than 65% copper. Do not use alloys containing more than 43% silver. For further information on safe use refer to EIGA "Code of Practice: Acetylene" IGC Doc 123.

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
 Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
 10/15

10.6 Hazardous Decomposition
Products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced. If involved in a fire the following toxic and /or corrosive fumes may be produced by thermal decomposition: The following decomposition products may be produced: carbon monoxide

SECTION 11: Toxicological Information

General information: None.

11.1 Information on toxicological effects

Acute toxicity - Oral
Product

Based on available data, the classification criteria are not met.

Acute toxicity - Dermal
Product

Based on available data, the classification criteria are not met.

Acute toxicity - Inhalation
Product

Based on available data, the classification criteria are not met.

acetylene (ethyne) LOEC: 100000 ppm

Skin Corrosion / Irritation
Product

Based on available data, the classification criteria are not met.

Serious Eye Damage / Eye Irritation
Product

Based on available data, the classification criteria are not met.

Respiratory or Skin Sensitisation
Product

Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity
Product

Based on available data, the classification criteria are not met.

Carcinogenicity
Product

Based on available data, the classification criteria are not met.

Reproductive toxicity
Product

Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure
Product

Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
Product

Based on available data, the classification criteria are not met.

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
 Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
 11 / 15

**Aspiration Hazard
 Product**

Not applicable to gases and gas mixtures..

SECTION 12: Ecological Information

12.1 Toxicity

**Acute toxicity
 Product**

No ecological damage caused by this product.

Acute toxicity - Fish
 acetylene (ethyne)

LC 50 (Various, 96 h): 545 mg / l Remarks: QSAR

Acute toxicity - Aquatic Invertebrates
 acetylene (ethyne)

EC 50 (Water flea (Daphnia magna), 48 h): 242 mg / l

Toxicity to microorganisms
 acetylene (ethyne)

EC 50 (Alga, 72 h): 57 mg / l

**12.2 Persistence and Degradability
 Product**

Not applicable to gases and gas mixtures..

**12.3 Bioaccumulative Potential
 Product**

The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

**12.4 Mobility in Soil
 Product**

Because of its high volatility, the product is unlikely to cause ground or water pollution.

**12.5 Results of PBT and vPvB
 assessment
 Product**

Not classified as PBT or vPvB.

12.6 Other Adverse Effects:

No ecological damage caused by this product.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

General information:

Do not discharge into any place where its accumulation could be dangerous. Consult supplier for specific recommendations. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Dispose of cylinder via gas supplier only; cylinder contains a porous material which in some cases contains asbestos.

SAFETY DATA SHEET
Acetylene, dissolvedIssue Date: 25.01.2016
Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
12 / 15**Disposal methods:**

Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes**Container:**

16 05 04*: gases in pressure containers (including halons) containing dangerous substances

SECTION 14: Transport Information**ADR**

14.1 UN Number: UN 1001
14.2 UN Proper Shipping Name: ACETYLENE, DISSOLVED
14.3 Transport Hazard Class(es)
Class: 2
Label(s): 2.1
Hazard No. (ADR): 239
Tunnel restriction code: (B/D)
Emergency Action Code: 2SE
14.4 Packing Group: -
14.5 Environmental hazards: not applicable
14.6 Special precautions for user: -

RID

14.1 UN Number: UN 1001
14.2 UN Proper Shipping Name: ACETYLENE, DISSOLVED
14.3 Transport Hazard Class(es)
Class: 2
Label(s): 2.1
14.4 Packing Group: -
14.5 Environmental hazards: not applicable
14.6 Special precautions for user: -

IMDG

14.1 UN Number: UN 1001
14.2 UN Proper Shipping Name: ACETYLENE, DISSOLVED
14.3 Transport Hazard Class(es)
Class: 2.1
Label(s): 2.1
EmS No.: F-D, S-U
14.3 Packing Group: -
14.5 Environmental hazards: not applicable
14.6 Special precautions for user: -

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
 Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
 13 / 15

IATA

14.1 UN Number: UN 1001
 14.2 Proper Shipping Name: Acetylene, dissolved
 14.3 Transport Hazard Class(es):
 Class: 2.1
 Label(s): 2.1
 14.4 Packing Group: –
 14.5 Environmental hazards: not applicable
 14.6 Special precautions for user: –
 Other information
 Passenger and cargo aircraft: Forbidden.
 Cargo aircraft only: Allowed.

14.7 Transport in bulk according to Annex II of MARPOL73 / 78 and the IBC Code: not applicable

Additional identification: Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

SECTION 15: Regulatory information

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

EU Regulations

Regulation (EC) No. 1907 / 2006 Annex XVII Substances subject to restriction on marketing and use:

Chemical name	CAS-No.	Concentration
acetylene (ethyne)	74-86-2	100%

Directive 96 / 82 / EC (Seveso II): on the control of major accident hazards involving dangerous substances:

Chemical name	CAS-No.	Concentration
acetylene (ethyne)	74-86-2	100%

Directive 98 / 24 / EC on the protection of workers from the risks related to chemical agents at work:

Chemical name	CAS-No.	Concentration
acetylene (ethyne)	74-86-2	100%

National Regulations

Dangerous Substances and Explosive Atmospheres Regulations (DSEAR 2002 No. 2776). Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
14 / 15

Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations (EPS, 1996 No. 192). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333 / 2008 and (EU) No. 231 / 2012 and are labelled as such may be used as food additives.

This Safety Data Sheet has been produced to comply with Regulation (EU) 453 / 2010. THE ACETYLENE SAFETY (ENGLAND AND WALES AND SCOTLAND) REGULATIONS 2014 No. 1639

15.2 Chemical safety assessment: CSA has been carried out.

SECTION 16: Other Information

Revision Information: Not relevant.

Key literature references and sources for data:

Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:
Agency for Toxic Substances and Diseases Registry (ATSDR) (<http://www.atsdr.cdc.gov/>).
European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.
European Chemical Agency: Information on Registered Substances
<http://apps.echa.europa.eu/registered/registered-sub.aspx#search>
European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.
International Programme on Chemical Safety (<http://www.inchem.org/>)
ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.
Matheson Gas Data Book, 7th Edition.
National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.
The ESIS (European chemical Substances 5 Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).
The European Chemical Industry Council (CEFIC) ERICards.
United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)
Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).
Substance specific information from suppliers.
Details given in this document are believed to be correct at the time of publication.
EH40 (as amended) Workplace exposure limits.

Wording of the R-phrases and H-statements in sections 2 and 3

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
R5	Heating may cause an explosion.
R6	Explosive with or without contact with air.
R12	Extremely flammable.

SAFETY DATA SHEET
Acetylene, dissolved

Issue Date: 25.01.2016
Last revised date: 01.02.2016

Version: 1. 1

SDS No.: 000010030152
15 / 15

Training information: Users of breathing apparatus must be trained. Ensure operators understand the flammability hazard.

Classification according to Regulation (EC) No 1272 / 2008 as amended.

Flam. Gas 1, H220
Chem. Unst. Gas A, H230
Press. Gas Diss. Gas, H280

Other information: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national / local regulations are observed. Ensure equipment is adequately earthed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

Last revised date: 01.02.2016

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.

SAFETY DATA SHEET

Argon, compressed

Issue Date: 16.01.2013
Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
1 / 12

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

1.1 Product identifier

Product name: Argon, compressed

Trade name: Argon Pureshield, Argon Pure, Argon Industrial, Argon Grade N6.0, Argon Research Grade N5.5, Argon Zero Grade N5.0, Argon Food Grade

Additional identification

Chemical name: Argon

Chemical formula: Ar

INDEX No. -

CAS-No. 7440-37-1

EC No. 231-147-0

REACH Registration No. Listed in Annex IV / V of Regulation (EC) No 1907 / 2006 (REACH), exempted from registration.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Industrial and professional. Perform risk assessment prior to use.
Balance gas for mixtures. Blanketing gas. Calibration gas. Carrier gas.
Combustion, melting and cutting processes. Fire suppressant gas. Food packaging gas. Inerting gas. Inflation systems. Laboratory use. Laser gas.
Pressure head gas, operational assist gas in pressure systems. Process gas.
Purge gas. Test gas.
Consumer use.
Shielding gas in gas welding.

Uses advised against Industrial or technical grade unsuitable for medical and / or food applications or inhalation.

1.3 Details of the supplier of the safety data sheet

Supplier

BOC
Priestley Road, Worsley
M28 2UT Manchester

Telephone: 0800 111 333

E-mail: ReachSDS@boc.com

1.4 Emergency telephone number: 0800 111 333

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Directive 67 / 548 / EEC or 1999 / 45 / EC as amended.

Not classified

SAFETY DATA SHEET

Argon, compressed

Issue Date: 16.01.2013
Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
2 / 12

Classification according to Regulation (EC) No 1272 / 2008 as amended.

Physical Hazards

Gases under pressure

Compressed gas H280: Contains gas under pressure; may explode if heated.

2.2 Label Elements



Signal Words: Warning

Hazard Statement(s): H280: Contains gas under pressure; may explode if heated.

Precautionary Statement

Prevention: None.

Response: None.

Storage: P403: Store in a well-ventilated place.

Disposal: None.

Supplemental label information

EIGA-As: Asphyxiant in high concentrations.

2.3 Other hazards: None.

SECTION 3: Composition / information on ingredients

3.1 Substances

Chemical name	Argon
INDEX No.:	-
CAS-No.:	7440-37-1
EC No.:	231-147-0
REACH Registration No.:	Listed in Annex IV / V of Regulation (EC) No 1907 / 2006 (REACH), exempted from registration.
Purity:	100% The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.
Trade name:	Argon Pureshield, Argon Pure, Argon Industrial, Argon Grade N6.0, Argon Research Grade N5.5, Argon Zero Grade N5.0, Argon Food Grade

SAFETY DATA SHEET
Argon, compressed

Issue Date: 16.01.2013
 Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
 3 / 12

SECTION 4: First Aid Measures

General: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

4.1 Description of first aid measures

Inhalation: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Eye contact: Adverse effects not expected from this product.

Skin Contact: Adverse effects not expected from this product.

Ingestion: Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed: Respiratory arrest.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: None.

Treatment: None.

SECTION 5: Firefighting Measures

General Fire Hazards: Heat may cause the containers to explode.

5.1 Extinguishing media

Suitable extinguishing media: Material will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.

Unsuitable extinguishing media: None.

5.2 Special hazards arising from the substance or mixture: None.

Hazardous Combustion Products: None.

5.3 Advice for firefighters

Special fire fighting procedures: In case of fire: Stop leak if safe to do so. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

SAFETY DATA SHEET

Argon, compressed

Issue Date: 16.01.2013
Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
4 / 12

Special protective equipment for firefighters:

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Evacuate area. Provide adequate ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Guideline EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

6.2 Environmental Precautions:

Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up:

Provide adequate ventilation.

6.4 Reference to other sections:

Refer to sections 8 and 13.

SAFETY DATA SHEET

Argon, compressed

Issue Date: 16.01.2013
Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
5 / 12

SECTION 7: Handling and Storage:

7.1 Precautions for safe handling:

Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local / regional / national / international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.

7.2 Conditions for safe storage, including any incompatibilities:

Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material.

7.3 Specific end use(s):

None.

SECTION 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

SAFETY DATA SHEET

Argon, compressed

Issue Date: 16.01.2013
Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
6 / 12

8.2 Exposure controls

Appropriate engineering controls:

Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Oxygen detectors should be used when asphyxiating gases may be released. Systems under pressure should be regularly checked for leakages. Preferably use permanent leak tight connections (eg. welded pipes). Do not eat, drink or smoke when using the product.

Individual protection measures, such as personal protective equipment

General information:

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Eye / face protection:

Wear eye protection to EN 166 when using gases.
Guideline: EN 166 Personal Eye Protection.

Skin protection

Hand Protection:

Wear working gloves while handling containers
Guideline: EN 388 Protective gloves against mechanical risks.

Body protection:

No special precautions.

Other:

Wear safety shoes while handling containers
Guideline: ISO 20345 Personal protective equipment - Safety footwear.

Respiratory Protection:

Not required.

Thermal hazards:

No precautionary measures are necessary.

Hygiene measures:

Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.

Environmental exposure controls:

For waste disposal, see section 13.

SECTION 9: Physical And Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:

Gas

Form:

Compressed gas

Colour:

Colorless

Odour:

Odorless

Odour Threshold:

Odour threshold is subjective and is inadequate to warn of over exposure.

SAFETY DATA SHEET
Argon, compressed

Issue Date: 16.01.2013
 Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
 7 / 12

pH:	not applicable.
Melting Point:	-189 °C
Boiling Point:	-186 °C
Sublimation Point:	not applicable.
Critical Temp. (°C):	-122.0 °C
Flash Point:	Not applicable to gases and gas mixtures.
Evaporation Rate:	Not applicable to gases and gas mixtures.
Flammability (solid, gas):	This product is not flammable.
Flammability limit - upper (%):	not applicable.
Flammability limit - lower(%):	not applicable.
Vapour pressure:	No reliable data available.
Vapour density (air=1):	1.38
Relative density:	1.4
Solubility(ies)	
Solubility in Water:	61 mg / l
Partition coefficient (n-octanol / water):	Not known.
Autoignition Temperature:	not applicable.
Decomposition Temperature:	Not known.
Viscosity	
Kinematic viscosity:	No data available.
Dynamic viscosity:	No data available.
Explosive properties:	Not applicable.
Oxidising Properties:	not applicable.

9.2 Other information: Gas /vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

Molecular weight: 40 g / mol (Ar)

SECTION 10: Stability and Reactivity

10.1 Reactivity:	No reactivity hazard other than the effects described in sub-section below.
10.2 Chemical Stability:	Stable under normal conditions.
10.3 Possibility of Hazardous Reactions:	None.
10.4 Conditions to Avoid:	None.
10.5 Incompatible Materials:	No reaction with any common materials in dry or wet conditions.
10.6 Hazardous Decomposition Products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SAFETY DATA SHEET
Argon, compressed

Issue Date: 16.01.2013
Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
8 / 12

SECTION 11: Toxicological Information

General information: None.

11.1 Information on toxicological effects

Acute toxicity - Oral
Product Based on available data, the classification criteria are not met.

Acute toxicity - Dermal
Product Based on available data, the classification criteria are not met.

Acute toxicity - Inhalation
Product Based on available data, the classification criteria are not met.

Skin Corrosion / Irritation
Product Based on available data, the classification criteria are not met.

Serious Eye Damage / Eye Irritation
Product Based on available data, the classification criteria are not met.

Respiratory or Skin Sensitisation
Product Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity
Product Based on available data, the classification criteria are not met.

Carcinogenicity
Product Based on available data, the classification criteria are not met.

Reproductive toxicity
Product Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure
Product Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
Product Based on available data, the classification criteria are not met.

Aspiration Hazard
Product Not applicable to gases and gas mixtures..

SECTION 12: Ecological Information

12.1 Toxicity

Acute toxicity
Product No ecological damage caused by this product.

SAFETY DATA SHEET

Argon, compressed

Issue Date: 16.01.2013
Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
9 / 12

12.2 Persistence and Degradability

Product

The substance is naturally occurring.

12.3 Bioaccumulative Potential

Product

The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

12.4 Mobility in Soil

Product

The substance is a gas, not applicable.

12.5 Results of PBT and vPvB assessment

Product

Not classified as PBT or vPvB.

12.6 Other Adverse Effects:

No ecological damage caused by this product.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

General information:

Do not discharge into any place where its accumulation could be dangerous. Vent to atmosphere in a well ventilated place.

Disposal methods:

Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes

Container:

16 05 05: Gases in pressure containers other than those mentioned in 16 05 04.

SECTION 14: Transport Information

ADR

14.1 UN Number:	UN 1006
14.2 UN Proper Shipping Name:	ARGON, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.2
Hazard No. (ADR):	20
Tunnel restriction code:	(E)
Emergency Action Code:	2T
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

SAFETY DATA SHEET

Argon, compressed

Issue Date: 16.01.2013
Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
10/12

RID

14.1 UN Number:	UN 1006
14.2 UN Proper Shipping Name	ARGON, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.2
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

IMDG

14.1 UN Number:	UN 1006
14.2 UN Proper Shipping Name:	ARGON, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2.2
Label(s):	2.2
EmS No.:	F-C, S-V
14.3 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

IATA

14.1 UN Number:	UN 1006
14.2 Proper Shipping Name:	Argon, compressed
14.3 Transport Hazard Class(es):	
Class:	2.2
Label(s):	2.2
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–
Other information	
Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

14.7 Transport in bulk according to Annex II of MARPOL73 / 78 and the IBC Code: not applicable

Additional identification:

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

SECTION 15: Regulatory information

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

SAFETY DATA SHEET

Argon, compressed

Issue Date: 16.01.2013
Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
11 / 12

National Regulations

Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives. This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010.

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

SECTION 16: Other Information

Revision Information: Not relevant.

Key literature references and sources for data:

Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:
Agency for Toxic Substances and Diseases Registry (ATSDR) (<http://www.atsdr.cdc.gov/>).
European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.
European Chemical Agency: Information on Registered Substances <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>
European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.
International Programme on Chemical Safety (<http://www.inchem.org/>)
ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.
Matheson Gas Data Book, 7th Edition.
National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.
The ESIS (European chemical Substances 5 Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).
The European Chemical Industry Council (CEFIC) ERICards.
United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)
Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).
Substance specific information from suppliers.
Details given in this document are believed to be correct at the time of publication.
EH40 (as amended) Workplace exposure limits.

Wording of the R-phrases and H-statements in sections 2 and 3

H280 Contains gas under pressure; may explode if heated.

Training information:

Users of breathing apparatus must be trained. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Ensure operators understand the hazards.

SAFETY DATA SHEET

Argon, compressed

Issue Date: 16.01.2013
Last revised date: 03.08.2016

Version: 1. 3

SDS No.: 000010021700
12 / 12

Classification according to Regulation (EC) No 1272 / 2008 as amended.

Press. Gas Compr. Gas, H280

Other information:

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national / local regulations are observed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

Last revised date:

03.08.2016

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.

SAFETY DATA SHEET

030

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name CARBON DIOXIDE CYLINDER, GAS AND LIQUID WITHDRAWAL
Synonym(s) 030 - SDS NUMBER • 206, 207, 261 • CARBON DIOXIDE, COMPRESSED • FOGG GAS • PRODUCT CODES: 080, 081, 082, 083, 084, 086, 131, 176, 200 • REFRIGERANT 744

1.2 Uses and uses advised against

Use(s) DISPENSING GAS • INERT GAS • SHIELDING GAS

1.3 Details of the supplier of the product

Supplier name BOC LIMITED (AUSTRALIA)
Address 10 Julius Avenue, North Ryde, NSW, 2113, AUSTRALIA
Telephone 131 262, (02) 8874 4400
Fax 132 427 (24 hours)
Website <http://www.boc.com.au>

1.4 Emergency telephone number(s)

Emergency 1800 653 572 (24/7) (Australia only)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS (GHS ONLY) ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS classification(s) Gases Under Pressure: Liquefied gas

2.2 Label elements

Signal word WARNING

Pictogram(s)



Hazard statement(s)

H280 Contains gas under pressure; may explode if heated.

Prevention statement(s)

None allocated.

Response statement(s)

None allocated.

Storage statement(s)

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal statement(s)

None allocated.

2.3 Other hazards

Asphyxiant. Effects are proportional to oxygen displacement.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content (v/v)
CARBON DIOXIDE	124-38-9	204-696-9	>99.9%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Apply artificial respiration if not breathing. Give oxygen if available. For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor.
Skin	Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.
Ingestion	Due to product form and application, ingestion is considered unlikely.
First aid facilities	None allocated.

4.2 Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Direct contact with the liquefied material or escaping compressed gas may cause frostbite injury. Low concentrations of CO₂ cause increased respiration and headache.

4.3 Immediate medical attention and special treatment needed

Treat for asphyxia and cold burns.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog to cool containers from protected area.

5.2 Special hazards arising from the substance or mixture

Non flammable.

5.3 Advice for firefighters

Temperatures in a fire may cause liquid vessels and related equipment to rupture. Storage vessels may contain fine particle insulation materials or foam products which may be hazardous or release hazardous decomposition products in a fire. Cool vessels exposed to fire by applying water from a protected location. Do not approach vessels suspected of being hot. Evacuate area if unable to keep vessels cool.

5.4 Hazchem code

2T	
2	Fine Water Spray.
T	Wear full fire kit and breathing apparatus. Dilute spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS. Ventilate area where possible and eliminate ignition sources.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up

Stop the flow of material, if this is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe 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.

7.2 Conditions for safe storage, including any incompatibilities

Refer to vessel operating instructions. Do not store near incompatible substances, heat or ignition sources and foodstuffs. Portable liquid containers should be stored: upright, prevented from falling, in a secure area; below 45°C, in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

7.3 Specific end use(s)

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Carbon dioxide	SWA (AUS)	5000	9000	30000	54000
Carbon dioxide in coal mines	SWA (AUS)	12500	22500	30000	54000

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or insulated gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS GAS
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT APPLICABLE
pH	NOT APPLICABLE
Vapour density	NOT AVAILABLE
Specific gravity	NOT APPLICABLE
Solubility (water)	0.759 cm ³ /cm ³
Vapour pressure	6300 kPa @ 25°C (Approximately)
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE

9.1 Information on basic physical and chemical properties

Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	100 %
Critical pressure	7,380 kPa (Approximately)
Critical temperature	31°C (Approximately)
Cylinder pressure (when full)	6300 kPa @ 25°C (Approximately)
Density	1.53 (Air = 1)
Sublimation temperature	-78°C (Approximately)

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid contact with incompatible substances.

10.5 Incompatible materials

Moist carbon dioxide is corrosive, hence acid resistant materials are required (e.g. stainless steel). Certain properties of some plastics and rubbers may be affected by carbon dioxide (i.e. embrittlement, leaching of plasticisers, etc).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met. Low concentrations of carbon dioxide cause increased respiration and headache.

Information available for the ingredient(s):

Ingredient	Oral Toxicity (LD50)	Dermal Toxicity (LD50)	Inhalation Toxicity (LC50)
CARBON DIOXIDE	--	--	470000 ppm/30M (rat)

Skin Not classified as a skin irritant. Contact with dry ice powder may cause frostbite injury or cold burns.

Eye Not classified as an eye irritant. Contact with dry ice powder may cause frostbite injury or cold burns.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT – single exposure Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

PRODUCT NAME CARBON DIOXIDE CYLINDER, GAS AND LIQUID WITHDRAWAL

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

When discharged to the atmosphere, carbon dioxide may contribute to the greenhouse effect.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Ensure all liquid and gas supply valves are shut. Notify the manufacturer that you will be returning the portable liquid container. Residual product will be disposed of under the manufacturer's supervision.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

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



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1013	1013	1013
14.2 Proper Shipping Name	CARBON DIOXIDE	CARBON DIOXIDE	CARBON DIOXIDE
14.3 Transport hazard class	2.2	2.2	2.2
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code	2T
GTEPG	2C1
EMS	F-C, S-V
Other information	Transport on open top vehicles in accordance with Australian Code for the Transport of Dangerous Goods. Refer to Commonwealth, State and Territory Dangerous Goods Legislation which contain requirements which affect gas storage and transport.

15. REGULATORY INFORMATION

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

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Hazard codes	None allocated.
Risk phrases	None allocated.
Safety phrases	None allocated.
Inventory listing(s)	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders.

APPLICATION METHOD: Gas withdrawal: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment. Liquid withdrawal: may be used as liquid or vapourised for pressure regulated gas distribution.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this 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 report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

PRODUCT NAME CARBON DIOXIDE CYLINDER, GAS AND LIQUID WITHDRAWAL

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier 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, importer or supplier.

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

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmt.com.au.

[End of SDS]

SAFETY DATA SHEET
Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
1 / 12

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

1.1 Product identifier

Product name: Helium, compressed

Trade name: Helium Balloon Gas, Helium A/Zero Grade N4.6, Helium CP Grade N5.0, Helium CP Grade N5.0 NMR Use Only, Helium Diving Grade, Helium ECD Grade, Helium Grade N6.0, Helium Research Grade N5.5

Additional identification

Chemical name: Helium

Chemical formula: He

INDEX No. -

CAS-No. 7440-59-7

EC No. 231-168-5

REACH Registration No. Listed in Annex IV/V of Regulation (EC) No 1907 / 2006 (REACH), exempted from registration.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Industrial and professional. Perform risk assessment prior to use.
Balance gas for mixtures. Balloon gas. Calibration gas. Carrier gas.
Combustion, melting and cutting processes. Inerting gas. Laboratory use.
Laser gas. Pressure head gas, operational assist gas in pressure systems.
Process gas. Professional diving. Purge gas. Test gas.
Consumer use.
Balloon gas. Shielding gas in gas welding.

Uses advised against Industrial or technical grade unsuitable for medical applications or inhalation.
Inhaling helium may cause asphyxiation followed by death.

1.3 Details of the supplier of the safety data sheet

Supplier
BOC
Priestley Road, Worsley
M28 2UT Manchester

E-mail: ReachSDS@boc.com

Telephone: 0800 111 333

1.4 Emergency telephone number: 0800 111 333

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC as amended.

Not classified

SAFETY DATA SHEET
Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
2 / 12

Classification according to Regulation (EC) No 1272 / 2008 as amended.

Physical Hazards

Gases under pressure

Compressed gas H280: Contains gas under pressure; may explode if heated.

2.2 Label Elements



Signal Words: Warning

Hazard Statement(s): H280: Contains gas under pressure; may explode if heated.

Precautionary Statement

Prevention: None.

Response: None.

Storage: P403: Store in a well-ventilated place.

Disposal: None.

Supplemental label information

EIGA-As: Asphyxiant in high concentrations.

2.3 Other hazards: None.

SECTION 3: Composition / information on ingredients

3.1 Substances

Chemical name	Helium
INDEX No.:	-
CAS-No.:	7440-59-7
EC No.:	231-168-5
REACH Registration No.:	Listed in Annex IV / V of Regulation (EC) No 1907 / 2006 (REACH), exempted from registration.
Purity:	100%
	The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.
Trade name:	Helium Balloon Gas, Helium A / Zero Grade N4.6, Helium CP Grade N5.0, Helium CP Grade N5.0 NMR Use Only, Helium Diving Grade, Helium ECD Grade, Helium Grade N6.0, Helium Research Grade N5.5

SAFETY DATA SHEET
Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
3 / 12

SECTION 4: First Aid Measures

General: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

4.1 Description of first aid measures

Inhalation: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Eye contact: Adverse effects not expected from this product.

Skin Contact: Adverse effects not expected from this product.

Ingestion: Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed: Respiratory arrest.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: None.

Treatment: None.

SECTION 5: Firefighting Measures

General Fire Hazards: Heat may cause the containers to explode.

5.1 Extinguishing media

Suitable extinguishing media: Material will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.

Unsuitable extinguishing media: None.

5.2 Special hazards arising from the substance or mixture: None.

Hazardous Combustion Products: None.

5.3 Advice for firefighters

Special fire fighting procedures: In case of fire: Stop leak if safe to do so. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

SAFETY DATA SHEET
Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
4 / 12

**Special protective equipment
for firefighters:**

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

SECTION 6: Accidental Release Measures

**6.1 Personal precautions,
protective equipment and
emergency procedures:**

Evacuate area. Provide adequate ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Guideline EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

6.2 Environmental Precautions:

Prevent further leakage or spillage if safe to do so.

**6.3 Methods and material for
containment and cleaning up:**

Provide adequate ventilation.

6.4 Reference to other sections:

Refer to sections 8 and 13.

SAFETY DATA SHEET
Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
5 / 12

SECTION 7: Handling and Storage:

7.1 Precautions for safe handling:

Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local / regional / national / international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.

7.2 Conditions for safe storage, including any incompatibilities:

Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material.

7.3 Specific end use(s):

None.

SECTION 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

SAFETY DATA SHEET

Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
6 / 12

8.2 Exposure controls

Appropriate engineering controls:

Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Oxygen detectors should be used when asphyxiating gases may be released. Systems under pressure should be regularly checked for leakages. Preferably use permanent leak tight connections (eg. welded pipes). Do not eat, drink or smoke when using the product.

Individual protection measures, such as personal protective equipment

General information:

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Eye / face protection:

Wear eye protection to EN 166 when using gases.
Guideline: EN 166 Personal Eye Protection.

Skin protection

Hand Protection:

Wear working gloves while handling containers
Guideline: EN 388 Protective gloves against mechanical risks.

Body protection:

No special precautions.

Other:

Wear safety shoes while handling containers
Guideline: ISO 20345 Personal protective equipment - Safety footwear.

Respiratory Protection:

Not required.

Thermal hazards:

No precautionary measures are necessary.

Hygiene measures:

Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.

Environmental exposure controls:

For waste disposal, see section 13.

SECTION 9: Physical And Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:

Gas

Form:

Compressed gas

Colour:

Colorless

Odour:

Odorless

Odour Threshold:

Odour threshold is subjective and is inadequate to warn of over exposure.

SAFETY DATA SHEET
Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
7 / 12

pH:	not applicable.
Melting Point:	-272.15 °C
Boiling Point:	-269 °C
Sublimation Point:	not applicable.
Critical Temp. (°C):	-268.0 °C
Flash Point:	Not applicable to gases and gas mixtures.
Evaporation Rate:	Not applicable to gases and gas mixtures.
Flammability (solid, gas):	This product is not flammable.
Flammability limit - upper (%):	not applicable.
Flammability limit - lower(%):	not applicable.
Vapour pressure:	No reliable data available.
Vapour density (air=1):	0.138 (0 °C)
Relative density:	No data available.
Solubility(ies)	
Solubility in Water:	2.5 mg / l (21 °C)
Partition coefficient (n-octanol / water):	Not known.
Autoignition Temperature:	not applicable.
Decomposition Temperature:	Not known.
Viscosity	
Kinematic viscosity:	No data available.
Dynamic viscosity:	0.025 mPa.s
Explosive properties:	Not applicable.
Oxidising Properties:	not applicable.

9.2 Other information: None.

Molecular weight: 4 g / mol (He)

SECTION 10: Stability and Reactivity

10.1 Reactivity:	No reactivity hazard other than the effects described in sub-section below.
10.2 Chemical Stability:	Stable under normal conditions.
10.3 Possibility of Hazardous Reactions:	None.
10.4 Conditions to Avoid:	None.
10.5 Incompatible Materials:	No reaction with any common materials in dry or wet conditions.
10.6 Hazardous Decomposition Products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SAFETY DATA SHEET
Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
8 / 12

SECTION 11: Toxicological Information

General information: None.

11.1 Information on toxicological effects

Acute toxicity - Oral
Product Based on available data, the classification criteria are not met.

Acute toxicity - Dermal
Product Based on available data, the classification criteria are not met.

Acute toxicity - Inhalation
Product Based on available data, the classification criteria are not met.

Skin Corrosion / Irritation
Product Based on available data, the classification criteria are not met.

Serious Eye Damage / Eye Irritation
Product Based on available data, the classification criteria are not met.

Respiratory or Skin Sensitisation
Product Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity
Product Based on available data, the classification criteria are not met.

Carcinogenicity
Product Based on available data, the classification criteria are not met.

Reproductive toxicity
Product Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure
Product Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
Product Based on available data, the classification criteria are not met.

Aspiration Hazard
Product Not applicable to gases and gas mixtures..

SECTION 12: Ecological Information

12.1 Toxicity

Acute toxicity
Product No ecological damage caused by this product.

SAFETY DATA SHEET
Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
9 / 12

12.2 Persistence and Degradability

Product

Not applicable to gases and gas mixtures..

12.3 Bioaccumulative Potential

Product

The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

12.4 Mobility in Soil

Product

Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5 Results of PBT and vPvB assessment

Product

Not classified as PBT or vPvB.

12.6 Other Adverse Effects:

No ecological damage caused by this product.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

General information:

Do not discharge into any place where its accumulation could be dangerous. Vent to atmosphere in a well ventilated place.

Disposal methods:

Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes

Container:

16 05 05: Gases in pressure containers other than those mentioned in 16 05 04.

SECTION 14: Transport Information

ADR

14.1 UN Number:	UN 1046
14.2 UN Proper Shipping Name:	HELIUM, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.2
Hazard No. (ADR):	20
Tunnel restriction code:	(E)
Emergency Action Code:	2T
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

SAFETY DATA SHEET
Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
10/12

RID

14.1 UN Number:	UN 1046
14.2 UN Proper Shipping Name	HELIUM, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.2
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

IMDG

14.1 UN Number:	UN 1046
14.2 UN Proper Shipping Name:	HELIUM, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2.2
Label(s):	2.2
EmS No.:	F-C, S-V
14.3 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

IATA

14.1 UN Number:	UN 1046
14.2 Proper Shipping Name:	Helium, compressed
14.3 Transport Hazard Class(es):	
Class:	2.2
Label(s):	2.2
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–
Other information	
Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

14.7 Transport in bulk according to Annex II of MARPOL73 / 78 and the IBC Code: not applicable

Additional identification:

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

SECTION 15: Regulatory information

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

SAFETY DATA SHEET

Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
11 / 12

National Regulations

Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives. This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010.

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

SECTION 16: Other Information

Revision Information: Not relevant.

Key literature references and sources for data:

Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:
Agency for Toxic Substances and Diseases Registry (ATSDR) (<http://www.atsdr.cdc.gov/>).
European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.
European Chemical Agency: Information on Registered Substances <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>
European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.
International Programme on Chemical Safety (<http://www.inchem.org/>)
ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.
Matheson Gas Data Book, 7th Edition.
National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.
The ESIS (European chemical Substances 5 Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).
The European Chemical Industry Council (CEFIC) ERICards.
United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)
Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).
Substance specific information from suppliers.
Details given in this document are believed to be correct at the time of publication.
EH40 (as amended) Workplace exposure limits.

Wording of the R-phrases and H-statements in sections 2 and 3

H280 Contains gas under pressure; may explode if heated.

Training information:

Users of breathing apparatus must be trained. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Ensure operators understand the hazards.

SAFETY DATA SHEET
Helium, compressed

Issue Date: 16.01.2013
Last revised date: 07.09.2016

Version: 1. 3

SDS No.: 000010021690
12 / 12

Classification according to Regulation (EC) No 1272 / 2008 as amended.

Press. Gas Compr. Gas, H280

Other information:

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national / local regulations are observed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

Last revised date:

07.09.2016

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.

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
1 / 14

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

1.1 Product identifier

Product name: Propane

Trade name: Propane Instrument Grade N2.5, Propane Pure Grade N2.0, Propane Research Grade N3.5, Propane Tech Grade N1.5, Care 40

Additional identification

Chemical name: propane

Chemical formula: C₃H₈

INDEX No. 601-003-00-5

CAS-No. 74-98-6

EC No. 200-827-9

REACH Registration No. 01-2119486944-21

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Industrial and professional. Perform risk assessment prior to use.
Aerosol propellant. Refrigerant. Transfilling gas or liquid, Use as a fuel. Using gas alone or in mixtures for the calibration of analysis equipment. Formulation of mixtures with gas in pressure receptacles.
Consumer use.

Uses advised against Aerosol propellant. Use as a fuel.
Uses other than those listed above are not supported.

1.3 Details of the supplier of the safety data sheet

Supplier

BOC
Priestley Road, Worsley
M28 2UT Manchester

Telephone: 0800 111 333

E-mail: ReachSDS@boc.com

1.4 Emergency telephone number: 0800 111 333

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
2 / 14

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC as amended.

F+; R12

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended.

Physical Hazards

Flammable gas	Category 1	H220: Extremely flammable gas.
Gases under pressure	Liquefied gas	H280: Contains gas under pressure; may explode if heated.

2.2 Label Elements



Signal Words: Danger

Hazard Statement(s): H220: Extremely flammable gas.
H280: Contains gas under pressure; may explode if heated.

Precautionary Statement

Prevention:	P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Response:	P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381: Eliminate all ignition sources if safe to do so.
Storage:	P403: Store in a well-ventilated place.
Disposal:	None.

2.3 Other hazards: Contact with evaporating liquid may cause frostbite or freezing of skin.

SAFETY DATA SHEET**Propane**

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
3 / 14

SECTION 3: Composition / information on ingredients**3.1 Substances**

Chemical name	propane
INDEX No.:	601-003-00-5
CAS-No.:	74-98-6
EC No.:	200-827-9
REACH Registration No.:	01-2119486944-21
Purity:	100%
	The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.
Trade name:	Propane Instrument Grade N2.5, Propane Pure Grade N2.0, Propane Research Grade N3.5, Propane Tech Grade N1.5, Care 40

SECTION 4: First Aid Measures

General: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

4.1 Description of first aid measures

Inhalation: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Eye contact: Rinse the eye with water immediately. Remove contact lenses, if present and easy to do. Continue rinsing. Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes.

Skin Contact: Contact with evaporating liquid may cause frostbite or freezing of skin.

Ingestion: Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed: Respiratory arrest. Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling. Loss of co-ordination. In low concentrations may cause narcotic effects. Dizziness. Headache. Unconsciousness. Nausea, vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: Respiratory arrest. Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.

Treatment: Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice / attention.

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
4 / 14

SECTION 5: Firefighting Measures

General Fire Hazards: Heat may cause the containers to explode.

5.1 Extinguishing media

Suitable extinguishing media: Water Spray or Fog. Dry powder. Foam.

Unsuitable extinguishing media: Carbon dioxide.

5.2 Special hazards arising from the substance or mixture: May explode in a fire.

Hazardous Combustion Products: Incomplete combustion may form carbon monoxide

5.3 Advice for firefighters

Special fire fighting procedures: In case of fire: Stop leak if safe to do so. Do not extinguish flames at leak because possibility of uncontrolled explosive re-ignition exists. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

Special protective equipment for firefighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures: Evacuate area. Provide adequate ventilation. Consider the risk of potentially explosive atmospheres. Eliminate all ignition sources if safe to do so. Monitor the concentration of the released product. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

6.2 Environmental Precautions: Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up: Provide adequate ventilation. Eliminate sources of ignition.

6.4 Reference to other sections: Refer to sections 8 and 13.

SAFETY DATA SHEET**Propane**

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
5 / 14

SECTION 7: Handling and Storage:**7.1 Precautions for safe handling:**

Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Purge air from system before introducing gas. Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Assess the risk of a potentially explosive atmosphere and the need for suitable equipment i.e. explosion-proof. Take precautionary measures against static discharges. Keep away from ignition sources (including static discharges). Provide electrical earthing of equipment and electrical equipment usable in explosive atmospheres. Use only non-sparking tools. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Ensure the complete system has been (or is regularly) checked for leaks before use. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local / regional / national / international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.

7.2 Conditions for safe storage, including any incompatibilities:

All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere. Segregate from oxidant gases and other oxidants being stored. Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material. Keep container below 50°C in a well ventilated place.

7.3 Specific end use(s):

None.

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
6 / 14

SECTION 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

8.2 Exposure controls

Appropriate engineering controls:

Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate general and local exhaust ventilation. Keep concentrations well below lower explosion limits. Gas detectors should be used when quantities of flammable gases or vapours may be released. Systems under pressure should be regularly checked for leakages. Product to be handled in a closed system. Use only permanent leak tight installations (e.g. welded pipes). Take precautionary measures against static discharges. Gas detectors should be used when toxic quantities may be released.

Individual protection measures, such as personal protective equipment

General information:

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. Do not eat, drink or smoke when using the product.

Eye / face protection:

Safety eyewear, goggles or face-shield to EN166 should be used to avoid exposure to liquid splashes. Wear eye protection to EN 166 when using gases. Guideline: EN 166 Personal Eye Protection.

Skin protection

Hand Protection:

Wear working gloves while handling containers
Guideline: EN 388 Protective gloves against mechanical risks.

Body protection:

Wear fire / flame resistant / retardant clothing.
Guideline: EN 943 Protective clothing against liquid and gaseous chemicals, including liquid aerosols and solid particles.

Other:

Wear safety shoes while handling containers
Guideline: ISO 20345 Personal protective equipment - Safety footwear.

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
7 / 14

Respiratory Protection:	Respiratory protection may be required. When allowed by a risk assessment Respiratory Protective Equipment (RPE) may be used The selection of the Respiratory Protective Device (RPD) must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected RPD. Material: Filter AX Guideline: EN 14387 Respiratory protective devices. Gas filter(s) and combined filter(s). Requirements, testing, marking. Guideline: EN 136 Respiratory protective devices. Full face masks. Requirements, testing, marking.
Thermal hazards:	No precautionary measures are necessary.
Hygiene measures:	Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.
Environmental exposure controls:	For waste disposal, see section 13.

SECTION 9: Physical And Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:	Gas
Form:	Liquefied gas
Colour:	Colourless
Odour:	Odourless
Odour Threshold:	Odour threshold is subjective and is inadequate to warn of over exposure.
pH:	not applicable.
Melting Point:	-187.6 °C
Boiling Point:	-42.1 °C (101.325 kPa)
Sublimation Point:	not applicable.
Critical Temp. (°C):	96.7 °C
Flash Point:	Not applicable to gases and gas mixtures.
Evaporation Rate:	Not applicable to gases and gas mixtures.
Flammability (solid, gas):	Flammable Gas
Flammability limit - upper (%):	12.5 %(V)
Flammability limit - lower(%):	1.7 %(V)
Vapour pressure:	953.25 kPa (25 °C)
Vapour density (air=1):	1.56 (0 °C) AIR=1
Relative density:	0.5853 (-45 °C) 4 °C
Solubility(ies)	
Solubility in Water:	75 mg / l
Partition coefficient (n-octanol / water):	2.36
Autoignition Temperature:	472 °C

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
8 / 14

Decomposition Temperature: 650 °C Decomp to ethylene and ethane.

Viscosity

Kinematic viscosity: No data available.

Dynamic viscosity: 0.08 mPa.s (17.9 °C)

Explosive properties: Not applicable.

Oxidising Properties: not applicable.

9.2 Other information: Gas /vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

Molecular weight: 44.09 g / mol (C₃H₈)

Minimum ignition energy: 0.25 mJ

SECTION 10: Stability and Reactivity

10.1 Reactivity: No reactivity hazard other than the effects described in sub-section below.

10.2 Chemical Stability: Stable under normal conditions.

10.3 Possibility of Hazardous Reactions: Can form a potentially explosive atmosphere in air. May react violently with oxidants.

10.4 Conditions to Avoid: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible Materials: Air and oxidisers. For material compatibility see latest version of ISO-11114.

10.6 Hazardous Decomposition Products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological Information

General information: None.

11.1 Information on toxicological effects

Acute toxicity - Oral Product Based on available data, the classification criteria are not met.

Acute toxicity - Dermal Product Based on available data, the classification criteria are not met.

Acute toxicity - Inhalation Product

Skin Corrosion / Irritation Product Based on available data, the classification criteria are not met.

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
9 / 14

Serious Eye Damage / Eye Irritation

Product Based on available data, the classification criteria are not met.

Respiratory or Skin Sensitisation

Product Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity

Product Based on available data, the classification criteria are not met.

Carcinogenicity

Product Based on available data, the classification criteria are not met.

Reproductive toxicity

Product Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure

Product Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure

Product Based on available data, the classification criteria are not met.

Aspiration Hazard

Product Not applicable to gases and gas mixtures..

SECTION 12: Ecological Information

12.1 Toxicity

Acute toxicity

Product No ecological damage caused by this product.

Acute toxicity - Fish

propane LC50 (Fish, 96 h): 49.9 mg / l

Acute toxicity - Aquatic Invertebrates

propane EC50 (Water flea (Daphnia magna), 48 h): 27.1 mg / l

Toxicity to microorganisms

propane EC50 (Alga, 72 h): 11.9 mg / l

12.2 Persistence and Degradability

Product Not applicable to gases and gas mixtures..

12.3 Bioaccumulative Potential

Product The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
10 / 14

12.4 Mobility in Soil

Product

Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5 Results of PBT and vPvB assessment

Product

Not classified as PBT or vPvB.

12.6 Other Adverse Effects:

Global Warming Potential

Global warming potential: 3
Contains greenhouse gas(es). When discharged in large quantities may contribute to the greenhouse effect.
Global warming potential: 3
Contains greenhouse gas(es) not covered by 842 / 2006 / EC. Contains greenhouse gas(es). When discharged in large quantities may contribute to the greenhouse effect.

propane

Global warming potential: 3

Global warming potential: 3

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

General information:

Do not discharge into any place where its accumulation could be dangerous. Consult supplier for specific recommendations. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor.

Disposal methods:

Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes

Container:

16 05 04*: gases in pressure containers (including halons) containing dangerous substances

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
11 / 14

SECTION 14: Transport Information

ADR

14.1 UN Number:	UN 1978
14.2 UN Proper Shipping Name:	PROPANE
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.1
Hazard No. (ADR):	23
Tunnel restriction code:	(B/D)
Emergency Action Code:	2YE
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

RID

14.1 UN Number:	UN 1978
14.2 UN Proper Shipping Name	PROPANE
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.1
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

IMDG

14.1 UN Number:	UN 1978
14.2 UN Proper Shipping Name:	PROPANE
14.3 Transport Hazard Class(es)	
Class:	2.1
Label(s):	2.1
EmS No.:	F-D, S-U
14.3 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

IATA

14.1 UN Number:	UN 1978
14.2 Proper Shipping Name:	Propane
14.3 Transport Hazard Class(es):	
Class:	2.1
Label(s):	2.1
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–
Other information	
Passenger and cargo aircraft:	Forbidden.
Cargo aircraft only:	Allowed.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: not applicable

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
12 / 14

Additional identification:

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

SECTION 15: Regulatory information

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

EU Regulations

Regulation (EC) No. 1907 / 2006 Annex XVII Substances subject to restriction on marketing and use:

Chemical name	CAS-No.	Concentration
propane	74-98-6	

Directive 2004 / 37 / EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work.:

Chemical name	CAS-No.	Concentration
propane	74-98-6	100%

Directive 92 / 85 / EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding.:

Chemical name	CAS-No.	Concentration
propane	74-98-6	100%

Directive 96 / 82 / EC (Seveso II): on the control of major accident hazards involving dangerous substances:

Chemical name	CAS-No.	Concentration
propane	74-98-6	100%

Directive 98 / 24 / EC on the protection of workers from the risks related to chemical agents at work:

Chemical name	CAS-No.	Concentration
propane	74-98-6	100%

National Regulations

Dangerous Substances and Explosive Atmospheres Regulations (DSEAR 2002 No. 2776). Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work

SAFETY DATA SHEET

Propane

Issue Date:	16.01.2013	Version: 1. 0	SDS No.: 000010021747
Last revised date:	08.09.2015		13 / 14

Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations (EPS, 1996 No. 192). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333 / 2008 and (EU) No. 231 / 2012 and are labelled as such may be used as food additives.
This Safety Data Sheet has been produced to comply with Regulation (EU) 453 / 2010.

15.2 Chemical safety assessment: CSA has been carried out.

SECTION 16: Other Information

Revision Information: Not relevant.

Key literature references and sources for data: Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:
 Agency for Toxic Substances and Diseases Registry (ATSDR) (<http://www.atsdr.cdc.gov/>).
 European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.
 European Chemical Agency: Information on Registered Substances <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>
 European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.
 International Programme on Chemical Safety (<http://www.inchem.org/>)
 ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.
 Matheson Gas Data Book, 7th Edition.
 National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.
 The ESIS (European chemical Substances 5 Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).
 The European Chemical Industry Council (CEFIC) ERICards.
 United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)
 Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).
 Substance specific information from suppliers.
 Details given in this document are believed to be correct at the time of publication.
 EH40 (as amended) Workplace exposure limits.

Wording of the R-phrases and H-statements in sections 2 and 3

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
R12	Extremely flammable.

Training information: Users of breathing apparatus must be trained. Ensure operators understand the flammability hazard.

SAFETY DATA SHEET

Propane

Issue Date: 16.01.2013
Last revised date: 08.09.2015

Version: 1. 0

SDS No.: 000010021747
14 / 14

Classification according to Regulation (EC) No 1272 / 2008 as amended.

Flam. Gas 1, H220
Press. Gas Liq. Gas, H280

Other information:

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national / local regulations are observed. Ensure equipment is adequately earthed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

Last revised date:

08.09.2015

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.

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
1 / 12

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

1.1 Product identifier

Product name: Nitrogen, compressed

Trade name: Nitrogen (Oxygen Free), Nitrogen BTCA 75, Nitrogen BTCA LE (Low Emission) Grade, Nitrogen CP Grade N5.2, Nitrogen Food Grade, Nitrogen ECD Grade, Nitrogen Grade N6.0, Nitrogen Pharmaceutical Grade, Nitrogen Research Grade N5.5, Nitrogen Zero Grade

Additional identification

Chemical name: Nitrogen

Chemical formula: N₂

INDEX No. -

CAS-No. 7727-37-9

EC No. 231-783-9

REACH Registration No. Listed in Annex IV/V of Regulation (EC) No 1907 / 2006 (REACH), exempted from registration.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Industrial and professional. Perform risk assessment prior to use. Aerosol propellant. Balance gas for mixtures. Blanketing gas. Calibration gas. Carrier gas. Fire suppressant gas. Food packaging gas. Inerting gas. Inflating tyres. Laboratory use. Laser gas. Pressure head gas, operational assist gas in pressure systems. Process gas. Purge gas. Test gas. Consumer use.

Uses advised against Beverage applications. Shielding gas in gas welding. Industrial or technical grade unsuitable for medical and / or food applications or inhalation.

1.3 Details of the supplier of the safety data sheet

Supplier
BOC
Priestley Road, Worsley
M28 2UT Manchester

E-mail: ReachSDS@boc.com

Telephone: 0800 111 333

1.4 Emergency telephone number: 0800 111 333

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Directive 67 / 548 / EEC or 1999 / 45 / EC as amended.

Not classified

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
2 / 12

Classification according to Regulation (EC) No 1272 / 2008 as amended.

Physical Hazards

Gases under pressure

Compressed gas H280: Contains gas under pressure; may explode if heated.

2.2 Label Elements



Signal Words: Warning

Hazard Statement(s): H280: Contains gas under pressure; may explode if heated.

Precautionary Statement

Prevention: None.

Response: None.

Storage: P403: Store in a well-ventilated place.

Disposal: None.

Supplemental label information

EIGA-As: Asphyxiant in high concentrations.

2.3 Other hazards: None.

SECTION 3: Composition / information on ingredients

3.1 Substances

Chemical name	Nitrogen
INDEX No.:	-
CAS-No.:	7727-37-9
EC No.:	231-783-9
REACH Registration No.:	Listed in Annex IV / V of Regulation (EC) No 1907 / 2006 (REACH), exempted from registration.
Purity:	100% The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.
Trade name:	Nitrogen (Oxygen Free), Nitrogen BTCA 75, Nitrogen BTCA LE (Low Emission) Grade, Nitrogen CP Grade N5.2, Nitrogen Food Grade, Nitrogen ECD Grade, Nitrogen Grade N6.0, Nitrogen Pharmaceutical Grade, Nitrogen Research Grade N5.5, Nitrogen Zero Grade

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
3 / 12

SECTION 4: First Aid Measures

General: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

4.1 Description of first aid measures

Inhalation: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Eye contact: Adverse effects not expected from this product.

Skin Contact: Adverse effects not expected from this product.

Ingestion: Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed: Respiratory arrest.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: None.

Treatment: None.

SECTION 5: Firefighting Measures

General Fire Hazards: Heat may cause the containers to explode.

5.1 Extinguishing media

Suitable extinguishing media: Material will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.

Unsuitable extinguishing media: None.

5.2 Special hazards arising from the substance or mixture: None.

Hazardous Combustion Products: None.

5.3 Advice for firefighters

Special fire fighting procedures: In case of fire: Stop leak if safe to do so. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
4 / 12

**Special protective equipment
for firefighters:**

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

SECTION 6: Accidental Release Measures

**6.1 Personal precautions,
protective equipment and
emergency procedures:**

Evacuate area. Provide adequate ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Guideline EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

6.2 Environmental Precautions:

Prevent further leakage or spillage if safe to do so.

**6.3 Methods and material for
containment and cleaning up:**

Provide adequate ventilation.

6.4 Reference to other sections:

Refer to sections 8 and 13.

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
5 / 12

SECTION 7: Handling and Storage:

7.1 Precautions for safe handling:

Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local / regional / national / international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.

7.2 Conditions for safe storage, including any incompatibilities:

Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material.

7.3 Specific end use(s):

None.

SECTION 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

SAFETY DATA SHEET

Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
6 / 12

8.2 Exposure controls

Appropriate engineering controls:

Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Oxygen detectors should be used when asphyxiating gases may be released. Systems under pressure should be regularly checked for leakages. Preferably use permanent leak tight connections (eg. welded pipes). Do not eat, drink or smoke when using the product.

Individual protection measures, such as personal protective equipment

General information:

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Eye / face protection:

Wear eye protection to EN 166 when using gases.
Guideline: EN 166 Personal Eye Protection.

Skin protection

Hand Protection:

Wear working gloves while handling containers
Guideline: EN 388 Protective gloves against mechanical risks.

Body protection:

No special precautions.

Other:

Wear safety shoes while handling containers
Guideline: ISO 20345 Personal protective equipment - Safety footwear.

Respiratory Protection:

Not required.

Thermal hazards:

No precautionary measures are necessary.

Hygiene measures:

Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.

Environmental exposure controls:

For waste disposal, see section 13.

SECTION 9: Physical And Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:

Gas

Form:

Compressed gas

Colour:

Colorless

Odour:

Odorless gas

Odour Threshold:

Odour threshold is subjective and is inadequate to warn of over exposure.

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
7 / 12

pH:	not applicable.
Melting Point:	-210.01 °C
Boiling Point:	-196 °C
Sublimation Point:	not applicable.
Critical Temp. (°C):	-147.0 °C
Flash Point:	Not applicable to gases and gas mixtures.
Evaporation Rate:	Not applicable to gases and gas mixtures.
Flammability (solid, gas):	This product is not flammable.
Flammability limit - upper (%):	not applicable.
Flammability limit - lower(%):	not applicable.
Vapour pressure:	No reliable data available.
Vapour density (air=1):	0.97
Relative density:	0.8
Solubility(ies)	
Solubility in Water:	20 mg / l
Partition coefficient (n-octanol / water):	0.67 not applicable
Autoignition Temperature:	not applicable.
Decomposition Temperature:	Not known.
Viscosity	
Kinematic viscosity:	No data available.
Dynamic viscosity:	0.171 mPa.s (10.9 °C)
Explosive properties:	Not applicable.
Oxidising Properties:	not applicable.

9.2 Other information:	None.
Molecular weight:	28.01 g / mol (N ₂)

SECTION 10: Stability and Reactivity

10.1 Reactivity:	No reactivity hazard other than the effects described in sub-section below.
10.2 Chemical Stability:	Stable under normal conditions.
10.3 Possibility of Hazardous Reactions:	None.
10.4 Conditions to Avoid:	None.
10.5 Incompatible Materials:	No reaction with any common materials in dry or wet conditions.
10.6 Hazardous Decomposition Products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
8 / 12

SECTION 11: Toxicological Information

General information: None.

11.1 Information on toxicological effects

Acute toxicity - Oral
Product Based on available data, the classification criteria are not met.

Acute toxicity - Dermal
Product Based on available data, the classification criteria are not met.

Acute toxicity - Inhalation
Product Based on available data, the classification criteria are not met.

Skin Corrosion / Irritation
Product Based on available data, the classification criteria are not met.

Serious Eye Damage / Eye Irritation
Product Based on available data, the classification criteria are not met.

Respiratory or Skin Sensitisation
Product Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity
Product Based on available data, the classification criteria are not met.

Carcinogenicity
Product Based on available data, the classification criteria are not met.

Reproductive toxicity
Product Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure
Product Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
Product Based on available data, the classification criteria are not met.

Aspiration Hazard
Product Not applicable to gases and gas mixtures..

SECTION 12: Ecological Information

12.1 Toxicity

Acute toxicity
Product No ecological damage caused by this product.

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
9/12

12.2 Persistence and Degradability

Product

The substance is naturally occurring.

12.3 Bioaccumulative Potential

Product

The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

12.4 Mobility in Soil

Product

The substance is a gas, not applicable.

**12.5 Results of PBT and vPvB
assessment**

Product

Not classified as PBT or vPvB.

12.6 Other Adverse Effects:

No ecological damage caused by this product.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

General information:

Do not discharge into any place where its accumulation could be dangerous. Vent to atmosphere in a well ventilated place.

Disposal methods:

Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes

Container:

16 05 05: Gases in pressure containers other than those mentioned in 16 05 04.

SECTION 14: Transport Information

ADR

14.1 UN Number:	UN 1066
14.2 UN Proper Shipping Name:	NITROGEN, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.2
Hazard No. (ADR):	20
Tunnel restriction code:	(E)
Emergency Action Code:	2T
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
10/12

RID

14.1 UN Number:	UN 1066
14.2 UN Proper Shipping Name	NITROGEN, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.2
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

IMDG

14.1 UN Number:	UN 1066
14.2 UN Proper Shipping Name:	NITROGEN, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2.2
Label(s):	2.2
EmS No.:	F-C, S-V
14.3 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

IATA

14.1 UN Number:	UN 1066
14.2 Proper Shipping Name:	Nitrogen, compressed
14.3 Transport Hazard Class(es)	
Class:	2.2
Label(s):	2.2
14.4 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–
Other information	
Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

14.7 Transport in bulk according to Annex II of MARPOL73 / 78 and the IBC Code: not applicable

Additional identification:

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

SECTION 15: Regulatory information

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

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
 Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
 11 / 12

National Regulations

Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives. This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010.

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

SECTION 16: Other Information

Revision Information: Not relevant.

Key literature references and sources for data: Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:
 Agency for Toxic Substances and Diseases Registry (ATSDR) (<http://www.atsdr.cdc.gov/>).
 European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.
 European Chemical Agency: Information on Registered Substances <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>
 European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.
 International Programme on Chemical Safety (<http://www.inchem.org/>)
 ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.
 Matheson Gas Data Book, 7th Edition.
 National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.
 The ESIS (European chemical Substances 5 Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).
 The European Chemical Industry Council (CEFIC) ERICards.
 United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)
 Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).
 Substance specific information from suppliers.
 Details given in this document are believed to be correct at the time of publication.
 EH40 (as amended) Workplace exposure limits.

Wording of the R-phrases and H-statements in sections 2 and 3

H280 Contains gas under pressure; may explode if heated.

Training information: Users of breathing apparatus must be trained. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Ensure operators understand the hazards.

SAFETY DATA SHEET
Nitrogen, compressed

Issue Date: 16.01.2013
Last revised date: 19.02.2016

Version: 1. 3

SDS No.: 000010021697
12 / 12

Classification according to Regulation (EC) No 1272 / 2008 as amended.

Press. Gas Compr. Gas, H280

Other information:

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national / local regulations are observed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

Last revised date:

19.02.2016

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.

Boss



Safety Data Sheet

BOSS® 312 100% Silicone HVAC/R

Section 1. Identification

Product Identifier	BOSS® 312 100% Silicone HVAC/R
Synonyms	31202; 31201; 31200
Manufacturer Stock Numbers	03932CL10; 03932WH10; 03932AL10

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			
(270) 769-3385			

Emergency Phone	
(800) 424-9300	
CHEMTREC	

Fax	
(270) 765-2412	

Section 2. Hazards Identification

Classification	N/A
Signal Word	
Pictogram	
Hazard Statements	N/A
Precautionary Statements	
Response	N/A
Prevention	Use only outdoors or in a well-ventilated area.
Storage	N/A
Disposal	N/A

Ingredients of unknown toxicity 0%

Hazards not Otherwise Classified

GHS Classification Not a hazardous substance or mixture.

GHS Label Element Not a hazardous substance or mixture.

Other hazards None known

Section 3. Ingredients

CAS	Ingredient Name	Weight %
64742-46-7	Distillates (petroleum), hydrotreated middle	5% - 10%
7631-86-9	Amorphous silica	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. Seek medical attention.

Skin Contact Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist.

Inhalation Material is not likely to present an inhalation hazard at ambient conditions. If material is heated or vapor are generated, care should be taken to prevent inhalation. In case of exposure to vapor, move to fresh air.

Ingestion No first aid should be needed.

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

Hazardous Decomposition Products Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products:
Carbon oxides and traces of incompletely burned carbon compounds

Formaldehyde
Silicon dioxide

Depending on color, hazardous decomposition products may also include:

Hydrogen
Nitrogen oxides
Metal oxides
Sulfur oxides

Section 6. Accidental Release Measures

Steps to be taken in case of spill or release

Observe all personal protection equipment recommendations in Sections 5 and 8. Wipe or scrape up and contain for salvage or disposal. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. 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.

Note

See Section 8 for information about personal protective equipment for spills. Contact Accumetric, LLC if additional information is required.

Section 7. Handling and Storage

Storage

Use reasonable care and store away from oxidizing materials. Keep container closed and store away from water or moisture. This material in its finely divided form presents an explosion hazard. Follow NFPA 654 (for chemical dusts) or 484 (for metal dusts) as appropriate for managing dust hazards to minimize secondary explosion potential.

Handling

Use adequate ventilation. Product evolves acetic acid when exposed to water or humid air. Provide ventilation during use to control acetic acid within exposure guidelines or use respiratory protection. Avoid eye contact. Avoid skin contact. Keep container closed. Do not take internally. Avoid breathing vapor.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits

Ingredient Name	ACGIH TLV OSHA PEL STEL		
Distillates (petroleum), hydrotreated middle	5 mg/m ³	5 mg/m ³	10 mg/m ³
Amorphous silica	10 mg/m ³	6 mg/m ³	Not Est.

Personal Protective Equipment

Goggles, Gloves

Component Exposure Limits - Almond only

Component Name: Dimethylsiloxane, trimethoxysilyl-terminated
CAS Number: PMN871176

	Exposure Limits: See methyl alcohol comments.
	Component Name: Aluminum CAS Number: 7429-90-5 Exposure Limits: OSHA PEL (final rule): TWA 15mg/m³ total dust, 5 mg/m³ respirable dust. ACGIH TLV: TWA 10mg/m³
Component Exposure Limits	Methyl alcohol forms on contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 200 ppm and ACGIH TLV-skin: TWA 200 ppm, STEL 250 ppm. Component Name: Ethyltriacetoxysilane CAS Number: 17689-77-9 Exposure Limits: See acetic acid comments
	Component Name: Methyltriacetoxysilane CAS Number: 4253-34-3 Exposure Limits: See acetic acid comments
Component Exposure Limits - Aluminum only	Acetic acid is formed upon contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 10 ppm and ACGIH TLV: TWA 10 ppm, STEL 15 ppm. Component Name: Aluminum CAS Number: 7429-90-5 Exposure Limits: OSHA PEL (final rule): TWA 15mg/m³ total dust, 5 mg/m³ respirable dust. ACGIH TLV: TWA 10mg/m³
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.
Inhalation	Suitable Gloves: Handle in accordance with good industrial hygiene and safety practices. Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. IH personnel can assist in judging the adequacy of existing engineering controls.
Suitable Respirator	Respiratory protection is not needed under ambient conditions. If vapor is generated when material is heated or handled, the following is advised. 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.
Personal Protective Equipment for Spills	Eyes: Use full face respirator. Skin: 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. Inhalation/Suitable Respirator: Respiratory protection recommended. 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.

Precautionary Measures

Avoid eye contact. Avoid skin contact. Avoid breathing vapor, mist, dust or fumes. Keep container closed. Do not take internally. Use reasonable care.

Comment

Product evolves acetic acid when exposed to water or humid air. Provide ventilation during use to control acetic acid within exposure guidelines or use respiratory protection.

When heated to temperatures above 150C (300F) in the presence of air, product can form formaldehyde vapors. Physical and health hazard information is readily available on the Material Safety Data Sheet. When heated to temperatures above 150C in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose throat, skin and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limit for formaldehyde.

Note

These precautions are for room temperature handling. Use at elevated temperatures or aerosol/spray applications may require added precautions.

Section 9. Physical and Chemical Properties

Physical State	Paste
Color	Refer to product label
Odor	Acetic Acid Odor
Odor Threshold	N/A
Solubility	Not Determined
Partition coefficient Water/n-octanol	N/A
VOC%	23 g/L
Viscosity	Not Determined
Specific Gravity	1.032
Density lbs/Gal	N/A
Pounds per Cubic Foot	N/A
Flash Point	Not Applicable
FP Method	N/A
Ph	Not Determined
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

Section 10. Stability and Reactivity

Materials to Avoid / Incompatibility	Oxidizing material can cause a reaction. Water, moisture or humid air can cause hazardous vapors to form as described in Section 8.
Conditions to Avoid	None known
Hazardous polymerization	Will not occur
Chemical Stability	Stable

Section 11. Toxicological Information

Special Hazard Information on Components No known applicable information.

Section 12. Ecological Information

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

RCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste? NO

State or local laws may impose additional regulatory requirements regarding disposal.

Section 14. Transport Information

UN Number	N/A
UN Proper Shipping Name	Not regulated
DOT Classification	Not regulated
Packing Group	Not regulated
Air Shipment (IATA)	Not subject to IATA regulations.
Ocean Shipment (IMDG)	Not subject to IMDG code.

Section 15. Regulatory Information

TSCA Status	The contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200. 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 (Aluminum and Almond only, all other colors have no known Chronic effects) Fire: No Pressure: No Reactive: No
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 (7631-86-9) Depending on color, may also contain: Alumina hydrate (21645-51-2) Aluminum (7429-90-5) Barium sulfate (7727-43-7) Carbon black (1333-86-4) Iron oxide (1309-37-1) Titanium dioxide (13463-67-7)
New Jersey	Dimethyl siloxane, hydroxy-terminated (70131-67-8) Ethyltriacetoxysilane (17689-77-9) Hydrotreated middle petroleum distillates (64742-46-7) Methyltriacetoxysilane (4253-34-3)

Silica, amorphous (7631-86-9)

Depending on color, may also contain:

Alumina hydrate (21645-51-2)

Aluminum (7429-90-5)

Antimony chromium manganese titanium brown rutile (6991-68-0)

Barium sulfate (7727-43-7)

Black iron oxide (1317-61-9)

Carbon black (1333-86-4)

Dimethyl siloxane, trimethylsilyl-terminated (PMN871176)

Iron hydroxide oxide (20344-49-4)

Iron oxide (1309-37-1)

Magnesium ferrite (12068-86-9)

Mineral Oil (8042-47-5)

Polydimethylsiloxane (63148-62-9)

Tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine [Pigment blue 15] (57455-37-5)

Titanium dioxide (13463-67-7)

Pennsylvania

Dimethyl siloxane, hydroxy-terminated (70131-67-8)

Hydrotreated middle petroleum distillates (64742-46-7)

Silica, amorphous (7631-86-9)

Depending on color, may also contain:

Alumina hydrate (21645-51-2)

Aluminum (7429-90-5)

Antimony chromium manganese titanium brown rutile (6991-68-0)

Barium sulfate (7727-43-7)

Black iron oxide (1317-61-9)

Carbon black (1333-86-4)

C.I. Pigment Blue 29 (57455-37-5)

Dimethyl siloxane, trimethylsilyl-terminated (PMN871176)

Iron hydroxide oxide (20344-49-4)

Iron oxide (1309-37-1)

Iron oxide (1332-37-2)

Magnesium ferrite (12068-86-9)

Mineral Oil (8042-47-5)

Polydimethylsiloxane (63148-62-9)

Tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine [Pigment blue 15] (57455-37-5)

Titanium dioxide (13463-67-7)

Yellow iron oxide (51274-00-1)

Section 16. Other Information

Revision Date

11/4/2015

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.



Safety Data Sheet

BOSS® 376 Hi-Temp HVAC/R Silicone

Section 1. Identification

Product Identifier	BOSS® 376 Hi-Temp HVAC/R Silicone
Synonyms	37610
Manufacturer Stock Numbers	02737RD10

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
(270) 769-3385

Emergency Phone
(800) 424-9300
CHEMTREC

Fax
(270) 765-2412

Section 2. Hazards Identification

Classification	N/A
Signal Word	
Pictogram	
Hazard Statements	N/A
Precautionary Statements	
Response	N/A
Prevention	Use only outdoors or in a well-ventilated area.
Storage	N/A
Disposal	N/A

Ingredients of unknown toxicity 0%

Hazards not Otherwise Classified

GHS Classification Not a hazardous substance or mixture.

GHS Label Element Not a hazardous substance or mixture.

Other hazards None known

Section 3. Ingredients

CAS	Ingredient Name	Weight %
64742-46-7	Distillates (petroleum), hydrotreated middle	5% - 10%
7631-86-9	Amorphous silica	5% - 10%

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

Section 4. First-Aid Measures

Comments Treat according to person's condition and specifics of exposure.

Ingestion No first aid should be needed.

Inhalation Remove to fresh air. No first aid should be needed.

Skin Contact Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist.

Eye Contact Immediately flush with water for 15 minutes. Seek medical attention.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media N/A

Unsuitable Extinguishing Media N/A

Comment When temperatures above 150°C in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limits for formaldehyde.

Hazardous Decomposition Products Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products:
Carbon oxides and traces of incompletely burned carbon compounds
Formaldehyde
Silicon dioxide
Metal oxides

Unusual Fire or Explosion Hazards None known

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.
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.
Flammability Limits in Air	Not determined
Auto-ignition Temperature	Not determined

Section 6. Accidental Release Measures

Steps to be taken in case of spill or release Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protection equipment recommendations described in Sections 5 and 8. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. For small spills, wipe up or scrape up and contain for salvage or disposal. Clean area as appropriate since spilled material, even in small quantities, may present a slip hazard. Final cleaning may require the use of steam, solvents or detergents. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur.

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	Use reasonable care and store away from oxidizing materials. Keep container closed and store away from water or moisture. This material in its finely divided form presents an explosion hazard. Follow NFPA 654 (for chemical dusts) or 484 (for metal dusts) as appropriate for managing dust hazards to minimize secondary explosion potential.
Handling	Use adequate ventilation. Product evolves acetic acid when exposed to water or humid air. Provide ventilation during use to control acetic acid within exposure guidelines or use respiratory protection. Avoid eye contact. Avoid skin contact.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits	Ingredient Name	ACGIH TLV	OSHA PEL	STEL
	Distillates (petroleum), hydrotreated middle	5 mg/m3	5 mg/m3	10 mg/m3
	Amorphous silica	10 mg/m3	6 mg/m3	Not Est.
Personal Protective	Goggles, Gloves			

Equipment

Exposure Controls

Acetic acid is formed upon contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 10 ppm and ACGIH TLV: TWA 10 ppm, STEL 15 ppm.

Respiratory protection

No respiratory protection should be needed with good local ventilation.

Eye Protection

Safety goggles or glasses with side shields are recommended.

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®

Note

These precautions are for room temperature handling. Use at elevated temperatures or aerosol/spray applications may require added precautions. For further information regarding aerosol inhalation toxicity, please refer to the guidance document regarding the use of silicone-based materials in aerosol applications that has been developed by the silicone industry (www.SEHSC.com).

Section 9. Physical and Chemical Properties

Physical State	Paste
Color	Red
Odor	Acetic Acid Odor
Odor Threshold	N/A
Solubility	Not Determined
Partition coefficient Water/n-octanol	N/A
VOC%	23 g/L
Viscosity	Not Determined
Specific Gravity	1.032
Density lbs/Gal	N/A
Pounds per Cubic Foot	N/A
Flash Point	Not Applicable
FP Method	N/A
Ph	Not Determined
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

Materials to Avoid / Incompatibility	Oxidizing material can cause a reaction. Water, moisture or humid air can cause hazardous vapors to form as described in Section 8.
Conditions to Avoid	None known
Hazardous polymerization	Will not occur
Chemical Stability	Stable

Section 11. Toxicological Information

Special Hazard Information on Components No known applicable information.

Section 12. Ecological Information

Fate and Effects in Waste Water Treatment Plants	Complete information is not yet available.
Environmental Effects	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	Not regulated
DOT Classification	Not regulated
Packing Group	Not regulated
Air Shipment (IATA)	Not subject to IATA regulations.
Ocean Shipment (IMDG)	Not subject to IMDG code.

Section 15. Regulatory Information

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: No 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	Iron oxide (1309-37-1) Silica, amorphous (7631-86-9)
New Jersey	Dimethyl siloxane, hydroxy-terminated (70131-67-8) Ethyltriacetoxysilane (17689-77-9) Hydrotreated middle petroleum distillates (64742-46-7) Iron oxide (1332-37-2) Methyltriacetoxysilane (4253-34-3) Polydimethylsiloxane (63148-62-9) Silica, amorphous (7631-86-9)
Pennsylvania	Dimethyl siloxane, hydroxy-terminated (70131-67-8) Hydrotreated middle petroleum distillates (64742-46-7) Iron oxide (1332-37-2) Polydimethylsiloxane (63148-62-9) Silica, amorphous (7631-86-9)

Section 16. Other Information

Revision Date	11/9/2015
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.



Safety Data Sheet

BOSS® 348 Multi Purpose Construction Adhesive

Section 1. Identification

Product Identifier	BOSS® 348 Multi Purpose Construction Adhesive
Synonyms	34800
Manufacturer Stock Numbers	04050WH10

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	(270) 765-2412

Section 2. Hazards Identification

Classification	SPECIFIC TARGET ORGAN TOXICITY (Repeated Exposure) - Category 2
Signal Word	Warning
Pictogram	



Hazard Statements	May cause damage to organs through prolonged or repeated exposure (kidneys)

Precautionary Statements

Response	Get medical advice/attention if you feel unwell.
Prevention	Do not eat, drink or smoke when using this product. Do not swallow.
Storage	N/A
Disposal	Dispose of contents/container in accordance with local, state and federal regulations.
General	If medical advice is needed, have product container or label at hand Keep out of reach of children Read label before use
Ingredients of unknown toxicity	12%
Hazards not Otherwise Classified	
Additional Information	None known

Section 3. Ingredients

CAS	Ingredient Name	Weight %
107-21-1	Ethylene Glycol	1% - 5%
57-13-6	Urea	1% - 5%

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

Section 4. First-Aid Measures

Eye Contact	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inhalation	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media	Use an extinguishing agents suitable for the surrounding fire.
Unsuitable Extinguishing Media	None known
Flammability of the product	In a fire or if heated, a pressure will occur and the container may burst.
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 full face-piece operated in positive pressure mode.

Section 6. Accidental Release Measures

Personal precautions	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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate personal protective equipment (see section 8).
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).
Small spill	Stop leak if without risk. Move containers from spill area. Dispose of via a licensed waste disposal contractor. Absorb with inert material.
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. 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 hazard as the spilled product.
Note	See section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and Storage

Handling	Put on appropriate personal protective equipment (see section 8). 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. Do not get in eyes or on skin clothing. Do not breathe vapor or mist. Do not ingest. 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.

Storage	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 contaminated.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits	Ingredient Name	ACGIH TLV	OSHA PEL	STEL
	Ethylene Glycol	50 mg/m3	40 ppm	40 ppm
	Urea	N/A	N/A	N/A
Personal Protective Equipment	Goggles, Gloves			
Recommended Monitoring Procedures	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.			
Engineering Measures	No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory.			
Hygiene measures	Wash hands, forearms and face 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.			
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.			
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.			
Eye Protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this necessary to avoid exposure to liquid splashes, mists or dusts.			
Skin 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.			
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.			

Section 9. Physical and Chemical Properties

Physical State	Liquid (paste)
Color	Beige
Odor	Characteristic (slight)
Odor Threshold	Not available
Solubility	N/A
Partition coefficient Water/n-octanol	N/A
VOC%	1.5g/L less H ₂ O, exmpt solvent
Viscosity	N/A
Specific Gravity	1.36163
Density lbs/Gal	N/A
Pounds per Cubic Foot	N/A
Flash Point	>93.333C >200F
FP Method	Setaflash
Ph	5
Melting Point	Not available
Boiling Point	100C 212F
Boiling Range	N/A
LEL	N/A
UEL	N/A
Evaporation Rate	< 1 (butyl acetate=1)
Flammability	N/A
Decomposition Temperature	N/A
Auto-ignition Temperature	N/A
Vapor Pressure	N/A
Vapor Density	N/A

Note

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

Section 10. Stability and Reactivity

Chemical stability	The product is stable.
Possibility of Hazardous Reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	No specific data.
Materials to Avoid	No specific data.
Incompatibility	Reactive or incompatible with the following materials: Acids and alkalis.
Hazardous Decomposition Products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological Information

Acute Toxicity

For Ethanediol (107-21-1)
LD50 Dermal 9530 uL/kg (Rabbit)
LD50 Intraperitoneal 5010 mg/kg (Rat)
LD50 Intravenous 2360 mg/kg (Rat)
LD50 Oral 4700 mg/kg (Rat)
LD50 Subcutaneous 2800 mg/kg (Rat)
LD50 Unreported 13 gm/kg (Rat)

LDLo Intravenous 2800 mg/kg (Rat)
LDLo Intramuscular 3300 mg/kg (Rat)

TDLo Oral 1110 mg/kg (Rat)
TDLo Oral 5000 mg/kg (Rat)
TDLo Oral 120 mg/kg (Rat)
TDLo Oral 1000 mg/kg (Rat)
TDLo Subcutaneous 3000 mg/kg (Rat)

Chronic Toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

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.

Sensitizer

No known significant effects or critical hazards.

Carcinogenicity

For Ethanediol (107-21-1)

ACGIH A4
IARC ---
EPA ---
NIOSH ---
NTP ---
OSHA ---

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Reproductive Toxicity

No known significant effects or critical hazards.

Section 12. Ecological Information

Environmental Effects

No known significant effects or critical hazards.

Biodegradability

No known significant effects or critical hazards.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal

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

UN Number	N/A
UN Proper Shipping Name	Not regulated
DOT Classification	Not regulated
Packing Group	Not regulated
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

US Federal Regulations	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
	Section 602 Class I Substances Not listed
	Section 602 Class II Substances Not listed
Superfund Amendments and Reauthorization Act of 1986 (SARA)	SARA 302/304 - Composition/information on ingredients No products were found
	SARA 304 RQ Not applicable
	SARA 311/312 Classification Delayed (chronic) health hazard
	SARA 311/312 - Composition/information on ingredients Urea (57-13-6) : Immediate (acute) health hazard Ethanediol (107-21-1) : Immediate (acute) health hazard, Delayed (chronic) health hazard
	SARA 313

SARA 313 notifications must not be detached for the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed

Form R - Reporting requirements
Ethanediol (107-21-1) 1-5%

Supplier notification
Ethanediol (107-21-1) 1-5%

State Regulations

Massachusetts
The following components are listed: ETHYLENE GLYCOL

New York
The following components are listed: Ethylene glycol

New Jersey
The following components are listed: ETHYLENE GLYCOL, 1,2-ETHANEDIOL

Pennsylvania
The following components are listed: 1,2-ETHANEDIOL

California Proposition 65
Not applicable

Section 16. Other Information

Revision Date

4/6/2016

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.

Bridgit



Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

1 Identification

- **Product identifier**
- **Trade name:** Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy™
- **Product size:** Variable
- **Other means of identification**
- **SDS Number:** 0126
- **Recommended use and restriction on use**
- **Recommended use:** Metal soldering
- **Restrictions on use:** No further relevant information available.
- **Manufacturer/Importer/Supplier/Distributor information**
- **Manufacturer/Supplier:**
Harris Products Group
4501 Quality Place
Mason, Ohio 45040 US
513-754-2000
- **Safety Data Sheet Questions:** salesinfo@jwharris.com
- **Arc Welding Safety Information:** www.lincolnelectric.com/safety
- **24-Hour Emergency Response Telephone Numbers:**
1-866-519-4752 (USA, Canada, Mexico only)
- (+) 1-760-476-3962
- **3E Company Access Code:** 333895

2 Hazard(s) identification

Classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Controlled Products Regulations.

- **Classification of the substance or mixture**
The product is not classified as hazardous according to the Globally Harmonized System (GHS).
- **Additional information:**
0 percent of the mixture consists of ingredient(s) of unknown toxicity.
There are no other hazards not otherwise classified that have been identified.

- **Label elements**
- **GHS label elements**
The product is not classified as hazardous according to OSHA GHS regulations within the United States.
- **Hazard pictograms** Not Regulated
- **Signal word** Not Regulated
- **Hazard-determining components of labeling:** None.
- **Hazard statements** Not Regulated

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

(Contd. of page 1)

- **Precautionary statements** Not Regulated
- **Additional information:**
- **Other hazards which do not result in GHS classification:**
Heat rays (infrared radiation) from flame or hot metal can injure eyes. Overexposure to soldering fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheets and the precautionary labels before using this product.
- **Hazard description:**
- **WHMIS-symbols:** Not hazardous under WHMIS.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

7440-31-5	tin	90-98%
7440-50-8	copper	0-6%
7440-36-0	antimony	0-6%

- **Additional information:**
For the listed ingredients, the identity and exact percentages are being withheld as a trade secret.
- **Composition comments:**
The term "Hazardous Ingredients" should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a hazard. The product may contain additional nonhazardous ingredients or may form additional compounds under the condition of use. Refer to Sections 2 and 8 for more information.

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:**
Move to fresh air if breathing is difficult. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.
- **After skin contact:**
Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, obtain medical assistance at once.
- **After eye contact:**
Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Obtain medical assistance at once.
- **After swallowing:**
Unlikely due to form of product, except for granular materials. Avoid hand, clothing, food, and drink contact with metal fume or powder which can cause ingestion of particulate during hand to mouth activities such as drinking, eating, smoking, etc. If ingested, do not induce vomiting. Contact a poison control center. Unless the poison control center advises otherwise, wash out mouth thoroughly with water. If symptoms develop, seek medical attention at once.

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

(Contd. of page 2)

- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Danger**
Soldering hazards are complex and may include physical and health hazards such as but not limited to infrared radiation from flame or hot metal, physical strains, thermal burns due to hot metal or spatter and potential health effects of overexposure to brazing fume or dust. Refer to Section 11 for more information.
- **Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
As shipped, the product will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.
For metal fires: Use specific agents only.
- **For safety reasons unsuitable extinguishing agents:** For metal fires: Use specific agents only.
- **Special hazards arising from the substance or mixture**
Infrared radiation from flame or hot metal can ignite combustibles and flammable products.
- **Advice for firefighters**
- **Special fire fighting procedures:**
Use standard firefighting procedures and consider the hazards of other involved materials.
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Read and understand American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" and National Fire Protection Association NFPA 51B, "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" before using this product.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8.
- **Environmental precautions:**
Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
- **Methods and material for containment and cleaning up:**
Clean up spills immediately, observing precautions in the personal protective equipment in Section 8.
Avoid generating dust. Prevent product from entering any drains, sewers or water sources.
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Dispose contaminated material as waste according to item 13.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

See Section 13 for disposal information.

(Contd. of page 3)

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
Any deposit of dust which cannot be avoided must be regularly removed.
Read and understand the manufacturer's instruction and the precautionary label on the product. Refer to Lincoln Safety Publications at www.lincolnelectric.com/safety. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, <http://pubs.aws.org> and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, www.gpo.gov.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store in closed original container in a dry place. Store away from incompatible materials. Store in accordance with local/regional/national regulations.
- **Information about storage in one common storage facility:** No special requirements.
- **Further information about storage conditions:** No special requirements.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Exposure Guidelines:**
Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) are values published by the American Conference of Government Industrial Hygienists (ACGIH). ACGIH Statement of Positions Regarding the TLVs® and BEIs® states that the TLV-TWA should be used as a guide in the control of health hazards and should not be used to indicate a fine line between safe and dangerous exposures. See Sections 2, 3, 8, 10, and 11 for information on potential fume constituents of health interest. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists.
- **Components with limit values that require monitoring at the workplace:**
These components may be present

7440-50-8 copper

PEL (USA)	Long-term value: 1* 0.1** mg/m ³ as Cu *dusts and mists **fume
REL (USA)	Long-term value: 1* 0.1** mg/m ³ as Cu *dusts and mists **fume
TLV (USA)	Long-term value: 1* 0.2** mg/m ³ *dusts and mists; **fume; as Cu

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

(Contd. of page 4)

EL (Canada)	Long-term value: 1* 0.2** mg/m ³ *dusts and mists; **fume, as Cu
EV (Canada)	Long-term value: 0.2* 1** mg/m ³ as copper, *fume; **dust and mists
LMPE (Mexico)	Long-term value: 0.2* 1** mg/m ³ *humo (como Cu); **polvo y niebla (como Cu)

7440-36-0 antimony

PEL (USA)	Long-term value: 0.5 mg/m ³ as Sb
REL (USA)	Long-term value: 0.5 mg/m ³ as Sb
TLV (USA)	Long-term value: 0.5 mg/m ³ as Sb
EL (Canada)	Long-term value: 0.5 mg/m ³ as Sb
EV (Canada)	Long-term value: 0.5 mg/m ³
LMPE (Mexico)	Long-term value: 0.5 mg/m ³ como Sb

7440-31-5 tin

PEL (USA)	Long-term value: 2 mg/m ³ metal
REL (USA)	Long-term value: 2 mg/m ³
TLV (USA)	Long-term value: 2 mg/m ³ metal
EL (Canada)	Long-term value: 2 mg/m ³ metal
EV (Canada)	Long-term value: 2* 0.1** mg/m ³ *metal, oxide, inorg. compds.; **org. compds.: Skin
LMPE (Mexico)	Long-term value: 2* mg/m ³ *metal

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Do not eat, drink or smoke when using the product. 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.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, www.aws.org.

Keep away from foodstuffs, beverages and feed.

· **Engineering controls:** No further relevant information available.

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

(Contd. of page 5)

- **Ventilation**

Use enough ventilation, local exhaust at the the flame or heat source, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the operator to keep his head out of the fumes. Keep exposure as low as possible.

- **Breathing equipment:**

Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. An approved respirator should be used unless exposure assessments are below applicable exposure limits.

- **Protection of hands:**



Thermally-protective gloves.

Suitable gloves can be recommended by the glove supplier.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Eye protection:**



Wear glasses or face shield with appropriate shading for brazing operations.

- **Body protection:** Protective work clothing

- **Limitation and supervision of exposure into the environment** No special requirements.

- **Risk management measures** No special requirements.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Solid material
Color:	According to product specification
Odor:	Odorless
Odor threshold:	Not determined.

- **pH-value:** Not applicable.

- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not determined.

- **Auto-ignition temperature:** Not determined.

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not self-igniting.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

(Contd. of page 6)

· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined.
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Insoluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** The product is non-reactive under normal conditions of use, storage and transport.
- **Chemical stability** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**
Reacts with strong acids and alkali.
Reacts with strong oxidizing agents.
- **Conditions to avoid** Avoid heat or contamination.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
Soldering fumes and gases cannot be classified simply. The composition and products: quantity of both are dependent upon the metal being joined, the process, procedure and filler metals and flux used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being joined (such as paint, plating, or galvanizing), the number of operators and the volume of the worker area, the quality and amount of ventilation, the position of the operator's head with respect to the fume and fumes from chemical fluxes used in some soldering operations.
When the wire or rod is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 3, plus those from the base metal and coating, etc., as noted above.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

(Contd. of page 7)

11 Toxicological information

- **Information on likely routes of exposure**

- **Ingestion:**

Unlikely route of exposure.

Health injuries from ingestion are not known or expected under normal use.

- **Inhalation:**

Potential chronic health hazards related to the use of welding consumables are most applicable to the inhalation route of exposure.

- **Skin Contact:** Heat rays can burn skin.

- **Eye Contact:** Heat rays (infrared radiation from flame) or hot metal can injure eyes.

- **Information on toxicological effects**

- **Inhalation**

Short-term (acute) overexposure to soldering fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Long-term (chronic) overexposure to soldering fumes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects.

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:** None.

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** No irritating effect.

- **in the respiratory system:** No irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

Organic polymers may be used in the manufacture of various welding consumables. Overexposure to their decomposition byproducts may result in a condition known as polymer fume fever. Polymer fume fever usually occurs within 4 to 8 hours of exposure with the presentation of flu like symptoms, including mild pulmonary irritation with or without an increase in body temperature. Signs of exposure can include an increase in white blood cell count. Resolution of symptoms typically occurs quickly, usually not lasting longer than 48 hours.

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- **Carcinogenic categories**

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

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

- **Other information relevant to carcinogenicity**

Cancerous lesions have been reported in persons exposed to arc rays.

- **Germ cell mutagenicity**

- **In vitro:** Not classified

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

(Contd. of page 8)

- **In vivo** Not classified
- **Reproductive toxicity** Not classified
- **Specific target organ toxicity - single exposure** Not classified
- **Specific target organ toxicity - repeated exposure** Not classified
- **Aspiration hazard** Not classified

12 Ecological information

- **Persistence and degradability**
Inorganic product, is not eliminable from water by means of biological cleaning processes.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Negative ecological effects are, according to the current state of knowledge, not expected.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
The generation of waste should be avoided or minimized whenever possible. When practical, recycle in an environmentally acceptable, regulatory compliant manner. Dispose of non-recyclable products in accordance with all applicable Federal, State, Provincial, and Local requirements.
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, ADN, IMDG, IATA	Not Regulated
· UN proper shipping name	
· DOT, ADR, ADN, IMDG, IATA	Not Regulated
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA	
· Class	Not Regulated

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

(Contd. of page 9)

· Packing group · DOT, ADR, IMDG, IATA	Not Regulated
· Environmental hazards: · Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	-

15 Regulatory information

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

· US Federal Regulations

None of the ingredients is listed.

· US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

· SARA

· Section 302 (extremely hazardous substances)

None of the ingredients is listed.

· Section 304 (emergency release notification)

7440-36-0 antimony

7440-50-8 copper

· Sections 311/312 (hazardous chemical threshold planning quantity in pounds)

None of the ingredients is listed.

· Section 313 (TRI reporting)

7440-36-0 antimony

7440-50-8 copper

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· CERCLA Hazardous Substance List (40 CFR 302.4):

7440-50-8 copper

7440-36-0 antimony

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

· Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

(Contd. of page 10)

- **Proposition 65 (California)**

- **Chemicals known to cause cancer:**

- None of the ingredients are listed.

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

- None of the ingredients are listed.

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

- None of the ingredients is listed.

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

- None of the ingredients is listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

- None of the ingredients is listed.

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

- None of the ingredients is listed.

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

- None of the ingredients is listed.

- **State Right to Know Listings**

- **US. New Jersey Worker and Community Right-to-Know Act**

- tin

- antimony

- copper

- **US. Massachusetts RTK - Substance List**

- tin

- antimony

- copper

- **US. Pennsylvania RTK - Hazardous Substances**

- tin

- copper

- antimony

- **US. Rhode Island RTK**

- tin

- copper

- antimony

- **Canada**

- **Canadian Controlled Products Regulations:** Not hazardous under WHMIS.

- **Canadian substance listings:**

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

- All ingredients are listed.

(Contd. on page 12)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 07/01/2015

Reviewed on 07/01/2015

Trade name: Lead-Free Solders, Bridgit®, Nick™, 95/5, Speedy

(Contd. of page 11)

· Canada Non-Domestic Substances List (NDSL)

None of the ingredients is listed.

· Canadian Ingredient Disclosure list (limit 0.1%)

None of the ingredients is listed.

· Canadian Ingredient Disclosure list (limit 1%)

All ingredients are listed.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

· Date of preparation / last revision 07/01/2015 / -

· 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

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)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

· Sources

SDS Prepared by:

ChemTel Inc.

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
· Disclaimer:

We urge each end user and recipient of this SDS to study it carefully. If necessary consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product.

Harris Products Group 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 use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Camel Grinding Wheels

Safety Data Sheet

1. Identification of the substance / preparation and of the company

1.1 Identification of the product :

1.2 Product Name Z3 & Z4 FLAP DISC MATERIAL

Coated abrasives for sanding of materials.

1.3 Company identification :

Company : CGW-Camel Grinding Wheels, Inc.
Address : 7525 N. Oak Park Ave., Niles, IL 60714
Phone 800-447-4248 Fax: 800-447-3731

2. Hazard Identification

Important notice

Coated abrasives are inert products which do not create any risk when handled or stored. When used on grinding machines they require specific measures to protect the operators. During the grinding operation 90% or more of the particulates of the dust come from the material being ground and, for wet grinding, from aerosols generated by grinding fluid. Specific attention must therefore be given to the nature of the part and of the fluid and the appropriate protection devices must be installed.

3. Composition / Information on Ingredients

Component	Material	Percent (%)	CAS No.
Backing	Polyester	25~ 60	n/a
Abrasives Grain	Aluminium Oxide	25~ 45	1344-28-1
	Alumina Zirconia		68955-26-0
Bonding Resin	Cured Phenolic Resin	8 ~ 16	9003-35-4
Filler	Calcium Carbonate	1 ~ 10	16389-88-1
	Cryolite	1 ~ 15	15096-52-3
	Others: Potassium Floroborate	1 ~ 15	14075-53-7

4. First Aid Measures

Inhalation : Not possible, due to the form of the product
Eye contact : Not possible, due to the form of the product
Skin contact : No harmful effects known
Ingestion : Not likely, due to the form of the product; if necessary contact physician
Note to physician : Not available.

Material Safety Data Sheet

Page no.2

5. Fire Fighting Measures

Toxic fumes may occur. Use respiratory protective equipment
Extinguishing media: water, foam, sand, powder or CO₂

6. Accidental release measures

Not applicable.

7. Handling and Storage

Keep the materials out of direct sunlight.
Do not place the materials on ground and concrete floor.
Avoid humid place and heating element such as heater and radiator.
Keep it in condition of Temperature, 15°C~27°C and Humidity, 40%~50%.

8. Personal Protection

Respiratory protection : Use respiratory protective equipment
Hand protection : Wear protective gloves
Eye protection : Wear protective goggles or face shield
Hearing protection : Use hearing protection

Note : Hazardous dust of the work piece material may be generated during grinding and/or sanding operation.
National regulations for dust exposure limit values have to be taken into consideration.

9. Physical and chemical Properties

Boiling Point (°C)	n / a	Specific Gravity (H ₂ O=1)	n / a
Vapor Pressure (mm Hg.)	n / a	Percent, Volatile by Volume (%)	n / a
Vapor Density (AIR=1)	n / a	Evaporation rate (Butyl Acetate =1)	n / a
Solubility in Water	n / a	Appearance and odor	n / a

10. Stability and Reactivity

Stability	☐ Unstable ☒ Stable	Condition to Avoid None
Incompatibility (materials to avoid)	Strong acids, Strong bases & Strong oxidizing agents may modify the mechanical characteristics of the products and create safety hazards when used on machines.	
Hazardous Decomposition Product	In use, dust and decomposing odors may be generated. In most cases, the material removed from the workplace will be significantly greater than the coated abrasives components.	
Hazardous	☐ May occur	Condition to Avoid

Material Safety Data Sheet

Page no.3

Polymerization	☒ Will nor occur	None
11. Toxicological Information		
No toxicological effects if inhaled or with eye or skin contact are known. See also section 8.		
12. Ecological Information		
12.1 Ecotoxicity	:	no effects know
12.2 Mobility	:	no potentials known
12.3 Persistence and degradability	:	no biodegradable potentials known
12.4 Bioaccumulative potentiall	:	no potential known
12.5 Other hazardous effects	:	no effects known
13. Disposal Considerations		
Follow national and regional and regulation.		
14. Transport Information		
The product is not covered by international regulation on the transport of dangerous goods.		
15. Regulatory information		
No specific issues		
16. Other Information		
The above information is based on our standard of knowledge and does not constitute any warranty of conditions of the product. The information does not form part of any contractual agreement. It remains the use's		

Charlotte

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

COMMON NAME:	CPVC Pipe and Fittings	
CHEMICAL NAME:	Not Applicable. Formulation, see section 3.	
FORMULA:	Mixture	
PRODUCT CAS NO.:	Mixture, see section 3.	
Recommended Use:	Pressure Pipe and Fittings (CTS) and Chemical Waste Drainage	
SUPPLIER:	Charlotte Pipe and Foundry Company (Plastics Division)	
ADDRESS:	4210 Old Charlotte Highway	
CITY, STATE, ZIP:	Monroe, NC 28110	
PHONE:	+1-704-372-3650	EMERGENCY PHONE: +1-704-372-3650

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Toxic and irritating gases and fumes may be given off during burning or thermal decomposition. 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.



GHS Status

This material is hazardous in accordance with the hazard communication standard, 29 CFR 1910.1200

Classification of the substance or mixture

Skin irritation – Category 2

Eye irritation – Category 2 B
Carcinogenicity – Category 2
Health hazard.

GHS label pictogram
Signal word
Hazard statements

Warning
Causes eye irritation.



SAFETY DATA SHEET

Precautionary statements	Causes skin irritation.
Prevention	Suspected of causing cancer if inhaled.
Response	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective breathing gear, such as an N95 or P95 respirator. Wash skin thoroughly after handling. If on skin: wash with plenty of water. 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. Take off contaminated clothing and wash before reuse.
Storage	Keep away from intense heat, flames. Store locked up.
Disposal	Dispose of in accordance with local regulations.
Hazards not otherwise classified	None known.
Relevant routes of exposure	Skin, eyes, inhalation.
Inhalation	Melted product is flammable and produces intense heat and dense smoke during burning. Irritating gases and fumes may be given off during burning or thermal decomposition.
Skin contact	Gases and fumes evolved during thermal processing or decomposition can cause skin irritation.
Eye contact	Dust can cause eye irritation. Gases and fumes evolved during thermal processing or decomposition can cause eye irritation.
Ingestion	No data available.

3. HAZARDOUS INGREDIENTS: COMPOSITION/INFORMATION

INGREDIENT	% WEIGHT	PEL-OSHA	TLV-ACGIH	NIOSH REL
Chlorinated polyvinyl chloride CAS 68648-82-8	>80%	None established for CPVC Particulates not otherwise classified: 15 mg/m3	None established for CPVC Particulates not otherwise classified: 10 mg/m3 (inhalable fraction)	None established
Titanium dioxide CAS 13463-67-7	0-5%	15 mg/m3, total dust	10 mg/m3 TWA	None established

4. 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.

SKIN CONTACT: Rinse with water. Remove contaminated clothing and shoes. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes before reuse.

INHALATION: If vapors from excessive heating, burning or decomposition products are inhaled: 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. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing, such as collar, tie, belt, or waistband. In case of inhalation of decomposition



SAFETY DATA SHEET

products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance.

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. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Loosen tight clothing, such as collar, tie, belt, or waistband.

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under surveillance for 48 hours

Specific treatments: None known

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: No data. Decomposition products may be combustible.

FLAMMABLE LIMITS: LEL: No Data UEL: No data

EXTINGUISHING MEDIA: Use media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARDS: Not flammable. Thermal decomposition may produce hydrogen chloride, carbon oxides, small amounts of benzene and aromatic and aliphatic hydrocarbons, phosgene.

PROTECTIVE MEASURES FOR FIRE FIGHTERS: Firefighters must wear a NIOSH-approved, full-face piece self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout or bunker gear with additional chemical protective clothing as necessary to protect against thermal decomposition products.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS: If there is a fire, promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency measures

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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders If specialized clothing is required to deal with decomposition products or fumes from burning or excessive heating, take note of information in Section 8 on suitable and unsuitable materials. See also 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 clean-up

Small spill Avoid dust generation. Vacuum dust with equipment fitted with a HEPA filter



SAFETY DATA SHEET

Large spill

and place in a closed, labeled waste container. See Section 1 for emergency contact information.
Move containers from spill area. Approach release from upwind. Prevent entry into sewers, waterways, basements, and confined areas. Avoid dust generation. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. See Section 1 for emergency contact information.

7. HANDLING AND STORAGE

Conditions for safe storage, including any incompatibilities

Store in a dry place away from direct sunlight, heat, and incompatible materials. Avoid intense heat and flames.

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Do not handle until all safety precautions have been read and understood. Do not get particles, vapors or fumes in eyes, on skin, or on clothing. Do not ingest. If during normal use, the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator.

Advice on general occupational hygiene

Employees must wash hands and face before eating, drinking, or smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also section 8 for additional information on hygiene measures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure to airborne contaminants below recommended and statutory limits.

RESPIRATORY PROTECTION: Cutting or sanding this product can generate dust. Used a properly fitted particulate filter 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 respirator. A NIOSH-approved N95 single use or P95 multiple use respirator will protect the employee from at least 95% of airborne particles. Follow the respirator manufacturer's instructions for proper use. If adhesives or other substances are used with this product, refer to the product manufacturer's safety data sheet for applicable respiratory protective measures.

SKIN PROTECTION: Chemical-resistant, impervious gloves complying with an approved standard should be worn when handling this or any chemical product, 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 containing several substances, the protection time of the gloves cannot be accurately estimated. If adhesives or other substances are used with this product, refer to the product manufacturer's safety data sheet for applicable skin protective measures.

BODY PROTECTION: Personal protective equipment for the body should be selected on the task being performed and the risks involved, and should be approved by a specialist before handling this product. If adhesives or other substances are used with this product, refer to the product manufacturer's safety data sheet for applicable skin protective measures.

EYE/FACE PROTECTION: Safety eyewear complying with an approved standard must be used when a risk assessment indicates this is necessary to avoid exposure to dust. Particulates and dust can be formed when cutting, grinding or sanding this product. If contact with dust or particulates is possible, the following should be worn unless the assessment indicates a higher degree of protection: safety glasses with side shields. If adhesives or other substances are used with this product, refer to the product manufacturer's safety data sheet for applicable eye and face protective measures.

SAFETY DATA SHEET

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Solid. Tan/grey
ODOR:	Not applicable.
ODOR THRESHOLD:	Not available
BOILING POINT:	Not available
FLASH POINT:	Not applicable
FLAMMABILITY:	Melted product is flammable.
AUTOIGNITION TEMPERATURE:	Not applicable
DECOMPOSITION TEMPERATURE:	Not available
LOWER/UPPER EXPLOSION LIMITS:	Not available
VAPOR PRESSURE:	Not available
LIQUID DENSITY:	Not available
SPECIFIC GRAVITY:	Approximately 1.4
MELTING POINT:	Not available
pH:	Not available
SOLUBILITY:	Insoluble
% VOLATILE:	Not available
VISCOSITY:	Not available

10. STABILITY AND REACTIVITY

Stability:	Stable at normal temperatures and pressures.
Reactivity:	Stable at normal temperatures and pressures.
Conditions to avoid:	Heat, flames, sparks and other sources of ignition.
Incompatible materials/conditions:	Consult the Charlotte Pipe and Foundry chemical resistance guide.
Hazardous decomposition products:	Hydrogen chloride, carbon oxides, small amounts of benzene and aromatic and aliphatic hydrocarbons, phosgene.
Hazardous polymerization:	Not available.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
No toxicological data is available for the finished product.



SAFETY DATA SHEET

SENSITIZATION: No data available.

MUTAGENICITY: No data available.

DEVELEPMENTAL: No data available.

Fertility: No data available.

CARCINOGENICITY: This product contains titanium dioxide, which is classified by the International Agency for Research on Cancer as 2B: possibly carcinogenic to humans. Not listed on the National Toxicology Program Report on Carcinogens or OSHA Subpart Z carcinogen list.

REPRODUCTIVE TOXICITY: Not available

TERATOGENICITY: Not available

SPECIFIC TARGET ORGANS – SINGLE EXPOSURE: Not available

SPECIFIC TARGET ORGANS – REPEATED EXPOSURE: Not available

ASPIRATION HAZARD: Not available

INFORMATION ON THE LIKELY ROUTES OF EXPOSURE:

Potential acute health effects

Eye contact	No known significant effects or critical hazards. Dust can cause eye irritation.
Inhalation	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	Skin irritant.
Ingestion	No known significant effects or critical hazards.

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact	No data available.
Inhalation	No data available
Skin contact	Adverse symptoms may include irritation.
Ingestion	No data available

Immediate, delayed and chronic effects from short term exposure

Short term exposure

Potential immediate effects	No data available.
Potential delayed effects	No data available

Long term exposure

Potential immediate effects	No data available.
Potential delayed effects	No data available

Potential chronic effects

General	No data available.
Carcinogenicity	May cause cancer. Risk of cancer depends on duration and level of exposure.

SAFETY DATA SHEET

12. ECOLOGICAL INFORMATION

Numerical measures of toxicity

No data available

Persistence and degradability

Does not biodegrade over time.

Bioaccumulative potential

No data available

Mobility in soil

No data available.

Other adverse effects: No known significant or critical hazards.

13. DISPOSAL CONSIDERATIONS

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste should not be disposed of to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste and packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material must be disposed of in a safe way.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME:	Not Regulated
HAZARD CLASS:	Not Regulated
IDENTIFICATION NUMBER:	Not Regulated
SHIPPING LABEL:	Not Regulated
PACKING GROUP:	Not Regulated

15. REGULATORY INFORMATION

United States

TSCA 8(b):

All ingredients are listed on the U.S. Toxic Substances Control Act inventory.

Airborne unbound particles of titanium dioxide of respirable size are listed as being carcinogenic per California Proposition 65.

16. OTHER INFORMATION

Date of Preparation: 11 December 2013

Key To Acronyms:



SAFETY DATA SHEET

CAS:	Chemical Abstracts Service
CFR:	Code of Federal Regulations
HEPA	High-Efficiency Particulate Air (filter)
IARC:	International Agency for Research on Cancer
LD50	Lethal dose to 50% of exposed laboratory animals
LC50	Lethal concentration to 50% of exposed laboratory animals
LEL:	Lower Explosive Limit
mg/l	Milligrams per liter
NIOSH:	National Institute for Occupational Safety and Health (US)
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration (US)
PEL:	Permissible Exposure Limit
TSCA	Toxic Substances Control Act
TLV:	Threshold Limit Value – American Conference of Governmental Industrial Hygienists (ACGIH)
TWA:	Time Weighted Average
UEL:	Upper Explosive Limit
ug/ m ³	Micrograms per cubic meter

DISCLAIMER

NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE FOR THE ABS MATERIALS AS REPRESENTED IN THIS MSDS SHEET. Charlotte Pipe and Foundry assumes no liability whatsoever for the use of or reliance upon this information. The information and data contained in this MSDS has been compiled from information believed to be accurate and is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage, handling and disposal of the product in compliance with applicable federal, state, and local laws and regulations.



© 2013 American Foundry Society

Meets the Requirements of OSHA Standard 29 CFR 1910.1200 Hazard Communication and EPA Supplier Notification Requirements under Section 313 of the Emergency Planning and Community Right-to-Know Act.

SAFETY DATA SHEET (SDS)

GRAY IRON CASTINGS

SDS SC-000-041 Rev. 12

DATE ISSUED

10/13

SECTION 1—PRODUCT IDENTIFICATION & COMPANY INFORMATION

PRODUCT NAME

GRAY IRON CASTINGS

OTHER DESIGNATIONS: ASTM (American Society for Testing & Materials) Specification No's., (ACI (Alloy Casting Institute) Alloy Designations—Grades)

ASTM: A48, A74, A126, A159, A278, A319, A667, A748, A823, A942

PRODUCT IDENTIFICATION (Label Identifier)

Cast Iron Soil Pipe and Fittings

MANUFACTURER'S NAME

Charlotte Pipe and Foundry Company

STREET ADDRESS

2109 Randolph Road

EMERGENCY TELEPHONE NO.

(800) 438-6091

MAILING ADDRESS

P.O. Box 35430

TELEPHONE NO.

(800) 572-4199

CITY, STATE, ZIP CODE, COUNTRY

Charlotte, NC, 28235, USA

FAX NO.

(800) 553-1605

E-MAIL ADDRESS/WEBSITE

www.charlottepipe.com

RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Solid casting; no restrictions

SECTION 2—HAZARD IDENTIFICATION

CLASSIFICATION

Castings are metallic articles that do not present hazards in their original form.

OTHER INFORMATION

1. Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.
2. Fumes from hot processes may contain other compounds with different exposure limits. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Consult Sections 3 & 8 for further information.

SECTION 3—COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME/COMMON NAME/SYNONYM	Wt %	CAS NUMBER
Carbon (C)	2.5–4.0	7440-44-0
Chromium (Cr)	0.01–1.5	7440-47-3
Copper (Cu)	0.01–1.00	7440-50-8
Iron (Fe)	86.3–96.2	7439-89-6
Manganese (Mn)	0.2–1.1	7439-96-5
Nickel (Ni)	0.01–1.5	7440-02-0
Silicon (Si)	1.0–3.5	7440-21-3
Tin (Sn)	0.1–0.15	7440-31-5

SECTION 4—FIRST AID MEASURES**EYE CONTACT:** Not applicable**SKIN CONTACT:** No special requirements**INGESTION:** Not applicable**INHALATION:** Not applicable**SECTION 5—FIREFIGHTING MEASURES****FLAMMABLE PROPERTIES:** Not applicable**EXTINGUISHING MEDIA:** Not applicable**PROTECTION OF FIREFIGHTERS:** Not applicable**SECTION 6—ACCIDENTAL RELEASE MEASURES**

Not applicable

SECTION 7—HANDLING & STORAGE**RECOMMENDED STORAGE**

No special requirements

PROCEDURES FOR HANDLING

Proper hand and foot protection is recommended.

SECTION 8—EXPOSURE CONTROLS/ PERSONAL PROTECTION**ENGINEERING CONTROLS**

None Required. There are no health hazards from castings in solid form.

SUBSTANCE	ACGIH TLV mg/m ³	OSHA PEL mg/m ³
Carbon (C)	N/E	N/E
Chromium (Cr)	0.5	1
Copper (Cu)	1	1
Iron (Fe)	N/E	N/E
Manganese (Mn)	0.02 (R); 0.1 (I)	5 (C)
Nickel (Ni)	1.5 (I)	1
Silicon (Si)		
Total dust	N/E	15
Respirable dust	N/E	5
Tin (Sn)	2	2

SUPPLEMENTAL INFORMATION

Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.

Fumes from hot processes may contain other compounds with different exposure limits than those listed above. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Exposure limits for the most common contaminants are offered as reference. Please consult a competent person for guidance on exposure assessment and controls.

In particular, Hexavalent Chromium is an OSHA Expanded Health Standard; refer to OSHA 29 CFR 1910.1026-Chromium (VI) for complete requirements.

SUBSTANCE	ACGIH TLV mg/m ³	OSHA PEL mg/m ³
Chromium Compounds (as Cr)		
Chromium (II) inorganic compounds	N/E	0.5
Chromium (III) inorganic compounds	0.5	0.5
Chromium (VI) inorganic compounds, certain water insoluble	0.01	0.005
Chromium (VI) inorganic compounds, water soluble	0.05	0.005
Chromium (VI) all forms and compounds	N/E	0.005
Copper Compounds (as Cu)		
Fume, as Cu	0.2	0.1
Dusts and mists, as Cu	1	1
Iron Compounds		
Iron oxide (Fe ₂ O ₃) fume	N/E	10
Iron oxide (Fe ₂ O ₃)	5 (R)	N/E
Nickel Compounds (as Ni)		
Insoluble, inorganic compounds	0.2(I)	1
Soluble, inorganic compounds	0.1(I)	1
Nickel oxide	0.2(I)	1
Tin compounds (as Sn)		
Tin Oxide & inorganic compounds, except SnH ₄	2	N/E
Inorganic compounds, except oxides, as Sn	N/E	2
Tin Oxides, as Sn	2	N/E
TERMS All exposure limits referenced above are 8 hour time weighted averages (TWA) unless otherwise noted. N/E = None Established C = Ceiling I = Inhalable fraction R = Respirable fraction TLV = Threshold Limit Value/American Conference of Industrial Hygienists (ACGIH) PEL = Permissible Exposure Limit / OSHA mg/m ³ = milligrams per cubic meter		
PERSONAL PROTECTION: Proper hand and foot protection is recommended.		
SECTION 9—PHYSICAL & CHEMICAL PROPERTIES		
APPEARANCE /PHYSICAL STATE		
Solid, silver gray in color		
ODOR/ODOR THRESHOLD	VAPOR DENSITY	
None	Not applicable	
MELTING POINT/FREEZING POINT	SPECIFIC GRAVITY (relative density)	
Approximately 2350°F (1300°C)	7.85 g/cm ³ for iron	
BOILING POINT	VAPOR PRESSURE	
5000°F (2750°C) for iron	Not applicable	
FLASH POINT	EVAPORATION RATE	
Not applicable for solid castings	Not applicable	
FLAMMABILITY	SOLUBILITY IN WATER	
Not flammable	Insoluble	
UPPER AND LOWER FLAMMABILITY LIMITS	pH	
Not applicable for solid castings	Not applicable	
AUTO IGNITION TEMPERATURE	VISCOSITY	
Not applicable	Not applicable	

DECOMPOSITION TEMPERATURE Not applicable		PARTITION COEFFICIENT Not applicable		
SECTION 10—STABILITY & REACTIVITY				
CHEMICAL STABILITY Stable				
CONDITIONS TO AVOID None				
REACTIVITY Not reactive		INCOMPATIBLE MATERIALS None		
HAZARDOUS DECOMPOSITION PRODUCTS None		POSSIBILITY OF HAZARDOUS REACTIONS Not applicable		
SECTION 11—TOXICOLOGICAL INFORMATION				
POTENTIAL HEALTH EFFECTS				
EYE CONTACT: None				
SKIN: None				
INGESTION: None				
INHALATION: None				
Carcinogen Classification of Ingredients				
INGREDIENT	OSHA	NTP	IARC	TARGET ORGAN
Nickel (metal)	NL	K	2B	Lung, Nose
TERMS OSHA—Occupational Safety & Health Administration Y = Listed as a Human Carcinogen NTP—National Toxicology Program K = Known to be a Human Carcinogen R = Reasonably Anticipated to be a Human Carcinogen (RAHC) IARC—International Agency for Research on Cancer 1 = Carcinogen to Humans 2A = Probably Carcinogenic to Humans 2B = Possibly Carcinogenic to Humans 3 = Unclassifiable as to Carcinogenicity in Humans 4 = Probably not Carcinogenic to Humans Other NL = Not Listed				
SECTION 12—ECOLOGICAL INFORMATION				
ECOTOXICITY Not applicable		PERSISTENCE AND DEGRADABILITY Not applicable		
BIOACCUMULATION POTENTIAL Not applicable		MOBILITY IN SOIL Not applicable		
OTHER ADVERSE EFFECTS Not applicable				
SECTION 13—DISPOSAL CONSIDERATIONS				
Recover or recycle if possible. Dispose of according to federal, state and local regulations. Dust collected from machining, welding, etc. may be classified as a hazardous waste. Consult federal, state and local regulations.				
SECTION 14—TRANSPORT INFORMATION				
US DEPARTMENT OF TRANSPORTATION (DOT)-HMR (Hazardous Materials Registration) Not Regulated		CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG) Not regulated		
UN SHIPPING NAME Not regulated		UN NUMBER Not regulated		

TRANSPORT HAZARD CLASS Not regulated	PACKING GROUP Not regulated
ENVIRONMENTAL HAZARDS None	LABEL(S) REQUIRED? No
TRANSPORT IN BULK Not applicable	SPECIAL SHIPPING INFORMATION Not applicable
SECTION 15—REGULATORY INFORMATION	
US-OSHA (Hazard Communication Standard) Reference 29 CFR 1910.1200 and 1910.1000. A finished casting is an article as defined in the OSHA Hazard Communication Standard 29CFR 1910.1200 (c). Dust or fumes generated by cleaning, machining, grinding, or welding of the casting may produce airborne contaminants, such as chromium, copper, iron, manganese, nickel, silicon, tin and silica. For hexavalent chromium references see 29 CFR 1910.1026.	
US-EPA (Toxic Substances Control Act–TSCA) All components of these products are on the TSCA inventory list or are excluded from listing.	
US-EPA (SARA Title III) Releases to the environment of Chromium, Copper, Manganese and Nickel , may be subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.	
CANADA-WHMIS (Workplace Hazardous Materials Information System) This SDS has been prepared according to the hazard criteria of the Controlled Product Regulations (CPR) and the SDS contains the information required by the CPR.	
CANADA DSL (Domestic Substance List) Inventory Status All components of these products are on the DSL Inventory.	
CEPA (Canadian Environmental Protection Act) Chromium and nickel are on the CEPA Priorities Substances Lists	
EINECS No. (European Inventory of Existing Commercial Chemical Substances) All components of these products are on the EINECS list.	
RoHS (Restriction of Certain Hazardous Substances) Compliance Castings comply with RoHS	
CALIFORNIA PROPOSITION 65 Compliance WARNING: This product contains or produces chemicals known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code 25248.5 et seq.)	
US STATE REGULATORY INFORMATION Some of the components listed in Section 3 may be covered under specific state regulations.	
SECTION 16—OTHER INFORMATION	
SDS SHEET PREPARED BY American Foundry Society, Inc. Occupational Safety & Health Committee (10-Q)	DATE 10/13
NOTE: This data and label information is offered in good faith as typical values and not as a product specification. 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 the recommendations in specific context of the intended use and determine if they are appropriate.	

Addendum: Label Information

<u>PRODUCT IDENTIFIER</u> SC-000-041 Rev. 12 GRAY IRON CASTINGS	
<u>SUPPLIER IDENTIFICATION</u> Company Name _____ Street Address _____ Mailing Address: _____ City _____ State _____ Zip/Postal Code _____ Country _____ Emergency Phone Number _____ Other Info _____	<u>HAZARD PICTOGRAMS</u> None* <u>SIGNAL WORD</u> None*
<u>PRECAUTIONARY STATEMENTS</u> None*	<u>HAZARD STATEMENTS</u> None*
*Castings do not present hazards in their original form. OTHER INFORMATION 1. Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica. 2. Fumes from hot processes may contain other compounds with different exposure limits. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Consult Sections 3 & 8 of the SDS for further information.	

Material Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072



IDENTITY (As Used on Label and List)

Adhesive Lubricant (Lubri/Fast) (Product ID D8510)

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I - Chemical Product and Company Identification

Manufacturer's Name

Jones Blair Company

Emergency Telephone Number

800-424-9300 Chemtrec Center

Address (Number, Street, City, State, and ZIP Code)

Dallas Distribution Center

Telephone Number for Information

214-353-1600

2728 Empire Central, P.O. Box 35286

Date Prepared

May, 2010

Dallas, TX 75235

Signature of Preparer (optional)

Section II - Composition, Information on Ingredients

CAS #	Hazardous Components (Chemical ID; Common Name(s))	PCT BY WT	VAPOR PRESSURE	EXPOSURE LIMITS
(1) CAS# 100-41-4	Ethyl Benzene	8.0090	5.500 MMHG@68°F	LEL = 1.10 ACGIH TLV/TWA: 100 ppm ACGIH TLV/STEL: 125 ppm OSHA PEL/TWA: 100 ppm OSHA STEL: 125 ppm
(2) CAS# 64742-94-5	Solvent Naphtha heavy aromatic	15-25	5.200 MMHG@68°F	LEL = 1.00 ACGIH TLV/TWA: NA OSHA PEL/TWA: NA LC50: >580 ppm (4Hrs - rat, inh) LD50: 13.3 ml/kg (rat)
(3) CAS# 1330-20-7	Xylene	48.6240	2.400 MMHG@68°F	LEL = 1.00 ACGIH TLV/TWA: 100 ppm ACGIH TLV/STEL: 150 ppm OSHA PEL/TWA: 100 ppm OSHA STEL: 150 ppm LC50: 5000 ppm (4Hrs - rat, inh) LD50: 4300 mg/kg (rat - oral)
(4) CAS# 1333-86-4	Carbon Black	1.8970		ACGIH TLV/TWA: 3.5 mg/m3 OSHA PEL/TWA: 3.5 mg/m3
(5) CAS# 91-20-3	Naphthalene	1.5130	.010 MMHG@68°F	ACGIH TLV/TWA: 10 ppm OSHA PEL/TWA: 10 ppm
(6) CAS# 95-63-6	Pseudocumene	<5.0	10.000 MMHG@68°F	ACGIH TLV/TWA: 25 ppm OSHA PEL/TWA: 25 ppm LC50: 18g/m3 (4Hrs - rat, inh) LD50: 5g/kg (rat - oral)

Section III - Hazards Identification

Route(s) of Entry:

Inhalation?

Yes

Skin?

Yes

Ingestion?

YES

Primary routes of exposure - inhalation, eye contact and skin contact.

Potential Health Effects; Signs and Symptoms of Exposure:

EYE: Liquid and aerosols of this product are irritating and can cause tearing, reddening, swelling and stinging of the eyes.

SKIN: Excessive skin contact may cause irritation and redness.

INHALATION: Excess inhalation may result in headaches, nausea, lung irritation, and narcosis.

INGESTION: Moderately toxic by ingestion (unless noted below).

CHRONIC EFFECTS: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

Contains solid materials: When subjected to operations such as milling, sawing or sanding of the cured coating, the resultant dust constitutes a hazardous dust of the non-volatile noted in Section II.

Carcinogenicity:

No Carcinogenic properties known unless noted below.

Contains low levels of Formaldehyde; which is listed by IARC & NTP as a suspect carcinogen. There is no current supporting evidence beyond animal testing that it may cause cancer in humans. Due to the low concentration, there should be minimal risk with adequate ventilation. See Section VIII. Contains low levels of Polyaromatic Hydrocarbons which have been shown to cause cancer and respiratory damage in laboratory animals. Contains ethylbenzene which has been classified as possibly carcinogenic to humans (Group 2B) on the basis of experimental animal studies, while there is inadequate evidence to show carcinogenicity for humans. Contains Carbon Black pigment which is listed by IARC as an animal carcinogen based on the long term, high concentration inhalant exposure of rats. Other animal testing (mice and hamsters) was negative and there is inadequate evidence with respect to humans. IARC has designated Carbon Black as a "Group 2B" or as a "possible" human carcinogen.

TARGET ORGANS: No Specific data available unless noted below.

Section IV- First Aid Measures

EYE CONTACT: Flush eyes with water for 15 minutes. If irritation persists, consult a physician.

SKIN CONTACT: Wipe area off and wash affected skin areas thoroughly with soap and water.

Promptly remove contaminated clothing and wash before reuse.

INHALATION: Move subject to fresh air.

INGESTION: If ingested, do not induce vomiting. Consult a physician immediately.

Section V- Fire Fighting Measures

Fire and Explosive Properties of the Chemical:

Containers may rupture due to very high temperature induced pressure.

Flashpoint	Flammable Limits	Low	High
83.0	Explosion Level	.9	7.0

Extinguishing Media

Foam, CO₂, dry chemical, or sand.

Fire Fighting Procedures and Equipment:

General procedures recommended. Avoid the use of water.

Section VI - Accidental Release Measures

Clean-Up:

Eliminate any ignition sources. Evacuate nonessential personnel. Ventilate the area of spill. Put on required personal protective equipment (see section VIII). Dike or impound spilled material and cover with inert absorbent material. Shovel or sweep into a disposable container. See section XIII. See section XV for SARA information.

Containment:

Dike with inert absorbant material.

Section VII - Handling and Storage

Handling:

Keep containers tightly closed.

Storage:

Store in protected area.

Special Comments:

Ideal storage temperature range for ease of handling is 50°F to 85°F.

Wash hands thoroughly with soap and water after handling as a standard hygienic practice.

Section VIII - Exposure Controls, Personal Protection

Eye Protection:

Face shield or goggles. Do not wear contact lenses.

Respiratory Protection:

Provide adequate ventilation (see below). For confined areas or when using spray application, wear appropriate, properly fitted respirator (NIOSH/MESA approved) during and after application unless air monitoring demonstrates vapor/mist levels below applicable limits. Follow respirator manufacture's directions for respirator use.

Skin Protection:

Wear solvent resistant gloves. Wear gloves, boots and aprons.

Engineering Controls:

Adequate ventilation in volume and pattern should be provided to keep vapor concentration below LEL and TLV limits. If spray applied, respiratory protection is mandatory.

Section IX - Physical and Chemical Properties

Boiling Range Lower: 275 Higher: 425	VOC (lbs/gal) 6.129
Evaporation Rate (n-Butyl Acetate = 1) .800	Volatile VOC by Volume (%) 84.3681
Vapor Density (AIR = 1) 4.80	Volatile VOC by Weight (%) 78.8269
Vapor Pressure (mm Hg.) 10.00	Weight/Gallon 7.7748 lb/gl

Section X - Stability and Reactivity

Incompatibilities: Strong oxidizing materials.	Conditions to Avoid: Heat, sparks and open flames.
Decomposition: When heated, vapors given off are primarily organic acids	Polymerization: Will not occur (unless noted below).
and thermal decomposition products including carbon dioxide,	Stability: This material is stable.
carbon monoxide and mixed hydrocarbons.	

Section XI - Toxicological Information

Eye Effects: Vapors and mists of this product are irritating to the eyes.	Oral Effects: Toxic by ingestion.
Skin Effects: Excessive skin contact may cause irritation and redness.	Inhalation Effects: Excess inhalation may result in headaches, nausea, lung irritation, and narcosis.

Section XII - Ecological Information

Ecotoxicological Information:	Environmental Fate:

Section XIII - Disposal Consideration

Waste Disposal:

Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Incineration is the preferred method. Do not heat or cut empty containers with electric or gas torch.

Section XIV - Transport Information

This section provides basic shipping classification information and does not contain all regulatory transportation details. Refer to all applicable regulations for domestic, international, air, vessel and ground transportation requirements and restrictions.

DOT Hazard Class:

Three (3)

DOT Shipping Name:

Adhesive, containing a flammable liquid.

DOT Packing Group:

III

UN / NA Number:

UN 1133

International Shipment or Air DOT:

Same as above.

Other:

This product qualifies for a limited quantity exception per CFR 173.150 (b) (3) for inner containers <= 1.3 gallons and total gross package wt <= 66 lbs.

Section XV - Regulatory Information

Federal Regulations

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency

Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

Ethyl Benzene	CAS# 100-41-4	PCT By Wt: 8.0090	Naphthalene	CAS# 91-20-3	PCT By Wt: 1.5130
Xylene	CAS# 1330-20-7	PCT By Wt: 48.6240	Pseudocumene	CAS# 95-63-6	PCT By Wt: <5.0

This product is not a marine pollutant. This product is not manufactured with and does not contain ozone depleting substances (unless noted below). All ingredients used to manufacture this product are TSCA listed.

Based on the presence of components (02), which is/are the subject of a TSCA section 4 test rule, a section 5 SNUR or a section 6 Risk Management Rule. Export of such subject materials requires that a section 12 (b) notice be given to EPA by the exporter. (See 40 CFR Chapter 1, Part 707, subpart D, Sections 707.60, 707.65 and 707.67).

Based on the presence of components (01, **, 03, 05) contains reportable HAPS.

State Regulations

Based on the presence of components (01) subject to the reporting requirements under California's Proposition 65 in that this product contains ethylbenzene which appears on the California Safe Drinking Water and Toxics Enforcement Act List of chemicals known to cause cancer.

Based on the presence of components (04) subject to the reporting requirements under California's Proposition 65 in that this product contains carbon black which appears on the California Safe Drinking Water and Toxics Enforcement Act List of cancer causing agents.

Based on the presence of components (05) subject to the reporting requirements under California's Proposition 65 in that this product contains naphthalene which appears on the California Safe Drinking Water and Toxics Enforcement Act List of cancer causing agents.

Due to the presence of component(s) () subject to the reporting requirements under California's Proposition 65 in that this product contains toluene which appears on the California Safe Drinking Water and Toxics Enforcement Act List of known reproductive toxins.**

Due to the presence of component(s) () subject to the reporting requirements under California's Proposition 65 in that this product contains a trace of a chemical(s) which appear on the California Safe Drinking Water and Toxics Enforcement Act List of known reproductive toxins or cancer causing agents.**

Based on the presence of components (, 03) subject to the reporting requirements under California's Proposition 65 in that this product contains a trace of benzene which appears on the California Safe Drinking Water and Toxics Enforcement Act List of cancer causing agents and reproductive toxicity agents.**

International Regulations

All ingredients in this product comply with the New Substances Notification Requirements under the Canadian Environmental Protection Act (CEPA).

Duro-Dyne



HEALTH	2
FLAMMABILITY	4
REACTIVITY	1

SAFETY DATA SHEET

Prepared by Duro Dyne December 4, 2013

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade name: DURO DYNE WEB AEROSOL SPRAY ADHESIVE

Product Identifier: ASA-W

Item #: 5015

Supplier Details: DURO DYNE CORPORATION

81 Spence Street

Bay Shore, NY 11706

Information

Phone No: 800-899-3876

Emergency

Phone No: 800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATIONS

Emergency Overview: Keep from reach of children. Do not puncture, incinerate, or place aerosol product containers in compactors. Containers of this material may be hazardous when emptied since containers retain product residues (vapor, liquid, and/or solid). All hazard precautions given must be observed. Do not flame cut, braze or use welding torch. Intentional misuse by deliberately concentrating and inhaling this product may be harmful or fatal.

Effects of Overexposure:

Eye Contact: Can cause severe irritation, redness, tearing, blurred vision.

Skin Contact: Prolonged or repeated contact can cause moderate irritation, defatting, dermatitis.

Inhalation: Excessive inhalation of vapors can cause nasal and respiratory irritation, dizziness, weakness, fatigue, nausea, headache, possible unconsciousness, and even asphyxiation. Overexposure may cause damage to the nervous system.

Effects of Overexposure- Ingestion: No Information.

Effects of Overexposure- Chronic Hazards:

Overexposure to this material (or its components) has apparently been found to cause the following effects in laboratory animals: kidney damage, eye damage, liver damage, lung damage, nasal damage, nervous system damage, testis damage. Overexposure to this material (or its components) has apparently been found to cause the following effects in humans: visual impairment, central nervous system effects.

Primary Route(s) of Entry: Skin contact, skin absorption, inhalation, eye contact.

3. COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THAN	TLV TWA	ACGIH		OSHA	COMPANY	
					TLV STEL	PEL TWA	PEL CEILING	TLV TWA	SKIN
01	ACETONE	67-64-1	25.0%	500ppm	750ppm	1000ppm	N.E.	N.E.	No
02	HEXANE	110-54-3	25.0%	50ppm	N.E.	500ppm	N.E.	N.E.	No
03	PROPANE	74-98-6	25.0%	2500ppm	N.E.	1000ppm	N.E.	N.E.	No
04	DIMETHYL ETHER	115-10-6	15.0%	N.E.	N.E.	N.E.	N.E.	1000ppm	No

(See Section 16 for abbreviation legend)

4. FIRST-AID MEASURES

Eye Contact: Flush with large amounts of water, lifting upper and lower lids occasionally, get medical attention.

Skin Contact: Thoroughly wash exposed area with soap and water. Remove contaminated clothing. Launder contaminated clothing before re-use. Get medical attention if irritation persists. Mineral oil, baby oil, makeup remover, mineral spirits, or other similar mild solvent may be used to remove the sticky residue left by the adhesive.

Inhalation: Remove individual to fresh air. If breathing is difficult, administer oxygen. Give artificial respiration if breathing has stopped. Keep person warm and quiet. Get medical attention.

Ingestion: Do not induce vomiting. Give two glasses of water if conscious. Never give anything by mouth to an unconscious person. Get immediate medical attention.

5. FIRE FIGHTING MEASURES

Flash Point (Pensky-Martens C.C.): -156°F
Lower Explosive Limit: 1.0%
Upper Explosive Limit: 18.0%
Autoignition Temperature: N.D.
Extinguishing Media: CO₂, dry chemical, foam, water fog

Unusual Fire and Explosion Hazards: Vapors are heavier than air and travel along the ground or may be moved by ventilation and ignition sources at locations distant from the material handling point. For aerosol products-expose to temperatures over 130°F may cause containers to burst releasing highly flammable gas.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus with a full-face piece operated in pressure-demand or other positive pressure mode when fighting fires. Keep fire exposed containers cool with water fog.

6. ACCIDENTAL RELEASE MEASURE

Spill Response: Eliminate sources of ignition and ventilate area. Persons not properly equipped should be excluded from area. Stop spill at source-prevent spreading. Avoid inhalation of vapors. Avoid skin contact with liquid. Soak up on absorbent material and place into proper container for disposal. Use non-sparking scoops for flammable materials. Clean walking surfaces thoroughly to reduce slipping hazard.

7. HANDLING AND STORAGE

Handling: Containers of this material may be hazardous when emptied, since containers retain product residues (vapor, liquid, and/or solid). All hazard precautions given must be observed. Do not flame cut, braze or use welding torch on containers. Intentional misuse by deliberately concentrating and inhaling the vapors from this product may be harmful or fatal.

Storage Temperature: Do not store above 120°F. Do not store in direct sunlight. Keep away from heat sources, open flame, pilot lights, sparks, and other sources of ignition. Do not store above 120°F. Do not store in direct sunlight.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Provide sufficient mechanical ventilation (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

Respiratory Protection: If work place exposure limits of product or any component is exceeded, use a NIOSH/MSHA approved respirator. Consult your safety equipment supplier for recommendations.

Skin Protection: Wear impervious gloves if method of use involves skin contact with product. Consult your safety supply vendor for glove recommendations.

Eye Protection: Wear safety glasses at minimum, more extensive protection may be necessary depending on how the product is to be used.

Other Protective Equipment: Wear impervious clothing if bodily exposure is anticipated. Consult your safety supply vendor for recommendations.

Hygienic Practices: Wash hands before eating or smoking. Smoke in designated areas only. Remove and launder clothing if contaminated.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Range: -44 –500°F.

Odor: Mint when wet.

Appearance: White liquid.

Solubility in H₂O: Negligible.

Freeze Point: N.D.

Vapor Pressure: N.D.

Physical State: Liquid

Coefficient of Water/Oil

Distribution: N.D.

Vapor Density: Is heavier than air.

Odor Threshold: N.D.

Evaporation Rate: Is faster than Butyl Acetate.

Specific Gravity: 0.7025

PH @ 0.0%: N.A.

Viscosity: N.D.

(See Section 16 for abbreviation legend)

10. STABILITY AND REACTIVITY

Conditions to Avoid: Heat, sparks, welding arcs, open flame, pilot lights, static electricity or other source of ignition.

Incompatibility: Oxidizing agents, acids, reducing agents, strong oxidizers.

Hazardous Decomposition Products: Carbon monoxide and carbon dioxide, various hydrocarbons, nitrogen oxide, nitrogen peroxide, aldehydes, carboxylic acids.

Hazardous Polymerization Conditions: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

11. TOXICOLOGICAL INFORMATION

No product or component toxicological information is available.

12. ECOLOGICAL INFORMATION

No information.

13. DISPOSAL CONSIDERATIONS

Disposal Method: Dispose of in accordance with all local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT Proper Shipping Name: Aerosols

DOT Technical Name: N.A.

DOT Hazard Class: 2.1

Hazard Subclass: None.

DOT UN/NA Number: UN1950

Packing Group: None.

Resp: Guide Page 126

Additional Information: For domestic ground and air shipment this product may be shipped as a Consumer Commodity ORM-D or as a Limited Quantity. Outer cartons must have the ORM-D designation or Limited Quantity diamond. DOT is transitioning from Consumer Commodity ORM-D marking to the new Limited Quantity diamond, which affords many of the same benefits as Consumer Commodity ORM-D. (Our original

cartons are currently preprinted with the ORM-D designation for ground shipment, but we are transitioning to the ground version of the Limited Quantity diamond the second quarter of 2012.)

15. REAGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS-

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

CERLA-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 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD, PRESSURIZED GAS HAZARD

SARA Section 313: This product contains the following substances subject to the reporting requirements of Section 313 of the Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Chemical Name: Hexane
CAS Number: 110-54-3
WT/WT % is less than: 25.0%

Toxic Substances Control Act: This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

Chemical Name: No information is available.
CAS Number: No information is available.

INTERNATIONAL REGULATIONS: AS FOLLOWS-

Canadian WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for the 16 headings.

Canadian WHMIS Regulations: No information available.

TSCA Inventory: All components of this product are on the US TSCA inventory. Hexane is a mixture of n-hexane and other compounds all falling under the general chemical name light hydrotreated distillate CAS-68410-97-9. The n-hexane content of our hexane is 60-70%. On June 30, 1993 the OSHA Z-1-A table was revoked and OSHA reverted back to their prior exposure limits. The values on this MSDS reflect the roll back to the prior values. Some states may continue to enforce the 1993 limits. On June 16, 1995 EPA announced in a final rule that the acetone would no longer be considered a VOC for air attainment standards (It is now an exempt compound). The VOC calculations on this MSDS are based on acetone being an exempt compound. The June 16 rule also removed acetone from the list of SARA 313 reportable chemicals.

16. OTHER INFORMATION

Hazard Rating: Health: 2 Flammability: 4 Reactivity: 1

Date SDS Prepared: June 29, 2012

Volatile by Weight: 54.1%

VOC Content: 378 grams/liter total product
476 grams/liter less water and exempt
0.41 lbs/can

Legend: N.A – Not Applicable
N.E. – Not Established
N.D.- Not Determined

THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE. BECAUSE SOME OF THE INFORMATION IS DERIVED FROM INFORMATION PROVIDED TO DURO DYNE CORPORATION FROM ITS SUPPLIERS, DURO DYNE CORPORATION MAKES NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SINCE THE USE OF THIS INFORMATION AND THE CONDITIONS AND USE OF THIS PRODUCT ARE CONTROLLED BY THE USER, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THE PRODUCT. THE INFORMATION IS SUPPLIED FOR YOUR INFORMATION AND CONSIDERATION AND DURO DYNE CORPORATION ASSUMES NO RESPONSIBILITY FOR USE OR RELIANCE THEREON. IT IS THE RESPONSIBILITY OF THE USER OF DURO DYNE CORPORATION PRODUCTS TO COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.



HEALTH	0
FLAMMABILITY	0
REACTIVITY	0

SAFETY DATA SHEET
Prepared by Duro Dyne June 6, 2014

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade name: DURO DYNE DUROLON FABRIC
Product Identifier: DFD 6, DFD 10
Item #: 10042, 10050
Supplier Details: DURO DYNE CORPORATION
81 Spence Street
Bay Shore, NY 11706

Information
Phone No: 800-899-3876
Emergency
Phone No: 800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATIONS

EMERGENCY OVERVIEW

Signal Word: This Product is not regulated
Physical Form: Solid
Odor: Typical Odor of Rubber
Health: This product has no adverse effect on human health.
Physical Hazards: None known.
Environmental: Not determined.

3. COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

Components	CAS #	Weight%

NON HAZARDOUS COMPONENTS

Components	CAS Number	Weight %
Chlorosulfonated polyethylene	68037-39-8	15-40%
Fiberglass	65997-17-3	15-40%
Limestone	1317-65-3	1-5%
Titanium Oxide	13463-67-7	1-5%
Diethyl phthalate	117-81-7	1-5%
Polychloroprene	9010-98-4	1-5%
Corn Starch	9005-25-8	1-5%

4. FIRST AID MEASURES

Eyes: This product is an inert solid. If in eye, remove as one would any foreign object.
Skin: Wash with soap and water. For hot product: immediately immerse in or flush affected area with large amounts of cold water.

Inhalation:	Remove to fresh air.
Ingestion:	Not likely happen under normal use

5. FIRE-FIGHTING MEASURES

Fire Fighting Measures:	Use water spray to cool fire exposed surfaces.
Suitable Extinguishing Media:	Use water, dry chemical, CO2 and alcohol foam.
Fire Fighting Equipment:	Respiratory and eye protection is required for firefighting personnel.
Hazardous Combustion Products:	Carbon monoxide and irritating smoke.

6. ACCIDENTAL RELEASE MEASURES

Cleanup Instruction:	Handle as a solid waste. Disposal must be in accordance with applicable Federal, State, / Provincial, and local regulations.

HANDLING AND STORAGE

Handling:	No special precautions necessary.
Storage:	Store in a cool and dry location.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

There are no OSHA or ACGIH exposure guidelines available for this product.

Personal Protective Equipment:

Eye / Face Protection:	Not usually required under normal condition.
Skin Protection:	Not usually required under normal condition.
Respiratory Protection :	Not usually required under normal condition..
Engineering Controls:	Not usually required under normal condition.
Other Protective Equipment:	Not usually required under normal condition.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Solid	Molecular Formula:
Color: White	Percent Volatile:
Odor: rubber	pH:
Boiling Point:	VOC:
Freezing/Melting Point:	Autoignition Temp.:
Solubility in Water: Insoluble	Decomposition Temp.:
Vapor Density:	Flammability Limits in Air:
Vapor Pressure:	Upper
Density:	Lower
Specific Gravity:	Flash point:
Viscosity	Test Method

10. STABILITY AND REACTIVITY

Stability:	Stable.
Conditions to Avoid:	
Incompatibility:	Strong acids and oxidizing agents.
Hazardous Decomposition Products:	Hydrogen chloride, sulphur oxides, organic acids, alcohols, aldehydes..

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity:	Not determined.
Acute Dermal Toxicity:	Not determined.
Acute Inhalation Toxicity:	Not determined.
Skin Sensitization:	Not expected to cause sensitization.
Respiratory Sensitization:	Not determined.
Carcinogenicity (IARC; NTP; OSHA; ACGIH):	

Components	CAS	IARC	Comment
Titanium Oxide	13463-67-7	Group 2B	Possibly carcinogenic to humans
Dioctyl phthalate	117-81-7	Group 3	Not classifiable as to carcinogenicity to humans

Mutagenicity:	Not determined.
Reproductive Toxicity:	Not determined.
Teratogenicity:	Not determined.
Neurotoxicity:	Not determined.
Subacute Toxicity:	Not determined.
Subchronic Toxicity:	Not determined.
Chronic Toxicity:	Not determined.
Absorption / Distribution / Excretion / Metabolism:	Not determined.
Additional Information:	Not determined

12. ECOLOGICAL INFORMATION

Toxicity to Fish:	Not determined.
Toxicity to Invertebrates:	Not determined.
Toxicity to Algae:	Not determined.
Toxicity to Sludge Respiration	
Inhibition Test:	Not determined.
Biochemical Oxygen Demand (BOD):	Not determined.
Chemical Oxygen Demand (COD):	Not determined.
Total Oxygen Demand (TOD):	Not determined.
Biodegradability:	Not determined.
Bioaccumulation:	Not determined.
Additional Environmental Data:	Not determined.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:	Dispose in accordance with local, state, provincial and federal regulations.

14. TRANSPORT INFORMATION

<u>Transportation of Dangerous Goods (TDG):</u>
Not regulated for transport by road or rail.

<u>International Maritime Dangerous Goods (IMDG):</u>
Not regulated for this mode of transport.

<u>International Air Transportation Authority (IATA):</u>
Not regulated for this mode of transport.

15. REGULATORY INFORMATION

Federal Regulations

**Workplace Hazardous Materials
Information System (WHMIS):**

Not regulated.

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

International Regulations

TSCA Section 8(b) Inventory Status: All component(s) comprising this product are either exempt or listed on the TSCA inventory.

Chemical Weapons Convention (CWC): This product does not contain any component(s) listed under the Chemical Weapons Convention Schedule or Chemicals.

9. 16. OTHER INFORMATION

Hazard Rating:

**Health: 0
Flammability: 0
Reactivity: 0**

Date SDS Prepared:

March 6, 2014

THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE. BECAUSE SOME OF THE INFORMATION IS DERIVED FROM INFORMATION PROVIDED TO DURO DYNE CORPORATION FROM ITS SUPPLIERS, DURO DYNE CORPORATION MAKES NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SINCE THE USE OF THIS INFORMATION AND THE CONDITIONS AND USE OF THIS PRODUCT ARE CONTROLLED BY THE USER, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THE PRODUCT. THE INFORMATION IS SUPPLIED FOR YOUR INFORMATION AND CONSIDERATION AND DURO DYNE CORPORATION ASSUMES NO RESPONSIBILITY FOR USE OR RELIANCE THEREON. IT IS THE RESPONSIBILITY OF THE USER OF DURO DYNE CORPORATION PRODUCTS TO COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.



HEALTH	1
FLAMMABILITY	0
REACTIVITY	0

SAFETY DATA SHEET

Prepared by Duro Dyne March 5, 2014

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade name: DURO DYNE THERMAFAB
Product Identifier: DFT 6, DFT 10
Supplier Detail: DURO DYNE CORPORATION
81 Spence Street
Bay Shore, NY 11706

Information

Phone No: 800-899-3876
Emergency Phone No: 800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATIONS

Route of Entry: This material may enter the body through inhalation of nuisance dust.
Target Organs: Respiratory system.
Inhalation: Sore, raspy throat.
Skin Contact: Redness and possible rash; itching
Eye Contact: Itching and redness.
Ingestion: N/A

GHS Signal Word:

WARNING

GHS Hazard Pictograms:



GHS Classifications:

Health, Skin corrosion/irritation, 3

Health, Specific target organ toxicity-Single exposure, 3

GHS Phrases:

H316-Causes mild skin irritation

H335-May cause respiratory irritation

GHS Precautionary Statements:

P264-Wash thoroughly after handling.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS: Fibrous Glass (CAS 65997-17-3)
Exposure Limits: OSHA PEL 15mg/m³(total), 5mg/m³(respirable).
ACGIH TLV 1 f/cc (69-75%)

4. FIRST AID AND EMERGENCY MEASURES

Eyes:	Rinse with water. Do not rub eyes. Seek medical attention.
Skin:	Rinse with copious quantities of cool water. If rash or itching persists, seek medical attention.
Inhalation:	Remove person to fresh air. If condition persists, seek medical attention.
Ingestion:	Not applicable.

5. FIRE FIGHTING MEASURES

Extinguishing Media:	Water, carbon dioxide, or dry chemical.
Special Fire Fighting Procedures:	Thermal decomposition of fiber coating may produce an irritating mixture of smoke and fumes.
Unusual Fire and Explosion Hazards:	None.
Flash Point (Method Used):	>250 C by TOC
Flammable Limits:	LEL: N/A UEL: N/A

6. ACCIDENTAL RELEASE MEASURE

Clean Up Instruction:	Material is a solid in roll form. If accidentally released, rewind material back onto roll.

7. HANDLING AND STORAGE

Handling Precautions:	Use adequate material handling equipment.
Storage Requirements:	Store in a dry place. Use may be at temperature extremes based on product data, but storage should be at ambient temperature.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines / Other:	Wash thoroughly with soap and water after handling.
Engineering Controls:	Local exhaust; dust collection.
Protective Equipment:	Safety glasses; cotton gloves; long sleeve clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid.
Color:	Silver-Grey Rubber Coating.
Odor:	No Odor.
Solubility in Water:	Negligible.
PH:	N/A
Vapor Pressure:	N/A
Vapor Density:	N/A

Boiling Point:	N/A
Freezing / Melting Point:	>1000° F
Specific Gravity / Density:	2.4

10. STABILITY AND REACTIVITY

Stability:	Material is stable.
Conditions to avoid:	None known.
Materials to Avoid (Incompatibility):	Strong oxidizing agents.
Hazardous decomposition of products:	Carbon monoxide; carbon dioxide.
Hazardous polymerization:	Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Direct contact with fiberglass materials or exposure to airborne fiberglass dust may irritate the skin, eyes, nose and throat. Fiberglass can cause itching due to mechanical irritation from the fibers. This is not an allergic reaction to the material. Breathing fibers may irritate the airways resulting in coughing and a scratchy throat. Some people are sensitive to the fibers while others are not.

12. ECOLOGICAL INFORMATION

No known hazards except for airborne fibers caused by nuisance dust. 10 milligrams per cubic meter for fiber diameters less than 7 microbes.

13. DISPOSAL CONSIDERATIONS

Waste Disposal:	Dispose in accordance with federal, state, or local approved landfill.

14. TRANSPORTATION INFORMATION

None special required.

15. REGULATORY INFORMATION

None known.

16. OTHER INFORMATION

Date SDS Prepared: January 29, 2014
Hazard Rating: Health: 1
Flammability: 0
Reactivity: 0

THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE. BECAUSE SOME OF THE INFORMATION IS DERIVED FROM INFORMATION PROVIDED TO DURO DYNE CORPORATION FROM ITS SUPPLIERS, DURO DYNE CORPORATION MAKES NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SINCE THE USE OF THIS INFORMATION AND THE CONDITIONS AND USE OF THIS PRODUCT ARE CONTROLLED BY THE USER, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THE PRODUCT. THE INFORMATION IS SUPPLIED FOR YOUR INFORMATION AND CONSIDERATION AND DURO DYNE CORPORATION ASSUMES NO RESPONSIBILITY FOR USE OR RELIANCE THEREON. IT IS THE RESPONSIBILITY OF THE USER OF DURO DYNE CORPORATION PRODUCTS TO COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

DFT 6 BJ010045
DFT 10 BJ010053



SAFETY DATA SHEET

Prepared by Duro Dyne January 18, 2017

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade name: DURO DYNE STRIPPER
Product Identifier: DEGALVINIZER & LUBRICATING SPRAY
Item #: 27147
Supplier Details: DURO DYNE CORPORATION
81 Spence Street
Bay Shore, NY 11706

Information
Phone No: 800-899-3876
Emergency
Phone No: 800-424-9300 (CHEMTREC)

2. HAZARD IDENTIFICATIONS

Physical hazards Flammable aerosols Category 1

Health hazards Not classified.

OSHA defined hazards Not classified.
Label elements



Signal word Danger

Hazard statement Extremely flammable aerosol.

Precautionary statement
Prevention

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.

Response If exposed or concerned: Get medical advice/attention.
Storage Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Disposal Dispose of waste and residues in accordance with local authority requirements.

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	%
Propane		74-98-6	10-20
Butane		106-97-8	2.5-10
Zinc Alkyldithiophosphate		68649-42-3	1-2.5
Other components below reportable levels			60-80

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Inhalation	If symptoms develop move victim to fresh air. Get medical attention if symptoms persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
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	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	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	Contents under pressure Pressurized container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed.
Special protective Equipment and Precations for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Fire fighting Equipment/instructions	Move containers from fire area if you can do so without risk Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.
General fire hazards	Extremely flammable aerosol.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away, Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. 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	Refer to attached safety data sheets and/or instructions for use. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Isolate area until gas has dispersed. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. 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	Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Level 3 Aerosol. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. 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
Propane (CAS 74-98-6)	PEL	1800 mg/m ³ 1000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m ³ 800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m ³ 1000 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering Controls 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.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other Wear suitable protective clothing.

Respiratory protection If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not 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

Physical state	Gas.
Form	Aerosol.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available
Flash point	-156.0 °F (-104.4 °C) propellant estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit – lower (%)	1.1 % estimated
Flammability limit – upper (%)	7.5 % estimated
Explosive limit – lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	500 °F (260 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Specific gravity	0.782 estimated

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	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Nitrates. Fluorine. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Butane (CAS 106-97-8)		
Acute		
Inhalation		
LC50	Mouse	1237 mg/l, Minutes
	Rat	52%, 120 Minutes
		1355 mg/l
Propane (CAS 74-98-6)		
Acute		
Inhalation		
LC50	Mouse	1237 mg/l, 120 Minutes
	Rat	52 %, 120 Minutes
		1355 mg/l
Components	Species	Test Results
		658 mg/l/4h

* 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	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
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	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure
Not classified.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard Not likely, due to the form of the product.

12. COLOGICAL 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
Zinc Alkyldithiophosphate (CAS 68649-42-3)			
Aquatic			
Crustacea	EC50	Daphnia	1.25 mg/L, 48 Hours
Fish	LC50	Fish	3, 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

Partition coefficient n-octanol / water (log K_{ow})

Butane	2.89
Propane	2.36

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 instruction Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure Do not puncture, incinerate or crush. 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	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, (each not exceeding 1 L capacity)
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

This product meets the exception requirements of section 173.306 as a limited quantity and may be shipped as a limited quantity. Until 12/31/2020, the "Consumer Commodity - ORM-D" marking may still be used in place of the new limited quantity diamond mark for packages of UN 1950 Aerosols. Limited quantities require the limited quantity diamond mark on cartons after 12/31/20 and may be used now in place of the "Consumer Commodity ORM-D" marking and both may be displayed concurrently.

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.

Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.
Packaging Exceptions	LTD QTY
IMDG	
UN number	UN1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Marine pollutant	No.
Environmental hazards	
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Packaging Exceptions	LTD QTY
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

DOT



IATA; IMDG



15. REGULATORY INFORMATION

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No

Delayed Hazard - No

Fire Hazard - Yes

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous No

chemical

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)

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Safe Drinking Water Act Not regulated.

(SDWA)

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))

Butane (CAS 106-97-8)

US. Massachusetts RTK - Substance List

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. New Jersey Worker and Community Right-to-Know Act

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. Pennsylvania Worker and Community Right-to-Know Law

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. Rhode Island RTK

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

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)	No
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)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	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

Prepared date January 6, 2017

Version # 02 Revision date: 1/18/17

THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE. BECAUSE SOME OF THE INFORMATION IS DERIVED FROM INFORMATION PROVIDED TO DURO DYNE CORPORATION FROM ITS SUPPLIERS, DURO DYNE CORPORATION MAKES NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SINCE THE USE OF THIS INFORMATION AND THE CONDITIONS AND USE OF THIS PRODUCT ARE CONTROLLED BY THE USER, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THE PRODUCT. THE INFORMATION IS SUPPLIED FOR YOUR INFORMATION AND CONSIDERATION AND DURO DYNE CORPORATION ASSUMES NO RESPONSIBILITY FOR USE OR RELIANCE THEREON. IT IS THE RESPONSIBILITY OF THE USER OF DURO DYNE CORPORATION PRODUCTS TO COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

Fresh Products



Safety Data Sheet

Date Issued: 12/21/2016

SECTION 1: IDENTIFICATION OF THE PREPARATION AND THE COMPANY

PRODUCT NAME: Sani Block & Screen
RECOMMENDED USE: Deodorizer
RESTRICTIONS ON USE: For intended use only
ITEM NUMBER: Sani

MANUFACTURER: Fresh Products, LLC, 30600 Oregon Rd. Perrysburg, Ohio 43551 USA
TELEPHONE: +1-419-531-9741
FAX: +1-419-531-8472
EMERGENCY CONTACT (spill/release): 800-424-9300

Section 2: HAZARDS IDENTIFICATION

General: Contains small amounts of chemicals that are hazardous to health and the environment

but in quantities too small to constitute any practical risks to health or the environment.

Classification: **WARNING**

Acute Toxicity Oral 4

Skin Sensitization 1



Hazard Phrases:

H302: Harmful if swallowed.

H317: May cause allergic skin reaction.

Precautionary Phrases:

P102: Keep out of reach of children.

P264: Wash hands thoroughly after handling.

P280: Wear suitable gloves.

P301+310: If swallowed, call physician

P302+P352: If on skin, wash with plenty of water.

P332+P313: If rash occurs, seek medical attention.

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

SECTION 3: INGREDIENT INFORMATION

Chemical Identification: Chemical Identification: Fitted urinal screen that freshens and cleans the urinal for up to 1200 flushes, while protecting the drain. Installing the urinal screen reduces the splash back, which helps keep liquids where they belong helping you by saving you cleaning time.

Level (%)	CAS Nr	EC Nr	Substance
0.5-1.5%	n/a	n/a	Fragrance
<.1%	n/a	n/a	Bacteria
0.25-1.25%	77-92-9	n/a	Citric Acid
10-20%	8052-48-0	n/a	Soap
2-10%	25155-30-0	n/a	Sodium Dodecylbenzene Sulfonate
15-25%	12179-04-3	n/a	Sodium Tetraborate 5 mol
45-55%	7757-82-6	n/a	Sodium Sulfate
0.1-1%	57-55-6	n/a	Propylene Glycol

Form/Shape: Fitted urinal screen weighs approximately 70-80g.

The product is a complex mixture of substances of which the following have been classified as presenting a health or environmental hazard or as having an occupational exposure limit within the meaning of the Directive 67/548/EEC or 1999/45/EC

CAS Number: Not applicable since the product is a preparation.

SECTION 4: FIRST AID MEASURES

General: No specific acute effects or symptoms are known.

Inhalation: No acute effects expected. If person is feeling unwell, remove to fresh air.

Ingestion: Possibility of ingestion limited due to product form and difficulty to chew and ingest. In the event of ingestion, rinse mouth thoroughly with water.

Skin: Wash off with soap and water.

Eyes: Possibility of eye contact limited. In the event, wash thoroughly with water or approved eyewash.

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media appropriate for the surrounding fire. Water spray, fog or mist. Dry chemicals, sand etc.

Exposure Hazards: Thermal decomposition or burning may release a variety of products ranging from simple hydrocarbons to toxic/irritating gases including carbon monoxide and carbon dioxide. Full protective clothing should be worn before a confined fire space is entered. Self-contained breathing apparatus should be worn.

SECTION 6: ACCIDENTAL RELEASE MEASURES

No special requirements for accidental release required. Apply good housekeeping practices.

SECTION 7: HANDLING AND STORAGE

Usage Precautions: Follow normal good-housekeeping practices. Keep away from direct flames.

Storage Precautions: Keep in cool, dry conditions in original containers at no more than 30° C

SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTION

Occupational Exposure limit: Not Established

Eye Protection: None required

Respiratory Protection: None required under normal usage

Protection: Although unexpected, avoid prolonged skin contact. Use chemically resistant gloves as needed.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Urinal block screen

Flash pt: Not applicable.

Relative Density: Not determined

Odor: Various Fragrance

Evaporation Rate: Not applicable.

Solubility in water: Insoluble.

Odor Threshold: Not determined

Flammability: Not determined/applicable

Partition Coefficient: Not determined

Color: Blue

UEL: Not determined

Autignition Temperature: Not applicable

pH value: Not determined/applicable

LEL: Not determined

Decomposition Temperature:

Melting Pt: Estimated 60° C

Vapor Pressure: Not determined/applicable

Not determined/applicable

Boiling Pt: Not applicable.

Vapor Density: Not determined/applicable

SECTION 10: STABILITY AND REACTIVITY

Stability: Normally stable.

Conditions to avoid: Avoid extreme heat and naked flames.

Materials to avoid: Strong oxidizing agents.

Decomposition Products: None under normal storage conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Effects: Ingredients include a small quantity of volatile fragrance chemicals which

Chronic Effects: None are known.

may contain small amounts of substances that are harmful if swallowed and/or irritating to the eyes and skin.

Health Risks: INHALATION: Prolonged exposure to volatile ingredients is unlikely to cause irritation or other adverse health effects.

INGESTION: No practical risk of adverse health effects.

SKIN CONTACT: No practical risk of adverse health effects.

EYE CONTACT: No practical risk of adverse health effects.

SECTION 12: ECOLOGICAL INFORMATION

No specific information has been established regarding the product. However according to the conventional method of Directive 99/45/EC the product is classified as harmful to aquatic organisms, or causing long-term effects in the aquatic environment.

Ecotoxicity: N/A

Bioaccumulative Potential: N/A

Other Adverse Effects: N/A

Persistence and Degradability: N/A

Mobility in Soil: N/A

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with Local Authority requirements e.g., for used product, as household waste

SECTION 14: TRANSPORT INFORMATION

Product is not regulated as hazardous

Transport Hazard Class: N/A

DOT Classifications: Non Hazardous

UN-Number: N/A

Packing group: N/A

UN Proper Shipping Name: N/A

Marine Pollutant: N/A

Special Precautions with Transport: N/A

SECTION 15: REGULATORY INFORMATION

Classification, Packaging and Labeling according to Directive 99/45/EC

Signal word:

Pictograms:

WARNING

Exclamation mark

Hazard Phrases:

Precautionary Phrases:

P301+310: If swallowed, call physician

H302: Harmful if swallowed.

P102: Keep out of reach of children.

P302+P352: If on skin, wash with plenty of water.

H317: May cause allergic skin reaction.

P264: Wash hands thoroughly after handling.

P332+P313: If rash occurs, seek medical attention.

P280: Wear suitable gloves.

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

SECTION 16: OTHER INFORMATION

This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard (HCS) adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Hardcast-Carlisle

Safety Data Sheet

Material Name: Roto-Tack

Product #:308573 -50 gal
308574- 1 gallon

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

Roto-Tack

Synonyms

Water-based Adhesive

Chemical Family

Adhesive

Product Use

Water based Adhesive

Restrictions on Use

For industrial use only.

Manufacturer Information

Carlisle HVAC Products
900 Hensley Lane
Wylie, TX 75098
www.carlislehvac.com

Medical Emergency:

CHEMTREC (USA): (800) 424-9300

MSDS Assistance – 972-442-6545

Technical Assistance – 888-229-2199

Customer Service – 888-229-0199

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Reproductive Toxicity - Category 1B

Specific Target Organ Toxicity - Single Exposure - Category 1 (body, central nervous system, systemic toxicity, eyes)

Specific Target Organ Toxicity - Single Exposure - Category 3

Specific Target Organ Toxicity - Repeated Exposure - Category 1 (eyes,central nervous system)

GHS Label Elements

Symbol(s)



Signal Word

Danger

Safety Data Sheet

Material Name: Roto-Tack

**Product #:308573 -50 gal
308574- 1 gallon**

Hazard Statement(s)

May damage fertility or the unborn child

Causes damage to organs

May cause respiratory irritation. May cause drowsiness or dizziness

Causes damage to organs through prolonged or repeated exposure

Precautionary Statement(s)

Prevention

Obtain special instructions before use

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

Use only outdoors or in a well-ventilated area

Wear protective gloves/protective clothing/eye protection/face protection

Do not breathe dust/fume/gas/mist/vapours/spray

Wash thoroughly after handling

Do not eat, drink or smoke when using this product

Response

If exposed: Call a POISON CENTER or doctor/physician

IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor if you feel unwell

Specific treatment (see label)

Storage

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

Store locked up

Disposal

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

Other Hazards

No additional information available.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
Mixture	Polymer, ethyl acrylate and methacrylic acid	1-5
Trade Secret	De-foaming agent	0.1-1
7664-41-7	Ammonia	0.1-1
Mixture	Polymer, vinyl acetate and vinyl acrylic	10-30
Trade Secret	Clay compound	0.1-1
1317-65-3	Limestone	1-5
67-56-1	Methanol	1-5

Safety Data Sheet

Material Name: Roto-Tack

Product #:308573 -50 gal
308574- 1 gallon

Trade Secret	Carbamic acid mixture	0.1-1
Mixture	Acrylic polymer emulsion	15-40
Mixture	Fuller's earth	1-5
Mixture	1,2-Benzisothiazolin-3-one mixture	0.1-1

Section 4 - FIRST AID MEASURES

Description of Necessary Measures

If exposed: Call a POISON CENTER or doctor/physician.

Inhalation

Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

Skin

Wash exposed skin with soap and water. Remove contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.

Eyes

Rinse cautiously with 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

Do NOT induce vomiting. If swallowed, get medical attention.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Most Important Symptoms/Effects

Acute

May cause mild eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness. Causes damage to respiratory system, body, central nervous system, systemic toxicity, eyes.

Delayed

May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure: eyes, central nervous system.

Note to Physicians

Contains: ammonia, methanol.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

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

Safety Data Sheet

Material Name: Roto-Tack

**Product #:308573 -50 gal
308574- 1 gallon**

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Slight fire hazard. Sealed containers may rupture or explode if exposed to heat.

Hazardous Combustion Products

Oxides of carbon, oxides of nitrogen, hydrocarbons

Fire Fighting Measures

Remove product from area of fire. Stay upwind and keep out of low areas.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Absorb with earth, sand or other non-combustible material and transfer to container. Dike for later disposal. Dispose in accordance with all applicable regulations.

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

This product contains crystalline silica, which is a known carcinogen: Do not grind or sand. 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. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage, Including any Incompatibilities

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

Store locked up

Store above 0 C. Store below 45 C. Do not cut, puncture, or weld on or near this container. Avoid contact with incompatible materials.

Incompatible Materials

Strong acids, strong oxidizing agents

Safety Data Sheet

Material Name: Roto-Tack

Product #:308573 -50 gal
308574- 1 gallon

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Ammonia	7664-41-7	
ACGIH:	25 ppm TWA	35 ppm STEL
NIOSH:	25 ppm TWA; 18 mg/m ³ TWA	35 ppm STEL; 27 mg/m ³ STEL
	300 ppm IDLH	
Europe:	20 ppm TWA; 14 mg/m ³ TWA	50 ppm STEL; 36 mg/m ³ STEL
OSHA (US):	50 ppm TWA; 35 mg/m ³ TWA	
Mexico:	25 ppm TWA LMPE-PPT; 18 mg/m ³ TWA LMPE-PPT	
	35 ppm STEL [LMPE-CT]; 27 mg/m ³ STEL [LMPE-CT]	
Clay compound	Trade Secret	
ACGIH:	0.025 mg/m ³ TWA respirable fraction	
NIOSH:	0.05 mg/m ³ TWA respirable dust	50 mg/m ³ IDLH respirable dust
OSHA (US):	((30)/(%SiO ₂ + 2) mg/m ³ TWA) total dust; ((250)/(%SiO ₂ + 5) mppcf TWA) respirable fraction; ((10)/(%SiO ₂ + 2) mg/m ³ TWA) respirable fraction	
Mexico:	0.1 mg/m ³ TWA LMPE-PPT respirable fraction	
Limestone	1317-65-3	
NIOSH:	10 mg/m ³ TWA total dust; 5 mg/m ³ TWA respirable dust	
OSHA (US):	15 mg/m ³ TWA total dust; 5 mg/m ³ TWA respirable fraction	
Mexico:	10 mg/m ³ TWA LMPE-PPT	20 mg/m ³ STEL [LMPE-CT]
Methanol	67-56-1	
ACGIH:	200 ppm TWA	250 ppm STEL
	Skin - potential significant contribution to overall exposure by the cutaneous route	
NIOSH:	200 ppm TWA; 260 mg/m ³ TWA	250 ppm STEL; 325 mg/m ³ STEL

Safety Data Sheet

Material Name: Roto-Tack

**Product #:308573 -50 gal
308574- 1 gallon**

	Potential for dermal absorption
	6000 ppm IDLH
Europe:	200 ppm TWA; 260 mg/m ³ TWA
	Possibility of significant uptake through the skin
OSHA (US):	200 ppm TWA; 260 mg/m ³ TWA
Mexico:	200 ppm TWA LMPE-PPT; 260 mg/m ³ TWA LMPE-PPT
	250 ppm STEL [LMPE-CT]; 310 mg/m ³ STEL [LMPE-CT]
	Skin - potential for cutaneous absorption

Biological limit value

There are no biological limit values for any of this product's components.

Engineering Controls

Ensure adequate ventilation. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear safety glasses or safety goggles, with a faceshield, as appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

Wear appropriate work clothing.

Respiratory Protection

A NIOSH approved respirator with a dust, mist, and fume filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits or when symptoms have been observed that are indicative of overexposure.

Glove Recommendations

Wear appropriate gloves. Recommended material type: Hycron(R), neoprene, nitrile.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white latex	Physical State	liquid
Odor	Slight, ammonia	Color	white
Odor Threshold	Not available	pH	Slightly acidic
Melting Point	Not available	Boiling Point	100°C (212 °F)
Freezing point	Not available	Evaporation Rate	62 - 66 % volatile
Boiling Point Range	Not available	Flammability (solid, gas)	Not available
Autoignition	Not available	Flash Point	Not available

Safety Data Sheet

Material Name: Roto-Tack

Product #:308573 -50 gal
308574- 1 gallon

Lower Explosive Limit	Not available	Decomposition	Not available
Upper Explosive Limit	Not available	Vapor Pressure	17 mmHg (@ 20 °C)
Vapor Density (air=1)	<1	Specific Gravity (water=1)	Not available
Water Solubility	Soluble	Partition coefficient: n-octanol/water	Not available
Viscosity	2000 - 3000 cps	Solubility (Other)	Not available
Density	1.03 (relative)	VOC	73 g/L (water excluded)

Other Information

No additional information available.

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal conditions of use.

Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials

Strong acids, strong oxidizing agents

Hazardous decomposition products

Oxides of carbon, oxides of nitrogen, hydrocarbons

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

May cause respiratory irritation. May cause drowsiness or dizziness.

Skin Contact

May cause mild skin irritation.

Eye Contact

May cause mild eye irritation.

Ingestion

Methanol can produce blindness with onset of symptoms being delayed for 18-24 hours.

Acute and Chronic Toxicity

Safety Data Sheet

Material Name: Roto-Tack

**Product #:308573 -50 gal
308574- 1 gallon**

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Polymer, ethyl acrylate and methacrylic acid (Mixture)

Oral LD50 Rat >5000 mg/kg

Dermal LD50 Rabbit >5000 mg/kg

De-foaming agent (Trade Secret)

Oral LD50 >2000 mg/kg

Chlorinated paraffins (Trade Secret)

Oral LD50 Rat >4 g/kg

Ammonia (7664-41-7)

Oral LD50 Rat 350 mg/kg

Inhalation LC50 Rat 2000 ppm 4 h

Polymer, vinyl acetate and vinyl acrylic (Mixture)

Oral LD50 Rat >5000 mg/kg

Dermal LD50 Rat >2000 mg/kg

Clay compound (Trade Secret)

Oral LD50 Rat 500 mg/kg

Limestone (1317-65-3)

Oral LD50 Rat 6450 mg/kg

Methanol (67-56-1)

Oral LD50 Rat 6200 mg/kg

Inhalation LC50 Rat 22500 ppm 8 h

Carbamic acid mixture (Trade Secret)

Oral LD50 Rat >2000 mg/kg

Dermal LD50 Rabbit >2000 mg/kg

Inhalation LC50 Rat >2.04 mg/L 4 hr

Acrylic polymer emulsion (Mixture)

Oral LD50 Rat >5000 mg/kg

Dermal LD50 Rabbit >5000 mg/kg

1,2-Benzisothiazolin-3-one mixture (Mixture)

Oral LD50 Rat 2342 mg/kg

Dermal LD50 Rabbit >5000 mg/kg

Inhalation LC50 Rat 900 mg/m³ 4 hr

Immediate Effects

May cause mild eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness. Causes damage to respiratory system, body, central nervous system, systemic toxicity, eyes.

Delayed Effects

May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure: eyes, central nervous system.

Irritation/Corrosivity Data

May cause respiratory irritation. May cause mild skin irritation. May cause mild eye irritation.

Respiratory Sensitization

No data available.

Dermal Sensitization

Safety Data Sheet

Material Name: Roto-Tack

**Product #:308573 -50 gal
308574- 1 gallon**

No data available.

Component Carcinogenicity

Chlorinated paraffins	Trade Secret
IARC:	Monograph 48 [1990] (Group 2B (possibly carcinogenic to humans))
DFG:	Category 3B (could be carcinogenic for man)
OSHA:	Present
Clay compound	Trade Secret
ACGIH:	A2 - Suspected Human Carcinogen
IARC:	Monograph 100C [2012]; Monograph 68 [1997] (Group 1 (carcinogenic to humans))
NTP:	Known Human Carcinogen (respirable size)
DFG:	Category 1 (causes cancer in man, alveola fraction)
OSHA:	Present (respirable size)

Germ Cell Mutagenicity

No data available.

Tumorigenic Data

No data available

Reproductive Toxicity

May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Central nervous system, body, systemic toxicity, eyes

Specific Target Organ Toxicity - Repeated Exposure

Central nervous system, eyes

Aspiration hazard

No data available.

Medical Conditions Aggravated by Exposure

No data available.

Additional Data

This product contains crystalline silica, which is a known carcinogen. However, this component is bound by the polymer portion of the sealant. The only way this component would be released is through incineration. Therefore, this product is not considered a carcinogen.

Section 12 - ECOLOGICAL INFORMATION

Safety Data Sheet

Material Name: Roto-Tack

**Product #:308573 -50 gal
308574- 1 gallon**

Ecotoxicity

Avoid release to the environment.

Component Analysis - Aquatic Toxicity

Polymer, ethyl acrylate and methacrylic acid	Mixture
Fish:	LC50 96 hr Pimephales promelas >1000 mg/L
Invertebrate:	EC50 48 hr Daphnia magna >1000 mg/L
Chlorinated paraffins	Trade Secret
Fish:	LC50 96 h Lepomis macrochirus >300 mg/L [static]; LC50 96 h Oncorhynchus mykiss >0.0109 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 94.5 - 271 mg/L [static]; LC50 96 h Lepomis macrochirus >0.1 mg/L [flow-through]; LC50 96 h Pimephales promelas >100 mg/L [static]
Invertebrate:	EC50 48 hr Daphnia magna 0.0059 mg/L
Ammonia	7664-41-7
Fish:	LC50 96 h Cyprinus carpio 0.44 mg/L; LC50 96 h Lepomis macrochirus 0.26 - 4.6 mg/L; LC50 96 h Lepomis macrochirus 1.17 mg/L [flow-through]; LC50 96 h Pimephales promelas 0.73 - 2.35 mg/L; LC50 96 h Pimephales promelas 5.9 mg/L [static]; LC50 96 h Poecilia reticulata >1.5 mg/L; LC50 96 h Poecilia reticulata 1.19 mg/L [static]
Invertebrate:	LC50 48 h Daphnia magna 25.4 mg/L IUCLID
Polymer, vinyl acetate and vinyl acrylic	Mixture
Fish:	LC50 96 hr Oncorhynchis mykiss >1000 mg/L
Invertebrate:	EC50 48 hr Daphnia magna >100 mg/L
Methanol	67-56-1
Fish:	LC50 96 h Pimephales promelas 28200 mg/L [flow-through]; LC50 96 h Pimephales promelas >100 mg/L [static]; LC50 96 h Oncorhynchus mykiss 19500 - 20700 mg/L [flow-through];

Safety Data Sheet

Material Name: Roto-Tack

Product #:308573 -50 gal
308574- 1 gallon

	LC50 96 h Oncorhynchus mykiss 18 - 20 mL/L [static]; LC50 96 h Lepomis macrochirus 13500 - 17600 mg/L [flow-through]
1,2-Benzisothiazolin-3-one mixture	Mixture
Fish:	LC50 96 hr Rainbow trout 21 mg/L [flow-through]
Invertebrate:	EC50 48 hr Daphnia magna 26 mg/L

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Other Toxicity

No additional information available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

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

Section 14 - TRANSPORT INFORMATION

US DOT Information:

UN/NA #: Not regulated

IATA Information:

UN#: Not regulated

TDG Information:

UN#: Not regulated

IMDG Information:

UN#: Not regulated

Safety Data Sheet

Material Name: Roto-Tack

**Product #:308573 -50 gal
308574- 1 gallon**

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

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), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Ammonia	7664-41-7
SARA 302:	500 lb TPQ
SARA 313:	1 % de minimis concentration (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing)
CERCLA:	100 lb final RQ; 45.4 kg final RQ
OSHA (safety):	10000 lb TQ anhydrous); 15000 lb TQ solution, >44% Ammonia by weight)
SARA 304:	100 lb EPCRA RQ
Methanol	67-56-1
SARA 313:	1 % de minimis concentration
CERCLA:	5000 lb final RQ; 2270 kg final RQ
Carbamic acid mixture	Trade Secret
CERCLA:	10 lb final RQ; 4.54 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: Yes **Chronic Health:** Yes **Fire:** No **Pressure:** No **Reactivity:** No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Chlorinated paraffins	Trade Secret	No	Yes	No	No	No
Ammonia	7664-41-7	Yes	Yes	Yes	Yes	Yes
Clay compound	Trade Secret	No	Yes	Yes	Yes	Yes
Limestone	1317-65-3	No	Yes	Yes	Yes	Yes
Methanol	67-56-1	Yes	Yes	Yes	Yes	Yes
Carbamic acid mixture	Trade Secret	No	No	No	Yes	No

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

Safety Data Sheet

Material Name: Roto-Tack

**Product #:308573 -50 gal
308574- 1 gallon**

WARNING! This product contains a chemical known to the state of California to cause cancer
WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects

Clay compound	Trade Secret
Carc:	carcinogen , 10/1/1988 (airborne particles of respirable size)
Methanol	67-56-1
Repro/Dev. Tox	developmental toxicity , 3/16/2012

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

Ammonia	7664-41-7
	1 %
Clay compound	Trade Secret
	1 %
Methanol	67-56-1
	1 %

Component Analysis - Inventory

Polymer, ethyl acrylate and methacrylic acid (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Chlorinated paraffins (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Ammonia (7664-41-7)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Clay compound (Trade Secret)

Safety Data Sheet

Material Name: Roto-Tack

**Product #:308573 -50 gal
308574- 1 gallon**

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Limestone (1317-65-3)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	NSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Methanol (67-56-1)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Carbamic acid mixture (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes

Fuller's earth (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

1,2-Benzisothiazolin-3-one mixture (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

HMIS Rating

Health: 2* Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings

Safety Data Sheet

Material Name: Roto-Tack

**Product #:308573 -50 gal
308574- 1 gallon**

Health: 2 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

New SDS: May 22, 2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:

The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used, CCWI Company must rely upon the hazard evaluation of such components submitted by that product's manufacturer or importer. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use.



Safety Data Sheet

Material Name: Travel-Tack

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

Travel-Tack

Synonyms

Solvent-based Adhesive

Chemical Family

Spray Adhesive

Product Use

Solvent based Adhesive

Restrictions on Use

For industrial use only.

Manufacturer Information

Carlisle HVAC Products
900 Hensley Lane
Wylie, TX 75098
www.carlislehvac.com

Medical Emergency:

CHEMTREC (USA): (800) 424-9300

MSDS Assistance – 972-442-6545

Technical Assistance – 888-229-2199

Customer Service – 888-229-0199mer Service – 888-229-0199

Section 2 - HAZARDS IDENTIFICATION

OSHA Regulatory Status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazard Classification: Flammable aerosol

Skin Irritation, Category 3

GHS Label Elements

Symbol(s)





Safety Data Sheet

Material Name: Travel-Tack

Signal Word

Danger

Flammable aerosol. Irritant by inhalation, ingestion, skin contact, and eye contact.

Hazard Statement(s)

Flammable aerosol

Contains gas under pressure; may explode if heated

Causes skin irritation

Causes eye irritation

May cause respiratory irritation

May cause drowsiness or dizziness

Precautionary Statement(s)

Prevention

Keep away from heat/sparks/open flames/hot surfaces – no smoking.

Pressurized container: Do not pierce or burn, even after use.

Do not spray on an open flame or other ignition source.

Protect from sunlight. Store in a well-ventilated place. Keep container tightly closed

Use personal protective equipment as required.

Avoid breathing dust/fume/gas/mist/vapours/spray

IF IN EYES: Rinse cautiously with water for at least 15 minutes. Remove contact lens, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice or attention.

IF ON SKIN: Wash with plenty of water. If skin irritation occurs, get medical advice or attention.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Potential Health Effects

Principal Routes of Exposure: Inhalation, skin absorption, eye contact

Acute Effects

Eyes

Contact with eyes may cause irritation. Direct contact with liquid or vapors may cause stinging, tearing, redness, swelling, and eye damage.

Skin

May cause skin irritation and /or dermatitis. Prolonged or repeated contact or exposure to vapors may cause redness, burning, and drying and cracking of the skin.

Inhalation

Breathing high concentrations of vapors may cause irritation of the nose and throat or signs of nervous system depression (i.e. – headache, nausea, drowsiness, dizziness, vomiting, loss of coordination and fatigue).

Ingestion

Ingestion may cause irritation of the digestive tract, nausea, vomiting, and signs of nervous system depression.

Chronic Effects

Avoid repeated exposure. May cause blood damage. Repeated contact may cause allergic reactions in very susceptible persons.



Safety Data Sheet

Material Name: Travel-Tack

Aggravated Medical Conditions

Pre-existing eye, skin, or respiratory disorders may be aggravated by exposure to this product.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
75-09-2	Dichloromethane	35-60
68476-86-8	LIQUEFIED PETROLEUM GAS	35-60

Section 4 - FIRST AID MEASURES

General Advice

Show this safety data sheet to the doctor in attendance

Inhalation

Move to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen and get immediate medical attention.

Skin

Wash exposed skin with soap and water. Remove contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.

Eyes

Flush with plenty of cool water for at least 15 minutes, holding eyelids apart for thorough irrigation. If irritation persists, get immediate medical attention.

Ingestion

Do NOT induce vomiting. If swallowed, get medical attention. If vomiting occurs, keep head lower than hips to prevent aspiration.

Note to Physicians

Treat symptomatically

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemicals, foam. Water may be helpful in keeping adjacent containers cool; avoid spreading the liquid with water used for cooling. Water-based sprinkler systems may help contain larger fires.



Safety Data Sheet

Material Name: Travel-Tack

Special Hazards Arising from the Chemical

Closed containers may rupture if exposed to fire or extreme heat. May produce toxic fumes if burning.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Remove all sources of ignition.

Methods and Materials for Containment and Cleaning Up

Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Wear appropriate personal protective equipment. Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from open flames, hot surfaces and sources of ignition.

Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from extremes of heat or cold. Keep in properly labeled containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Dichloromethane	75-09-2
ACGIH TLV:	50
OSHA PEL:	25



Safety Data Sheet

Material Name: Travel-Tack

LIQUEFIED PETROLEUM GAS	68476-86-8
ACGIH TLV:	1000
OSHA PEL:	Not established

Engineering Controls

Ensure adequate ventilation, especially in confined areas.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear safety glasses or safety goggles, or full faceshield.

Skin Protection

Protective gloves and impervious clothing.

Respiratory Protection

In operations where exposure limits are exceeded, use a NIOSH approved respirator that has been selected by a technically qualified person for the specific work conditions.

Hygiene Practices

Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling. When using, do not eat, drink or smoke.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Not available	pH	Not available
Odor	Not available	Boiling Point	-24°F [-31°C]
Odor Threshold	Not available	Evaporation Rate	Faster than nBuAc
Autoignition	Not data	Flammability (solid)	Not data
Bulk Density (lb/gal)	6.72	Flash Point	-156.00°F [-104°C]
Vapor Density (air=1)	Heavier than air	Decomposition	Not data
Water Solubility	Insoluble	Vapor Pressure	Not available
Viscosity	Not available	Specific Gravity (water=1)	0.807
VOC	~322	Non-Volatile (wt%)	15.69
VOC (g/L) less exempt & water	~424	Freezing/Melting Point	Not Determined
Upper Flammability Limit	4.5	Lower Flammability Limit	0.85



Safety Data Sheet

Material Name: Travel-Tack

Section 10 - STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions of use. Hazardous polymerization does not occur.

Possibility of Hazardous Reactions

None under normal conditions of use.

Conditions to Avoid

Keep away from open flames, hot surfaces, static electricity and sources of ignition. Avoid extremes of heat or cold.

Incompatible Materials

Strong acids and bases, strong oxidizing agents, alkali metals, halogens

Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide, carbon dioxide, smoke, and other unidentified organic compounds may be formed during combustion.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation, skin absorption, eye contact

Acute Toxicity

No data

Irritation Data

No data

Sensitization

No data

Corrosivity

No data

Mutagenicity

No data

Reproductive Toxicity

No data

Specific Target Organ Toxicity - Single Exposure

No data

Specific Target Organ Toxicity - Repeated Exposure

No data



Safety Data Sheet

Material Name: Travel-Tack

Aspiration hazard

No data

Chronic Toxicity / Carcinogenicity

The information below indicates whether each agency has listed any ingredient as a carcinogen:

Component	IARC	NTP	OSHA
Dichloromethane	Listed	Not listed	Listed

Section 12 - ECOLOGICAL INFORMATION

Aquatic Toxicity

Acute and prolonged Toxicity to Fish: No data

Acute Toxicity to Aquatic Invertebrates: No data

Environmental Fate and Pathways: No data

Persistence and Degradability

No data.

Bioaccumulative Potential

No data

Mobility in soil

No data

Other adverse effects

No data

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of in accordance with all applicable local, state, and federal regulations. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

Section 14 - TRANSPORT INFORMATION

US DOT Information:

Proper shipping name: CHEMICAL UNDER PRESSURE, FLAMMALBE, N.O.S. (PROPANE, ISOBUTANE)

Hazard Class: 2.1

UN#: UN3501

ICAO/IATA: Contact the preparer for further information.



Safety Data Sheet

Material Name: Travel-Tack

IMDG/MO Information: Contact the preparer for further information.

Section 15 - REGULATORY INFORMATION

US TSCA: Yes – All components are listed or exempt

U.S. Federal Regulations

SARA Section 313 : Section 313 OF Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). If listed below, this product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Designation	Cas No.	% Weight
Dichloromethane	75-09-2	35-60

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPS) (see 40 CFR 61)

Chemical Designation	Cas No.	% Weight
Dichloromethane	75-09-2	35-60

State Regulations

California Proposition 65

This product contains the following substance(s) known to the state of California to cause cancer or reproductive harm:

Chemical Name	CAS Number
Dichloromethane	75-09-2
Ethyl benzene	100-41-4

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 2 Fire: 3 Reactivity: 0 B

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

New SDS: May 21, 2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD -



Safety Data Sheet

Material Name: Travel-Tack

Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information Disclaimer:

The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used, CCWI Company must rely upon the hazard evaluation of such components submitted by that product's manufacturer or importer. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use.

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

Duct-Seal 321

Synonyms

Sealant

Chemical Family

Water based mastic

Product Use

Duct sealant

Restrictions on Use

For industrial use only

Manufacturer Information

Carlisle HVAC Products
900 Hensley Lane
Wylie, TX 75098
www.carlislehvac.com

Medical Emergency:

CHEMTREC (USA): (800) 424-9300

MSDS Assistance – 972-442-6545

Technical Assistance – 888-229-2199

Customer Service – 888-229-0199

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Reproductive Toxicity - Category 1B

Specific Target Organ Toxicity - Single Exposure - Category 1 (body, central nervous system, systemic toxicity, eyes)

Specific Target Organ Toxicity - Repeated Exposure - Category 1 (eyes,central nervous system)

GHS Label Elements

Symbol(s)



Signal Word

Danger

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Hazard Statement(s)

May damage fertility or the unborn child
Causes damage to organs
Causes damage to organs through prolonged or repeated exposure

Precautionary Statement(s)

Prevention

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
Do not breathe dust/fume/gas/mist/vapours/spray
Wash thoroughly after handling
Do not eat, drink or smoke when using this product

Response

If exposed: Call a POISON CENTER or doctor/physician
Get medical advice/attention if you feel unwell
Specific treatment (see label)

Storage

Store locked up

Disposal

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

Statement of Unknown Toxicity

86.9402% of the mixture consists of ingredient(s) of unknown acute toxicity.

Other Hazards

No additional information available.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
Trade Secret	De-foaming agent	0.1-1
Trade Secret	Nonylphenol polyethylene glycol ether	0.1-1
Mixture	Polymer, ethyl acrylate and methacrylic acid	0.5-1.5
Mixture	Polycarboxylate salt	0.1-1
107-21-1	Ethylene glycol	0.1-1
Mixture	Fuller's earth	0.5-1.5

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

7664-41-7	Ammonia	0.1-1
1317-65-3	Limestone	15-40
Trade Secret	Clay compound	1-5
67-56-1	Methanol	1-5
Mixture	4,4-Dimethyloxazolidine	0.1-1
Mixture	Carbamic acid mixture	0.1-1

Section 4 - FIRST AID MEASURES

Description of Necessary Measures

If exposed: Call a POISON CENTER or doctor/physician.

Inhalation

Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Skin

Wash exposed skin with soap and water. Remove contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.

Eyes

Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion

Do NOT induce vomiting. If swallowed, get medical attention.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Most Important Symptoms/Effects

Acute

Causes damage to central nervous system, body, eyes, systemic toxicity.

Delayed

May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure: eyes, central nervous system.

Note to Physicians

Contains: ethylene glycol, ammonia, methanol.

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

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

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Slight fire hazard. Sealed containers may rupture or explode if exposed to heat.

Hazardous Combustion Products

oxides of carbon, oxides of nitrogen, hydrocarbons

Advice for firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Fire Fighting Measures

Remove product from area of fire. Stay upwind and keep out of low areas.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Absorb with earth, sand or other non-combustible material and transfer to container. Dike for later disposal. Dispose in accordance with all applicable regulations.

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

This product contains crystalline silica, which is a known carcinogen: Do not grind or sand. 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. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. KEEP OUT OF REACH OF CHILDREN.

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Conditions for Safe Storage, Including any Incompatibilities

Store locked up

Store in a well-ventilated place. Store above 0 C. Store below 45 C. When not in use, keep containers tightly closed. Do not cut, puncture, or weld on or near this container. Keep away from incompatible materials.

Incompatible Materials

Strong acids, strong oxidizing agents

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Ethylene glycol	107-21-1	
ACGIH:	100 mg/m3 Ceiling aerosol only	
Europe:	20 ppm TWA; 52 mg/m3 TWA	40 ppm STEL; 104 mg/m3 STEL
	Possibility of significant uptake through the skin	
Mexico:	100 mg/m3 Ceiling aerosol	
Ammonia	7664-41-7	
ACGIH:	25 ppm TWA	35 ppm STEL
NIOSH:	25 ppm TWA; 18 mg/m3 TWA	35 ppm STEL; 27 mg/m3 STEL
	300 ppm IDLH	
Europe:	20 ppm TWA; 14 mg/m3 TWA	50 ppm STEL; 36 mg/m3 STEL
OSHA (US):	50 ppm TWA; 35 mg/m3 TWA	
Mexico:	25 ppm TWA LMPE-PPT; 18 mg/m3 TWA LMPE-PPT	
	35 ppm STEL [LMPE-CT]; 27 mg/m3 STEL [LMPE-CT]	
Limestone	1317-65-3	
NIOSH:	10 mg/m3 TWA total dust; 5 mg/m3 TWA respirable dust	
OSHA (US):	15 mg/m3 TWA total dust; 5 mg/m3 TWA respirable fraction	
Mexico:	10 mg/m3 TWA LMPE-PPT	20 mg/m3 STEL [LMPE-CT]

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Clay compound	Trade Secret	
ACGIH:	0.025 mg/m3 TWA respirable fraction	
NIOSH:	0.05 mg/m3 TWA respirable dust	50 mg/m3 IDLH respirable dust
OSHA (US):	((30)/(%SiO ₂ + 2) mg/m3 TWA) total dust; ((250)/(%SiO ₂ + 5) mppcf TWA) respirable fraction; ((10)/(%SiO ₂ + 2) mg/m3 TWA) respirable fraction	
Mexico:	0.1 mg/m3 TWA LMPE-PPT respirable fraction	
Methanol	67-56-1	
ACGIH:	200 ppm TWA	250 ppm STEL
	Skin - potential significant contribution to overall exposure by the cutaneous route	
NIOSH:	200 ppm TWA; 260 mg/m3 TWA	250 ppm STEL; 325 mg/m3 STEL
	Potential for dermal absorption	
	6000 ppm IDLH	
Europe:	200 ppm TWA; 260 mg/m3 TWA	
	Possibility of significant uptake through the skin	
OSHA (US):	200 ppm TWA; 260 mg/m3 TWA	
Mexico:	200 ppm TWA LMPE-PPT; 260 mg/m3 TWA LMPE-PPT	
	250 ppm STEL [LMPE-CT]; 310 mg/m3 STEL [LMPE-CT]	
	Skin - potential for cutaneous absorption	

Biological limit value

There are no biological limit values for any of this product's components.

Engineering Controls

Provide adequate ventilation. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear safety glasses or safety goggles, with a faceshield, as appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

Wear appropriate work clothing.

Respiratory Protection

A NIOSH approved respirator with a dust, mist, and fume filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits or when symptoms have been observed that are indicative of overexposure.

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Glove Recommendations

Wear appropriate gloves. Recommended material type: Hycron(R), neoprene, nitrile.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	gray paste	Physical State	solid
Odor	Slight, ammonia	Color	gray
Odor Threshold	Not available	pH	8.4 - 9.5
Melting Point	Not available	Boiling Point	212 °F
Freezing point	Not available	Evaporation Rate	28 - 32 % volatile
Boiling Point Range	Not available	Flammability (solid, gas)	Not available
Autoignition	Not available	Flash Point	Not available
Lower Explosive Limit	Not available	Decomposition	Not available
Upper Explosive Limit	Not available	Vapor Pressure	17 mmHg (@ 20 °C)
Vapor Density (air=1)	<1	Specific Gravity (water=1)	Not available
Water Solubility	soluble	Partition coefficient: n-octanol/water	Not available
Viscosity	>300 Kcps	Solubility (Other)	Not available
Density	1.34 - 1.41 (relative)	VOC	92 g/L

Other Information

No additional information available.

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal conditions of use.

Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials

strong acids, strong oxidizing agents.

Hazardous decomposition products

Oxides of carbon, oxides of nitrogen, hydrocarbons

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

May cause adverse effects on the central nervous system.

Skin Contact

May cause mild skin irritation.

Eye Contact

May cause mild eye irritation.

Ingestion

Methanol can produce blindness with onset of symptoms being delayed for 18-24 hours.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Ethylene-vinyl acetate copolymer (Trade Secret)

Oral LD50 Rat >2000 mg/kg

Epoxidized soybean oil (Trade Secret)

Oral LD50 Rat >5 g/kg

Dermal LD50 Rabbit >20 mL/kg

De-foaming agent (Trade Secret)

Oral LD50 >2000 mg/kg

Nonylphenol polyethylene glycol ether (Trade Secret)

Oral LD50 Rat 2780 mg/kg

Chlorinated paraffins (Trade Secret)

Oral LD50 Rat >4 g/kg

Polymer, ethyl acrylate and methacrylic acid (Mixture)

Oral LD50 Rat >5000 mg/kg

Dermal LD50 Rabbit >5000 mg/kg

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Polycarboxylate salt (Mixture)

Oral LD50 Rat >5000 mg/kg

Dermal LD50 Rabbit >2000 mg/kg

Ethylene glycol (107-21-1)

Oral LD50 Rat 4700 mg/kg

Dermal LD50 Rat 10600 mg/kg

Inhalation LC50 Rat >200 mg/m³ vapor 4 hr

Ammonia (7664-41-7)

Oral LD50 Rat 350 mg/kg

Inhalation LC50 Rat 2000 ppm 4 h

Limestone (1317-65-3)

Oral LD50 Rat 6450 mg/kg

Clay compound (Trade Secret)

Oral LD50 Rat 500 mg/kg

Methanol (67-56-1)

Oral LD50 Rat 6200 mg/kg

Inhalation LC50 Rat 22500 ppm 8 h

4,4-Dimethyloxazolidine (Mixture)

Oral LD50 Rat 1037 mg/kg

Dermal LD50 Rat >2000 mg/kg

Inhalation LC50 Rat 1.1 mg/L 4 hr

Carbamic acid mixture (Mixture)

Oral LD50 Rat >2000 mg/kg

Dermal LD50 Rabbit >2000 mg/kg

Inhalation LC50 Rat >2.04 mg/L 4 hr

Immediate Effects

Causes damage to central nervous system, body, eyes, systemic toxicity.

Delayed Effects

May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure: eyes, central nervous system.

Irritation/Corrosivity Data

May cause mild skin irritation. May cause mild eye irritation.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Safety Data Sheet

Material Name: Duct-Seal 321**Product #:** 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal**Component Carcinogenicity**

Chlorinated paraffins	Trade Secret
IARC:	Monograph 48 [1990] (Group 2B (possibly carcinogenic to humans))
DFG:	Category 3B (could be carcinogenic for man)
OSHA:	Present
Ethylene glycol	107-21-1
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
Clay compound	Trade Secret
ACGIH:	A2 - Suspected Human Carcinogen
IARC:	Monograph 100C [2012]; Monograph 68 [1997] (Group 1 (carcinogenic to humans))
NTP:	Known Human Carcinogen (respirable size)
DFG:	Category 1 (causes cancer in man, alveola fraction)
OSHA:	Present (respirable size)

Germ Cell Mutagenicity

No data available.

Reproductive Toxicity

May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Central nervous system, body, systemic toxicity, eyes

Specific Target Organ Toxicity - Repeated Exposure

Central nervous system, eyes

Aspiration hazard

No data available.

Medical Conditions Aggravated by Exposure

No data available.

Additional Data

This product contains crystalline silica, which is a known carcinogen. However, this component is bound by the polymer portion of the sealant. The only way this component would be released is through incineration. Therefore, this product is not considered a carcinogen.

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Avoid release to the environment.

Component Analysis - Aquatic Toxicity

Ethylene-vinyl acetate copolymer	Trade Secret
Fish:	LC50 96 hr Cyprinus carpio >1000 mg/L
Epoxidized soybean oil	Trade Secret
Fish:	LC50 48 hr Fish 900 mg/L
Algae:	EC50 72 h Desmodesmus subspicatus 8 mg/L IUCLID
Invertebrate:	Ec50 24 hr Daphnia >100 mg/L
Chlorinated paraffins	Trade Secret
Fish:	LC50 96 h Lepomis macrochirus >300 mg/L [static]; LC50 96 h Oncorhynchus mykiss >0.0109 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 94.5 - 271 mg/L [static]; LC50 96 h Lepomis macrochirus >0.1 mg/L [flow-through]; LC50 96 h Pimephales promelas >100 mg/L [static]
Invertebrate:	EC50 48 hr Daphnia magna 0.0059 mg/L
Polymer, ethyl acrylate and methacrylic acid	Mixture
Fish:	LC50 96 hr Pimephales promelas >1000 mg/L
Invertebrate:	EC50 48 hr Daphnia magna >1000 mg/L
Ethylene glycol	107-21-1
Fish:	LC50 96 h Oncorhynchus mykiss 41000 mg/L; LC50 96 h Oncorhynchus mykiss 14 - 18 mL/L [static]; LC50 96 h Lepomis macrochirus 27540 mg/L [static]; LC50 96 h Oncorhynchus mykiss 40761 mg/L [static]; LC50 96 h Pimephales promelas 40000 - 60000 mg/L [static]; LC50 96 h Poecilia reticulata 16000 mg/L [static]

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Algae:	EC50 96 h Pseudokirchneriella subcapitata 6500 - 13000 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna 46300 mg/L IUCLID
Ammonia	7664-41-7
Fish:	LC50 96 h Cyprinus carpio 0.44 mg/L; LC50 96 h Lepomis macrochirus 0.26 - 4.6 mg/L; LC50 96 h Lepomis macrochirus 1.17 mg/L [flow-through]; LC50 96 h Pimephales promelas 0.73 - 2.35 mg/L; LC50 96 h Pimephales promelas 5.9 mg/L [static]; LC50 96 h Poecilia reticulata >1.5 mg/L; LC50 96 h Poecilia reticulata 1.19 mg/L [static]
Invertebrate:	LC50 48 h Daphnia magna 25.4 mg/L IUCLID
Methanol	67-56-1
Fish:	LC50 96 h Pimephales promelas 28200 mg/L [flow-through]; LC50 96 h Pimephales promelas >100 mg/L [static]; LC50 96 h Oncorhynchus mykiss 19500 - 20700 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 18 - 20 mL/L [static]; LC50 96 h Lepomis macrochirus 13500 - 17600 mg/L [flow-through]
4,4-Dimethyloxazolidine	Mixture
Fish:	LC50 96 hr Rainbow trout 95 mg/L [flow-through]

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Other Toxicity

No additional information available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

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

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Section 14 - TRANSPORT INFORMATION

US DOT Information:

UN/NA #: Not regulated

IATA Information:

UN#: Not regulated

IMDG Information:

UN#: Not regulated

TDG Information:

UN#: Not regulated

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

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), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Ethylene glycol	107-21-1
SARA 313:	1 % de minimis concentration
CERCLA:	5000 lb final RQ; 2270 kg final RQ
Ammonia	7664-41-7
SARA 302:	500 lb TPQ
SARA 313:	1 % de minimis concentration (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing)
CERCLA:	100 lb final RQ; 45.4 kg final RQ
OSHA (safety):	10000 lb TQ anhydrous); 15000 lb TQ solution, >44% Ammonia by weight)
SARA 304:	100 lb EPCRA RQ
Methanol	67-56-1
SARA 313:	1 % de minimis concentration
CERCLA:	5000 lb final RQ; 2270 kg final RQ

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Carbamic acid mixture	Mixture
CERCLA:	10 lb final RQ; 4.54 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: Yes **Chronic Health:** Yes **Fire:** No **Pressure:** No **Reactivity:** No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Chlorinated paraffins	Trade Secret	No	Yes	No	No	No
Ethylene glycol	107-21-1	Yes	Yes	Yes	Yes	Yes
Ammonia	7664-41-7	Yes	Yes	Yes	Yes	Yes
Limestone	1317-65-3	No	Yes	Yes	Yes	Yes
Clay compound	Trade Secret	No	Yes	Yes	Yes	Yes
Methanol	67-56-1	Yes	Yes	Yes	Yes	Yes
Carbamic acid mixture	Mixture	No	No	No	Yes	No

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

WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects

Clay compound	Trade Secret
Carc:	carcinogen , initial date 10/1/88 (airborne particles of respirable size)
Methanol	67-56-1
Repro/Dev. Tox	Developmental toxicity , initial date 3/16/12

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

Ethylene glycol	107-21-1
	1 %
Ammonia	7664-41-7
	1 %

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Clay compound	Trade Secret
	1 %
Methanol	67-56-1
	1 %

Component Analysis - Inventory

Ethylene-vinyl acetate copolymer (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	ELN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Epoxidized soybean oil (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

Nonylphenol polyethylene glycol ether (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No

Chlorinated paraffins (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Polymer, ethyl acrylate and methacrylic acid (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Ethylene glycol (107-21-1)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Fuller's earth (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

Ammonia (7664-41-7)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Limestone (1317-65-3)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	NSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Clay compound (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Kaolin, calcined (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Methanol (67-56-1)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

4,4-Dimethyloxazolidine (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes

Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Carbamic acid mixture (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

HMIS Rating

Health: 1* Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings

Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

New SDS: April 1, 2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.



Safety Data Sheet

Material Name: Duct-Seal 321

Product #: 304159- 11 oz
304158- 5 gal
304157- 2 gal
304156- 1 gal

Other Information

Disclaimer:

The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used, CCWI Company must rely upon the hazard evaluation of such components submitted by that product's manufacturer or importer. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use.

Safety Data Sheet

Material Name: Sure-Grip 404**Product #: 302014**

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

Sure-Grip 404

Synonyms

Solvent-based mastic

Chemical Family

Mastic

Product Use

Duct sealant

Restrictions on Use

For industrial use only

Manufacturer Information

Carlisle HVAC Products

900 Hensley Lane

Wylie, TX 75098

www.carlislehvac.com

Medical Emergency:**CHEMTREC (USA): (800) 424-9300**

MSDS Assistance – 972-442-6545

Technical Assistance – 888-229-2199

Customer Service – 888-229-0199

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Flammable Liquids - Category 2

Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Eye Irritation - Category 2A

Reproductive Toxicity - Category 1A

Specific Target Organ Toxicity - Repeated Exposure - Category 2

GHS Label Elements**Symbol(s)**

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Signal Word

Danger

Hazard Statement(s)

Highly flammable liquid and vapor

Causes skin irritation

Causes serious eye irritation

May damage fertility or the unborn child

May cause damage to organs through prolonged or repeated exposure

Precautionary Statement(s)

Prevention

Obtain special instructions before use

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

Keep container tightly closed

Keep away from heat/sparks/open flame/hot surfaces - No smoking

Ground/Bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting equipment

Take precautionary measures against static discharge

Use only non-sparking tools

Wear protective gloves/protective clothing/eye protection/face protection

Do not breathe dust/fume/gas/mist/vapours/spray

Wash thoroughly after handling

Response

In case of fire: Use appropriate media to extinguish

IF exposed or concerned: 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 eye irritation persists: Get medical advice/attention

IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

Specific treatment (see label)

Storage

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

Keep cool

Store locked up

Disposal

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

Other Hazards

No additional information available.

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
Trade Secret	Styrene butadiene polymer	5-10
Trade Secret	Polyphenol antioxidant	0.1-1
1314-13-2	Zinc oxide	1-5
21645-51-2	Aluminum hydroxide	5-10
108-88-3	Toluene	7-13
64742-89-8	Heptane	10-30

Section 4 - FIRST AID MEASURES

Description of Necessary Measures

IF exposed or concerned: Get medical advice/attention.

Inhalation

Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

Skin

Remove/Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water/shower. If skin irritation occurs, get medical advice/attention.

Eyes

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

If swallowed, get medical attention. Do NOT induce vomiting.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Most Important Symptoms/Effects

Acute

Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause gastrointestinal irritation.

Delayed

May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure: kidney, liver.

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Note to Physicians

Contains organic solvents: heptane, toluene.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Dry chemical, foam or carbon dioxide. Water may be ineffective. Use water spray to keep containers cool.

Unsuitable Extinguishing Media

Do not use high-pressure water streams.

Special Hazards Arising from the Chemical

Can burn and explode easily when exposed to open flames or high heat.

Hazardous Combustion Products

oxides of carbon, oxides of nitrogen

Special Protective Equipment and Precautions for Firefighters

Highly flammable liquid and vapor. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flashback.

Fire Fighting Measures

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Remove all sources of ignition. Avoid breathing vapors. Ventilate affected area. Absorb with earth, sand or other non-combustible material and transfer to container. Use non-sparking tools. Dike for later disposal.

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flame/hot surfaces - No smoking. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Do

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Wash contaminated clothing before reuse. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage, Including any Incompatibilities

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

Keep cool

Store locked up

Keep away from heat and ignition sources. Keep away from incompatible materials. Do not cut, puncture, or weld on or near this container.

Incompatible Materials

Strong oxidizing agents, acids, bases

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Limestone	1317-65-3	
NIOSH:	10 mg/m ³ TWA total dust; 5 mg/m ³ TWA respirable dust	
OSHA (US):	15 mg/m ³ TWA total dust; 5 mg/m ³ TWA respirable fraction	
Mexico:	10 mg/m ³ TWA LMPE-PPT	20 mg/m ³ STEL [LMPE-CT]
Zinc oxide	1314-13-2	
ACGIH:	2 mg/m ³ TWA respirable fraction	10 mg/m ³ STEL respirable fraction
NIOSH:	5 mg/m ³ TWA dust and fume	10 mg/m ³ STEL fume
	15 mg/m ³ Ceiling dust	500 mg/m ³ IDLH
OSHA (US):	5 mg/m ³ TWA fume; 15 mg/m ³ TWA total dust; 5 mg/m ³ TWA respirable fraction	
Mexico:	5 mg/m ³ TWA LMPE-PPT fume; 10 mg/m ³ TWA LMPE-PPT dust	
	10 mg/m ³ STEL [LMPE-CT] fume	
Clay	1332-58-7	
ACGIH:	2 mg/m ³ TWA particulate matter containing no asbestos and <1% crystalline silica, respirable fraction	
NIOSH:	10 mg/m ³ TWA total dust; 5 mg/m ³ TWA respirable dust	
OSHA (US):	15 mg/m ³ TWA total dust; 5 mg/m ³ TWA respirable fraction	

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Mexico:	10 mg/m3 TWA LMPE-PPT	20 mg/m3 STEL [LMPE-CT]
Silica gel	112926-00-8	
ACGIH:	10 mg/m3 TLV-TWA	
NIOSH:	6 mg/m3 TWA	3000 mg/m3 IDLH
OSHA (US):	20 mppcf TWA; ((80)/(% SiO ₂) mg/m3 TWA)	
Mexico:	10 mg/m3 TWA LMPE-PPT	
Toluene	108-88-3	
ACGIH:	20 ppm TWA	150 ppm STEL
NIOSH:	100 ppm TWA; 375 mg/m3 TWA	150 ppm STEL; 560 mg/m3 STEL
	500 ppm IDLH	
Europe:	50 ppm TWA; 192 mg/m3 TWA	100 ppm STEL; 384 mg/m3 STEL
	Possibility of significant uptake through the skin	
OSHA (US):	200 ppm TWA	150 ppm STEL
	300 ppm Ceiling	
Mexico:	50 ppm TWA LMPE-PPT; 188 mg/m3 TWA LMPE-PPT	
	Skin - potential for cutaneous absorption	
Heptane	64742-89-8	
NIOSH:	85 ppm TWA	440 ppm STEL
	500 ppm IDLH	
OSHA (US):	400 ppm TWA	500 ppm STEL

Biological limit value

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Safety glasses or goggles are recommended when there is a potential for eye contact. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

Wear appropriate work clothing. Wear protective shoes. Recommended material: protective skin cream.

Respiratory Protection

In case of inadequate ventilation wear respiratory protection. Appropriate respirator selection should be made by a qualified professional as part of a comprehensive respiratory protection program as described in 29 CFR 1910.134.

Glove Recommendations

Wear protective gloves. Recommended material: nitrile.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	gray mastic	Physical State	solid
Odor	mild,hydrocarbon odor	Color	gray
Odor Threshold	Not available	pH	Not available
Melting Point	-95 °C (-139 °F)	Boiling Point	90 - 111 °C (194-231 °F)
Freezing point	Not available	Evaporation Rate	3
Boiling Point Range	Not available	Flammability (solid, gas)	Not available
Autoignition	230 °C (475 °F)	Flash Point	-7.2 °C (19 °F)
Lower Explosive Limit	1 %	Decomposition	Not available
Upper Explosive Limit	7 %	Vapor Pressure	45 mmHg
Vapor Density (air=1)	3.4	Specific Gravity (water=1)	Not available
Water Solubility	Negligible	Partition coefficient: n-octanol/water	Not available
Viscosity	450000 cps	Solubility (Other)	Hydrocarbons
Density	1 - 1.2 (relative)	VOC	395 g/L
Volatility by Weight	30 - 40 %		

Other Information

No additional information available.

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal conditions of use.

Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials

Strong oxidizing agents, acids, bases

Hazardous decomposition products

Oxides of carbon, oxides of nitrogen

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

May cause respiratory irritation.

Skin Contact

Causes skin irritation.

Eye Contact

Causes serious eye irritation.

Ingestion

May cause gastrointestinal irritation.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Polyphenol antioxidant (Trade Secret)

Oral LD50 Rat >200 mg/kg

Dermal LD50 Rabbit >5010 mg/kg

Inhalation LC50 Rat >165 mg/L 1 h

Zinc oxide (1314-13-2)

Oral LD50 Rat >5000 mg/kg

Aluminum hydroxide (21645-51-2)

Oral LD50 Rat >5000 mg/kg

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Toluene (108-88-3)

Oral LD50 Rat 2600 mg/kg

Dermal LD50 Rabbit 12000 mg/kg

Inhalation LC50 Rat 12.5 mg/L 4 h

Heptane (64742-89-8)

Oral LD50 Mouse 5000 mg/kg

Dermal LD50 Rabbit 3000 mg/kg

Immediate Effects

Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause gastrointestinal irritation.

Delayed Effects

May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure: kidney, liver.

Irritation/Corrosivity Data

May cause skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Respiratory Sensitization

No data available.

Dermal Sensitization

It may cause sensitization in some individuals.

Component Carcinogenicity

Clay	1332-58-7
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
DFG:	Category 3B (could be carcinogenic for man)
Silica gel	112926-00-8
IARC:	Monograph 68 [1997] (Group 3 (not classifiable))
Toluene	108-88-3
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Germ Cell Mutagenicity

No data available.

Reproductive Toxicity

May damage fertility or the unborn child.

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Specific Target Organ Toxicity - Single Exposure

No data available.

Specific Target Organ Toxicity - Repeated Exposure

May cause damage to organs through prolonged or repeated exposure: kidney, liver.

Aspiration hazard

No data available.

Medical Conditions Aggravated by Exposure

No data available.

Additional Data

No additional information available.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Avoid release to the environment.

Component Analysis - Aquatic Toxicity

Polyphenol antioxidant	Trade Secret
Fish:	LC50 96 h Oncorhynchus mykiss >0.2 mg/L [semi-static]
Algae:	EC50 72 h Pseudokirchneriella subcapitata >0.2 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna >0.2 mg/L IUCLID
Toluene	108-88-3
Fish:	LC50 96 h Pimephales promelas 15.22 - 19.05 mg/L [flow-through] (1 day old); LC50 96 h Pimephales promelas 12.6 mg/L [static]; LC50 96 h Oncorhynchus mykiss 5.89 - 7.81 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 14.1 - 17.16 mg/L [static]; LC50 96 h Oncorhynchus mykiss 5.8 mg/L [semi-static]; LC50 96 h Lepomis macrochirus 11 - 15 mg/L [static]; LC50 96 h Oryzias latipes 54 mg/L [static]; LC50 96 h Poecilia reticulata 28.2 mg/L [semi-static]; LC50 96 h Poecilia reticulata 50.87 - 70.34 mg/L [static]
Algae:	EC50 96 h Pseudokirchneriella subcapitata >433 mg/L IUCLID; EC50 72 h Pseudokirchneriella subcapitata 12.5 mg/L [static] EPA
Invertebrate:	EC50 48 h Daphnia magna 5.46 - 9.83 mg/L [static] EPA; EC50 48 h Daphnia magna 11.5 mg/L IUCLID

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Heptane	64742-89-8
Algae:	EC50 72 h Pseudokirchneriella subcapitata 4700 mg/L IUCLID

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Other Toxicity

No additional information available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

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

Section 14 - TRANSPORT INFORMATION

US DOT Information:

Shipping Name: Adhesives

Hazard Class: 2

UN/NA #: UN1133

Packing Group: II

Required Label(s): Red caution label required (limited quantity if < 0.3 gal)

IATA Information:

Shipping Name: ADHESIVES

Hazard Class: 3

UN#: UN1133

Packing Group: II

Required Label(s): 3

TDG Information:

Shipping Name: ADHESIVES

Hazard Class: 3

UN#: UN1133

Packing Group: II

Required Label(s):

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

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), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Toluene	108-88-3
SARA 313:	1 % de minimis concentration
CERCLA:	1000 lb final RQ; 454 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** No **Reactivity:** No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Limestone	1317-65-3	No	Yes	Yes	Yes	Yes
Zinc oxide	1314-13-2	Yes	Yes	Yes	Yes	Yes
Clay	1332-58-7	No	Yes	Yes	Yes	Yes
Silica gel	112926-00-8	No	Yes	Yes	Yes	Yes
Toluene	108-88-3	Yes	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 reproductive/developmental effects

Toluene	108-88-3
Repro/Dev. Tox	developmental toxicity , initial date 1/1/91
	female reproductive toxicity , initial date 8/7/09

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

Zinc oxide	1314-13-2
	1 %

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Toluene	108-88-3
	1 %

Component Analysis - Inventory

Polyphenol antioxidant (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No

Limestone (1317-65-3)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	NSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Zinc oxide (1314-13-2)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Clay (1332-58-7)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Aluminum hydroxide (21645-51-2)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Silica gel (112926-00-8)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
No	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Toluene (108-88-3)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX

Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Heptane (64742-89-8)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 2 Fire: 3 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

New SDS: May 20, 2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.



Safety Data Sheet

Material Name: Sure-Grip 404

Product #: 302014

Other Information

Disclaimer:

The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use.

Harvey

1. Identification

Product identifier	Plumber's Putty
Other means of identification	
Product code	3705E
Synonyms	Part Numbers: 043005, 043010, 043050, 043105
Recommended use	Plumbing Mastic
Recommended restrictions	Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Importer/Supplier/Distributor information

Company Name	William H. Harvey Company
Address	4334 South 67th Street Omaha, NE 68117
Telephone	402-331-115
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	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Limestone	1317-65-3	60-90
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	5-30
Crystalline silica (Quartz)	14808-60-7	<1
Other components below reportable levels		9.85

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Coughing.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	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	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
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. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Following product recovery, flush area with water. 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	Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. 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	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	PEL	5 mg/m ³	Mist.
		2000 mg/m ³	
		500 ppm	
Limestone (CAS 1317-65-3)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	TWA	5 mg/m3	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	Ceiling	1800 mg/m3	
	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Limestone (CAS 1317-65-3)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls 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.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear suitable protective clothing.

Respiratory protection Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

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 to remove contaminants.

9. Physical and chemical properties**Appearance**

Physical state Solid.

Form Putty.

Color Off-white.

Odor Slight.

Odor threshold Not available.

pH Not applicable

Melting point/freezing point Not available.

Initial boiling point and boiling range	Not determined
Flash point	> 212.0 °F (> 100.0 °C)
Evaporation rate	Not available.
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	Not available.
Vapor density	Not available.
Relative density	1.87
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	> 500000 cP
Other information	
VOC (Weight %)	20 g/l

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	Contact with incompatible materials.
Incompatible materials	Acids. Fluorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

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.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Coughing.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
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 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) Risk of cancer cannot be excluded with prolonged exposure.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Crystalline silica (Quartz) (CAS 14808-60-7)	1 Carcinogenic to humans.
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	3 Not classifiable as to carcinogenicity to humans.
NTP Report on Carcinogens	
Crystalline silica (Quartz) (CAS 14808-60-7)	Known To Be Human Carcinogen.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further information	This product has no known adverse effect on human health.

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.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	
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.
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.
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.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Crystalline silica (Quartz) (CAS 14808-60-7)
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)
Limestone (CAS 1317-65-3)

US. New Jersey Worker and Community Right-to-Know Act

Crystalline silica (Quartz) (CAS 14808-60-7)
Limestone (CAS 1317-65-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Crystalline silica (Quartz) (CAS 14808-60-7)
Limestone (CAS 1317-65-3)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Crystalline silica (Quartz) (CAS 14808-60-7)
Methanol (CAS 67-56-1)

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 22-April-2015

Revision date

-

Version #

01

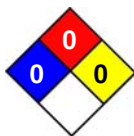
HMIS® ratings

Health: 0

Flammability: 0

Physical hazard: 0

NFPA ratings



Disclaimer

William H. Harvey Company 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. The information in the sheet was written based on the best knowledge and experience currently available.

1. Identification

Product identifier		Harvey Thread Cutting Oil							
Other means of identification									
Product code		3335E							
Synonyms	Part Numbers –	016035	016110	016165	016272	016324	016336	016365	
		016036	016115	016170	016273	016325	016337	016366	
		016050	016120	016190	016276-W	016326-W	016338	016390	
		016055	016150	016205	016277	016327	016341	016391	
		016060	016151	016215	016278	016328	016342	248674	
		016070	016153	016261	016279	016330	016343	403766	
		016100	016154	016264	016281	016331	016348	403774	
		016101	016155	016265	016320	016332	016350	Premier 461020	
		016102	016157	016266	016321	016333	016351	Premier 461020	
		016105	016160	016267	016322	016334	016353	Premier 461023	
								Premier 461024	
Recommended use		Lubricant for Cutting Threads							
Recommended restrictions		None Known							
Manufacturer/Importer/Supplier/Distributor information									
Company Name		William H. Harvey Company							
Address		4334 South 67 th Street							
		Omaha, NE 68117							
Telephone		402-331-1175							
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	Not Classified.		
Health hazards	Acute Toxicity Oral		Cat 4
	Skin Corrosion/Irritation		Cat 2B
	Eye Damage/Irritation		Cat 2B
OSHA defined hazards	Not Classified.		
Label elements			
Hazard symbol			
Signal word	Warning		
Hazard statement	Harmful if swallowed. Causes mild skin irritation. Cause eye irritation. May cause respiratory irritation.		
Precautionary statement			
Prevention	Keep container tightly closed. Wear protective clothes and eye protection. Wash thoroughly after handling. Avoid breathing fumes, or mist.		
Response	IF ON SKIN: Rinse skin with water. Wash contaminated clothing before reuse. IF SWALLOWED: Call a poison center or doctor if you feel unwell. Rinse Mouth. Do not induce vomiting. 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 eye irritation persists, get medical attention.		

Storage	Store in a well-ventilated space. Keep cool.
Disposal	Dispose of contents/container in accordance with local regulations.
Hazard(s) not otherwise classified (HNOC)	Used Oil may contain harmful impurities.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Petroleum Hydrocarbon Mixture	64742-65-0	>95

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Ingestion	Wash out mouth with water. 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. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Ingestion may result in nausea, vomiting, and or diarrhea.
Indication of immediate medical attention and special treatment needed.	Immediate medical attention is not required.
General information	Note to physician, treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	Do not use water in a jet.
Specific hazards arising from the chemical	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases, oxides of sulfur and phosphorous (smoke). Carbon monoxide.
Special protective equipment and precautions for firefighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Fire fighting equipment/instructions	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. Use water spray to keep fire-exposed containers cool. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Specific methods	None
General fire hazards	None

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. 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".
Methods and materials for containment and cleaning up	Large Spills: Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal. Small Spills: Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.

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).

7. Handling and storage**Precautions for safe handling**

Use local exhaust ventilation if there is risk of inhalation of vapors, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials to prevent fires. Put on appropriate personal protective equipment (see section 8 of SDS). 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 of SDS) 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.

8. Exposure controls/personal protection**Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	Type	Value
Oil Mist, Mineral	TLV or PEL	5 mg/m3

US OSHA Permissible Exposure Limits

Components	Type	Value

Biological limit values

Data Not available.

Appropriate engineering controls

No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Individual protection measures, such as personal protective equipment**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.

Skin protection**Hand**

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.

Other

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, particulate filter 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.

Thermal hazards

None.

General hygiene considerations

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.

9. Physical and chemical properties**Appearance****Physical state**

Liquid

Form

Liquid

Color

Clear, light amber

Odor

Slight hydrocarbon

Odor threshold

Not available.

pH	Not applicable
Melting point/freezing point	No data available.
Initial boiling point and boiling range	Not determined
Flash point	> 340 °F (> 171°C)
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	Not applicable
Vapor density	Not applicable
Relative density	0.91
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	>6 based on similar products
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available
Viscosity, kinematic	27.5 – 33.5 mm ² /s @ 40 °C
Other information	
VOC (Weight %)	< 1% by weight, < 10 g/L

10. Stability and reactivity

Reactivity	The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph..
Chemical stability	The product is stable.
Possibility of hazardous reaction	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Extreme temperature and direct sunlight.
Incompatible materials	Strong Oxidizing Agents.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Mist from processing.
Skin contact	Skin contact.
Eye contact	Eye contact.
Ingestion	No known significant effects or critical hazards.
Symptoms related to the physical, chemical and toxicological characteristics	No specific data.

Information on likely routes of exposure

Acute Toxicity

Components	Species	Results
Skin corrosion/irritation	May cause skin irritation after prolonged exposure. Prolonged exposure or repeated exposure without proper cleaning can clog pores of the skin.	
Serious eye damage/eye irritation	Expected to be slightly irritating.	
Respiratory or skin sensitization		
Respiratory sensitization	Inhalation of vapors or mists may cause irritation to the respiratory system.	
Skin sensitization	This product is not expected to cause skin irritation.	
Germ cell mutagenicity	Not considered a mutagenic hazard	
Carcinogenicity	No component of this product is identified as a probable, possible, or confirmed carcinogen by IARC, NTP, Monographs, or OSHA.	

Reproductive toxicity	No known significant effects or critical hazards.
Specific target organ toxicity	
Single exposure	Not expected to be a hazard.
Repeated exposure	Not expected to be a hazard.
Aspiration Hazard	Contains Distillates (petroleum), hydrotreated – Which is a category 1 Aspiration Hazard. The likely hood of aspirating the product in this form is very low due to the high viscosity.
Chronic effects	Not Classified.
Further information	Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and may present risks to health and the environment on disposal. Used oil should be handled with caution and skin contact should be avoided when possible.

12. Ecological information

Ecotoxicity

Product/ingredient name	Results	Species	Exposure
Persistence and degradability	Not Available.		
Bio accumulative potential	Not Available.		
Mobility in soil	Liquid under most conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.		
Other adverse effects	No known significant effects or critical hazards.		

13. Disposal considerations

Disposal instructions	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. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Local disposal regulations	Not Applicable
Hazardous waste code	Not Applicable

14. Transportation information

DOT	Not Regulated
UN number	
UN Proper Shipping Name	
Transportation Hazard classes	
Packing group	
IATA	Not Regulated
UN number	
UN Proper Shipping Name	
Transportation Hazard classes	
Packing group	
IMDG	Not Regulated
UN number	
UN Proper Shipping Name	
Transportation Hazard classes	
Packing group	
Environmental hazards	
Marine pollutant	

15. Regulatory information

International Inventories All the substances contained in this product are listed or exempted from listing in the following inventories:
U.S.A. (TSCA)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	no
Chronic Health Hazard	no
Fire Hazard	no
Sudden Release of Pressure Hazard	no
Reactive Hazard	no

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

16. Other information, including date of preparation or last revision

Issue Date 12-May-2015

Revision Date -

Version # 01

HMIS Rating Health: 1
Flammability: 1
Physical Hazards: 0

Disclaimer William H. Harvey, 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. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier Harvey Wax Bowl Rings

Other means of identification

Product code 3620E

Synonyms No-Seep, Bol Wax Rings

Recommended use Sealing toilet bowl to flange

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name William H. Harvey Company

Address 4334 South 67th Street
Omaha, NE 68117

Telephone 402-331-115

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 Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Slack Wax	64742-61-6	90-100

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

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	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	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	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
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. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Following product recovery, flush area with water. 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	Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/personal protection	
Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	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.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
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 to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Solid.
Color	Tan.

Odor	None.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not determined
Flash point	> 212.0 °F (> 100.0 °C)
Evaporation rate	Not available.
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	Not available.
Vapor density	Not available.
Relative density	0.84 +/- 0.05
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
VOC (Weight %)	0 g/l

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	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

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 This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

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.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

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.

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.

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.

15. Regulatory information

US federal regulations This product is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard.

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

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

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)*
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 23-April-2015
Revision date 23-April-2015
Version # 02
HMIS® ratings Health: 0
Flammability: 0
Physical hazard: 0

NFPA ratings



Disclaimer

William H. Harvey Company 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. The information in the sheet was written based on the best knowledge and experience currently available.

Hercules



SAFETY DATA SHEET

1. Identification

Product identifier	Cloroben Aid-Ox®
Other means of identification	
SDS number	252034
Synonyms	Part Numbers: 252034
Recommended use	Septic System Restorer
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	Oxidizing solids	Category 2
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	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	Not classified.	
Label elements		



Signal word	Warning
Hazard statement	May intensify fire; oxidizer. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Harmful to aquatic life.
Precautionary statement	
Prevention	Keep away from heat. Keep/Store away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Avoid breathing dust. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection/face protection. Wash thoroughly after handling. Avoid release to the environment.
Response	In case of fire: Use media appropriate for surrounding materials for extinction. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. 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: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Sodium percarbonate	15630-89-4	60-100

*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	Remove contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Do not rub eyes. Immediately flush eyes 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 develops and persists.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	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	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
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. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. 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	Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk. Absorb in vermiculite, dry sand or earth and place into containers. Collect dust using a vacuum cleaner equipped with HEPA filter. Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Prevent product from entering drains. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for 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 release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.
7. Handling and storage	
Precautions for safe handling	Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. 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	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	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. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. 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).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Dust & vapor respirator.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Keep away from food and drink. 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

Physical state	Solid.
Form	Powder.
Color	White.
Odor	Odorless.
Odor threshold	Not available.
pH	10 (1% by weight)
Melting point/freezing point	Not available.
Initial boiling point and boiling range	None
Flash point	None
Evaporation rate	Not available.
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	Not available.

Vapor density	Not available.
Relative density	0.95 - 1.08
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
VOC (Weight %)	0 g/l

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	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Dust may irritate respiratory system.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Dusts may irritate the respiratory tract, skin and eyes. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
Cloroben Aid-Ox® (CAS Mixture)		
<i>Dermal</i>		
LD50	Rabbit	2000 mg/kg
<i>Inhalation</i>		
LC50		4580 mg/l
<i>Oral</i>		
LD50	Rat	2400 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 a respiratory sensitizer.

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	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.

12. Ecological information

Ecotoxicity	Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Components	Species	Test Results
Sodium percarbonate (CAS 15630-89-4)		
Aquatic		
Fish	LC50	Pimephales promelas
		70.7 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.
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. 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	UN1479
UN proper shipping name	Oxidizing solid, n.o.s. (Sodium percarbonate, Sodium carbonate)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Label(s)	5.1
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	62, IB8, IP2, IP4, T3, TP33
Packaging exceptions	152
Packaging non bulk	212
Packaging bulk	240

IATA

UN number	UN1479
UN proper shipping name	Oxidizing solid, n.o.s. (Sodium percarbonate, Sodium carbonate)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-

Packing group	II
Environmental hazards	No.
ERG Code	5L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
IMDG	
UN number	UN1479
UN proper shipping name	OXIDIZING SOLID, N.O.S. (Sodium percarbonate, Sodium carbonate)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-Q
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	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.

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 - 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.

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

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

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
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

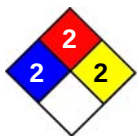
*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

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	23-April-2015
Revision date	-
Version #	01
HMIS® ratings	Health: 2 Flammability: 2 Physical hazard: 2

NFPA ratings



Disclaimer

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. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier	Hercules Megaloc
Other means of identification	
Product code	7305E
Synonyms	Part Numbers: 15802, 15804, 15806, 15808, 15811, 15814, 15816, 15818, 15821
Recommended use	Pipe thread sealant.
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	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. The thermal decomposition vapors of fluorinated polymers may cause polymer fume fever.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Petroleum-based Lubricating Oil	64741-88-4	30-60
Kaolin	1332-58-7	10-30
Talc	14807-96-6	10-30
Magnesium carbonate	546-93-0	1-10
Poly (P-phenylenediamine terephthalamide)	26125-61-1	1-5
Titanium Dioxide	13463-67-7	1-5
Silica, amorphous, fumed	112945-52-5	0.5-1.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	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	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	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	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. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: 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	Avoid prolonged exposure. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. 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	Form
Kaolin (CAS 1332-58-7)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Magnesium carbonate (CAS 546-93-0)	PEL	5 mg/m3	Respirable fraction.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	PEL	15 mg/m3 5 mg/m3	Total dust. Mist.
Titanium Dioxide (CAS 13463-67-7)	PEL	2000 mg/m3 500 ppm 15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
Talc (CAS 14807-96-6)	TWA	0.1 mg/m3 0.3 mg/m3 0.1 mg/m3 20 mppcf 2.4 mppcf	Respirable. Total dust. Respirable. Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Kaolin (CAS 1332-58-7)	TWA	2 mg/m3	Respirable fraction.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	TWA	5 mg/m3	Inhalable fraction.
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.
Kaolin (CAS 1332-58-7)	TWA	5 mg/m3 10 mg/m3	Respirable. Total
Magnesium carbonate (CAS 546-93-0)	TWA	5 mg/m3 10 mg/m3	Respirable. Total
Petroleum-based Lubricating Oil (CAS 64741-88-4)	STEL	10 mg/m3	Mist.
Talc (CAS 14807-96-6)	TWA	5 mg/m3	Mist.
	TWA	2 mg/m3	Respirable.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
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 to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid paste.
Color	Blue.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	> 212.0 °F (> 100.0 °C)
Evaporation rate	Not available.
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	Not available.
Vapor density	Not available.
Relative density	1.2 g/cm3
Solubility(ies)	
Solubility (water)	Slightly Soluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	30000 cP
Other information	
VOC (Weight %)	4 g/l

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	Contact with incompatible materials.
Incompatible materials	Acids.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

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.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Information on toxicological effects	
Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
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 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.)
IARC Monographs. Overall Evaluation of Carcinogenicity	
Crystalline silica (Quartz) (CAS 14808-60-7)	1 Carcinogenic to humans.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	3 Not classifiable as to carcinogenicity to humans.
Titanium Dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.
NTP Report on Carcinogens	
Crystalline silica (Quartz) (CAS 14808-60-7)	Known To Be Human Carcinogen.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	Known To Be Human Carcinogen.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further information	This product has no known adverse effect on human health.

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.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
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.
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.

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 established.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Magnesium carbonate (CAS 546-93-0)
Petroleum-based Lubricating Oil (CAS 64741-88-4)
Talc (CAS 14807-96-6)
Titanium Dioxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Magnesium carbonate (CAS 546-93-0)

Talc (CAS 14807-96-6)
Titanium Dioxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Talc (CAS 14807-96-6)
Titanium Dioxide (CAS 13463-67-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

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

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Crystalline silica (Quartz) (CAS 14808-60-7)
Di-"isononyl" phthalate (CAS 28553-12-0)
Titanium Dioxide (CAS 13463-67-7)

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 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 05-February-2015

Revision date -

Version # 01

HMIS® ratings Health: 0
Flammability: 1
Physical hazard: 0

NFPA ratings



Disclaimer

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. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier HERCULES Johni Rings

Other means of identification

Product code 7620E

Synonyms Johni Ring and Johni Ring Plus

Recommended use Sealing toilet bowl to flange

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 Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Slack Wax	64742-61-6	90-100

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

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	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	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	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
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. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Following product recovery, flush area with water. 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	Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/personal protection	
Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	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.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
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 to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Solid.
Color	Tan.

Odor	None.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not determined
Flash point	> 212.0 °F (> 100.0 °C)
Evaporation rate	Not available.
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	Not available.
Vapor density	Not available.
Relative density	0.84 +/- 0.05
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
VOC (Weight %)	0 g/l

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	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

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 This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

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.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

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.

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.

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.

15. Regulatory information

US federal regulations This product is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard.

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

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

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)*
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

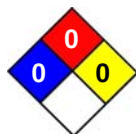
Issue date 23-April-2015

Revision date -

Version # 01

HMIS® ratings Health: 0
Flammability: 0
Physical hazard: 0

NFPA ratings



Disclaimer

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. The information in the sheet was written based on the best knowledge and experience currently available.

Hilti

1 Identification

- **Product identifier**
- **Trade name:**
FS-ONE MAX
Hilti Firestop Filler Mastix CFS-FIL
- **Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
- **Application of the substance / the mixture** Construction chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Hilti, Inc.
5400 South 122nd East Ave.
US-Tulsa, OK 74146
Phone: (800) 879-8000
Fax: (800) 879-7000
Español: (800) 879-5000
- **Information department:**
chemicals.hse@hilti.com
see section 16
- **Emergency telephone number:**
Chem-Trec
Tel.: 1 800 424 9300
Tox Info Suisse - 24 h Service
Tel.: 0041 / 44 251 51 51 (international)

2 Hazard(s) identification

- **Classification of the substance or mixture** The product is not classified according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Classification system**
- **NEPA ratings (scale 0-4)**



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

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:**

Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

57-55-6 propane-1,2-diol	<2.5%

- **Additional information** For the wording of the listed risk phrases refer to section 16.

4 First-aid measures

- **Description of first aid measures**
- **General information** No special measures required.
- **After inhalation** Take affected persons into fresh air and keep quiet.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing** Seek immediate medical advice.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents** CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

(Contd. on page 2)

(Contd. of page 1)

· **Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

Carbon monoxide (CO)

Carbondioxide (CO₂)

· **Advice for firefighters**

· **Protective equipment:** Ensure adequate ventilation

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation

Wear protective clothing.

Particular danger of slipping on leaked/spilled product.

· **Environmental precautions:** Do not allow product to reach sewage system or any water course.

· **Methods and material for containment and cleaning up:**

Pick up mechanically.

Dispose contaminated material as waste according to item 13.

· **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.

7 Handling and storage

· **Handling**

· **Precautions for safe handling** No special measures required.

· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**

· **Storage**

· **Requirements to be met by storerooms and receptacles:** keep containers securely closed and dry, store at 5 - 25 °C / 41 - 77 °F

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:** None.

· **Storage class** 10

· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

57-55-6 propane-1,2-diol

WEEL Long-term value: 10 mg/m³

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment**

· **General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Avoid contact with the eyes and skin.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

· **Breathing equipment:** Not necessary if room is well-ventilated.

· **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

EN 374

· **Material of gloves**

Synthetic 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.

· **For the permanent contact gloves made of the following materials are suitable:** Nitrile rubber, NBR

(Contd. on page 3)

(Contd. of page 2)

· Eye protection:



Tightly sealed goggles.

EN 166 + EN 170

· Body protection:



Protective work clothing.

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form: Pasty

Color: Red

· Odor: Characteristic

· 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.

· Ignition temperature:

Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

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

· Explosion limits:

Lower: Not determined.

Upper: Not determined.

· Vapor pressure at 20 °C (68 °F): 23 hPa (17 mm Hg)

· Density: Not determined

· Relative density Not determined.

· Vapour density Not determined.

· Evaporation rate Not applicable.

· 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.

· Solvent content:

Organic solvents: 1.0 %

Water: 18.5 %

· Other information VOC Content: 9 g/l (EPA Method 24)

10 Stability and reactivity

· Reactivity

· Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· Possibility of hazardous reactions No dangerous reactions known

· Conditions to avoid No further relevant information available.

· Incompatible materials: No further relevant information available.

· Hazardous decomposition products: No dangerous decomposition products known

US

(Contd. on page 4)

11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

· Primary irritant effect:

· on the skin: No irritant effect.

· on the eye: No irritating effect.

· Sensitization: No sensitizing effects known.

· Additional toxicological information:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· IARC (International Agency for Research on Cancer)

14808-60-7 | Quartz (SiO₂)

1

· NTP (National Toxicology Program)

14808-60-7 | Quartz (SiO₂)

K

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

· Toxicity

· Aquatic toxicity: No further relevant information available.

· Persistence and degradability: No further relevant information available.

· Behavior in environmental systems:

· Bioaccumulative potential: No further relevant information available.

· Mobility in soil: No further relevant information available.

· Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

· Other adverse effects: No further relevant information available.

13 Disposal considerations

· Waste treatment methods

· Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· European waste catalogue:

08 00 00

08 04 00

08 04 10

· Uncleaned packagings:

· Recommendation: Dispose of packaging according to regulations on the disposal of packagings.

14 Transport information

· UN-Number

· DOT, ADR, ADN, IMDG, IATA

Void

· UN proper shipping name

· DOT, ADR, ADN, IMDG, IATA

Void

· Transport hazard class(es)

· DOT, ADR, ADN, IMDG, IATA

· Class

Void

· Packing group

· DOT, ADR, IMDG, IATA

Void

· Environmental hazards:

· Marine pollutant:

No

· Special precautions for user

Not applicable.

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

Not applicable.

· UN "Model Regulation":

-

15 Regulatory information

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

· Sara

· Section 355 (Extremely hazardous substances):

None of the ingredients is listed.

(Contd. of page 4)

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

None of the ingredients are listed.

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

All ingredients are listed.

· **Proposition 65:**

· **Chemicals known to cause cancer:**

14808-60-7 | Quartz (SiO₂)

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

14808-60-7 | Quartz (SiO₂)

A2

· **MAK (German Maximum Workplace Concentration)**

14808-60-7 | Quartz (SiO₂)

1

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

14808-60-7 | Quartz (SiO₂)

· **Chemical safety assessment:** not required.

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.

· **Department issuing SDS:**

Hilti Corporation
Business Unit Chemicals
Quality/Safety/Environment
FL-9494 Schaan / Liechtenstein

chemicals.hse@hilti.com

Tel.: +423 234 3004

FAX.: +423 234 3462

· **Date of preparation / last revision** 05/18/2015 / -

· **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

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)

· *** Data compared to the previous version altered.**



Safety Data Sheet

acc. to ISO 11014

Printing date 05/18/2015

Version number 3

Reviewed on 05/18/2015

1 Identification

- **Product identifier**
- **Trade name:** Hilti HIT-HY 200-R
- **Container size:** 330 ml, 500 ml
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Sector of Use** Building and construction work
- **Application of the substance / the mixture** Adhesive anchoring system for rebar and anchor fastenings in concrete.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Hilti, Inc.
5400 South 122nd East Ave.
US-Tulsa, OK 74146
Phone: (800) 879-8000
Fax: (800) 879-7000
Español: (800) 879-5000
- **Information department:**
anchor.hse@hilti.com
see section 16
- **Emergency telephone number:**
Chem-Trec
Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada)
Tel.: 703 527 3887 (Other countries)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Aquatic Acute 1 H400 Very toxic to aquatic life.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07 GHS09

- **Signal word** Warning
- **Hazard-determining components of labeling:**
Hydroxypropyl methacrylate
dibenzoyl peroxide
- **Hazard statements**
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P262 Do not get in eyes, on skin, or on clothing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P302+P352 If on skin: Wash with plenty of water.
- **Classification system**
- **NEPA ratings (scale 0-4)**



Health = 2
Fire = 1
Reactivity = 1

(Contd. on page 2)

US EN



Safety Data Sheet

acc. to ISO 11014

Printing date 05/18/2015

Version number 3

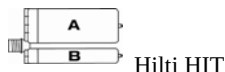
Reviewed on 05/18/2015

Trade name: Hilti HIT-HY 200-R

(Contd. of page 1)

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

- **Additional information:**



Hilti HIT

- **Information pertaining to particular dangers for man and environment: A**
H317 May cause an allergic skin reaction.
- **Information pertaining to particular dangers for man and environment: B**
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:**
2-Component-Foilpack, contains:
Component A: Urethane methacrylate resin, inorganic filler
Component B: Dibenzoylperoxide, phlegmatized

Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

- **Dangerous components A:**

27813-02-1	Hydroxypropyl methacrylate	5-10%
2082-81-7	tetramethylene dimethacrylate	10-15%
14808-60-7	Quartz (SiO ₂)	40-50%
1344-28-1	aluminium oxide	5-10%

- **Dangerous components B:**

94-36-0	dibenzoyl peroxide	10-15%
14808-60-7	Quartz (SiO ₂)	40-50%
1344-28-1	aluminium oxide	15-25%

4 First-aid measures

- **Description of first aid measures**
- **General information** Immediately remove any clothing soiled by the product.
- **After inhalation** Take affected persons into fresh air and keep quiet.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes under running water. Then consult a doctor.
Protect unharmed eye.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
Seek immediate medical advice.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** Allergic reactions
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

US EN

(Contd. on page 3)


Trade name: Hilti HIT-HY 200-R

(Contd. of page 2)

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Sand
- **For safety reasons unsuitable extinguishing agents** Water with full jet.
- **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbon monoxide (CO)
Carbondioxide (CO₂)
Nitrogen oxides (NO_x)
In certain fire conditions, traces of other toxic gases cannot be excluded.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
- **Environmental precautions:** Do not allow to penetrate the ground/soil.
- **Methods and material for containment and cleaning up:**
Pick up mechanically.
Clean the affected area carefully; suitable cleaners are:
organic solvent
Ensure adequate ventilation.
Dispose contaminated material as waste according to item 13.
- **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.

7 Handling and storage

- **Handling**
- **Precautions for safe handling**
Check the expiry date: see imprint on manifold (month/year). Do not use expired mortar!
The usual precautionary measures for handling chemicals should be followed.
- **Information about protection against explosions and fires:**
No special measures required.
Keep ignition sources away - Do not smoke.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Keep in a cool, dry and dark place; 41 °F / 5 °C to 77 °F / 25 °C.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** Protect from heat and direct sunlight.
- **Storage class**
As per VCI (1991) storage classification concept.
11
- **Specific end use(s)** Adhesive mortar for anchor and rebar fastenings

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product.

(Contd. on page 4)

Trade name: Hilti HIT-HY 200-R

(Contd. of page 3)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment**

· **General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Do not eat, drink, smoke or sniff while working.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Breathing equipment:** Not required.

· **Protection of hands:**



Protective gloves.

Only use chemical-protective gloves with CE-labeling of category III.

EN 374

Avoid direct contact with the chemical/ the product/ the preparation by organizational measures.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Material of gloves**

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.12 mm

· **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.

· **Not suitable are gloves made of the following materials:**

Natural rubber, NR

Leather gloves

Strong gloves

· **Eye protection:**



Tightly sealed goggles.

EN 166 / EN 170

· **Body protection:**



Protective work clothing.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:

Pasty

Color:

Component A: grey

Component B: white

· **Odor:**

Ester-like

· **Odour threshold:**

Not determined

· **pH-value:**

Componente A: not applicable

Componente B: ~ 7

· **Change in condition**

Melting point/Melting range:

Not determined.

Boiling point/Boiling range:

undetermined

· **Flash point:**

Component A: > 109 °C (DIN EN ISO 1523)

Component B: not applicable

· **Flammability (solid, gaseous)**

Not determined

(Contd. on page 5)



Safety Data Sheet

acc. to ISO 11014

Printing date 05/18/2015

Version number 3

Reviewed on 05/18/2015

Trade name: Hilti HIT-HY 200-R

(Contd. of page 4)

· Ignition temperature:	355 °C (671 °F)
· Decomposition temperature:	Component A: not relevant Component B: SADT 65 °C UN test H4
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined
Upper:	Not determined
· Vapor pressure at 20 °C (68 °F):	< 0.1 hPa (< 0 mm Hg)
· Density at 20 °C (68 °F):	1.8 g/cm ³ (15.021 lbs/gal) (DIN 51757)
· Relative density	Not determined
· Vapour 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 at 20 °C (68 °F):	50 Pa.s (DIN 53019)
kinematic at 20 °C (68 °F):	> 20 s (ISO 2431)
· Solvent separation test	Not determined
· Solvent content:	
Organic solvents:	None
Water:	Component B: ~ 20%
· Other information	VOC Content: 7 g/l (EPA Method 24)

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
To avoid thermal decomposition do not overheat.
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **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

- **Carcinogenic categories**

· NTP (National Toxicology Program)

14808-60-7 | Quartz (SiO₂)

K

US EN

(Contd. on page 6)



Trade name: Hilti HIT-HY 200-R

(Contd. of page 5)

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **According to the formulation contains the following heavy metals and compounds from the EU guideline NO. 2006/11/EC:**
None
- **General notes:** The product does not contain organically bounded halogens (AOX-free).
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations.

· European waste catalogue:	
08 04 09*	waste adhesives and sealants containing organic solvents or other dangerous substances
20 01 27*	paint, inks, adhesives and resins containing dangerous substances

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	
· DOT, ADN	
· Class	Void
· ADR, IMDG, IATA	
· Class	Void
· Label	Void
· Packing group	
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	
· Marine pollutant:	No
· Special marking (ADR):	None
· Special marking (IATA):	None
· Special precautions for user	Not applicable.
· Danger code (Kemler):	Void
· EMS Number:	Void
· Segregation groups	Void
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications. available oxygen content < 1 %

(Contd. on page 7)



Safety Data Sheet

acc. to ISO 11014

Printing date 05/18/2015

Version number 3

Reviewed on 05/18/2015

Trade name: Hilti HIT-HY 200-R

(Contd. of page 6)

- UN "Model Regulation": -
- HS-Code: 3214 10 10: Glaziers' putty, grafting putty, resin cements, caulking compounds and other mastics

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture

· Section 355 (Extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

1344-28-1 aluminium oxide

94-36-0 Dibenzoyl peroxide

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65:

· Chemicals known to cause cancer:

None of the ingredients are listed.

· Cancerogenicity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

14808-60-7 Quartz (SiO₂) A2

1344-28-1 aluminium oxide A4

94-36-0 Dibenzoyl peroxide A4

· MAK (German Maximum Workplace Concentration)

14808-60-7 Quartz (SiO₂) 1

1344-28-1 aluminium oxide 2

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

14808-60-7 Quartz (SiO₂)

· National regulations

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

- Information about limitation of use: Employment restrictions concerning young persons must be observed.

- Chemical safety assessment: not required.

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

R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.

R7 May cause fire.

R36 Irritating to eyes.

R43 May cause sensitisation by skin contact.

R50 Very toxic to aquatic organisms.

H241 Heating may cause a fire or explosion.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H400 Very toxic to aquatic life.

· Department issuing SDS:

(Contd. on page 8)

US EN

Trade name: Hilti HIT-HY 200-R

(Contd. of page 7)

Hilti Entwicklungsgesellschaft mbH
Hiltistrasse 6
D-86916 Kaufering
Tel.: +49 8191 906310
Fax: +49 8191 90176310
e-mail: anchor.hse@hilti.com
None

· **Contact:** Mechthild Krauter

· **Date of preparation / last revision** 05/18/2015 / 2

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

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

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)

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

· *** Data compared to the previous version altered.**

US EN



Safety Data Sheet

acc. to ISO 11014

Printing date 05/18/2015

Version number 1

Reviewed on 05/06/2015

1 Identification

- **Product identifier**
- **Trade name:** Hilti Spray
- **Container size:**
Item-no 308976 66 ml / 2.2 fl.oz
Item-no 314648 300 ml / 10.1 fl.oz
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Lubricating oil
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Hilti, Inc.
5400 South 122nd East Ave.
US-Tulsa, OK 74146
Phone: (800) 879-8000
Fax: (800) 879-7000
Español: (800) 879-5000
- **Information department:**
df-hse@hilti.com
see section 16
- **Emergency telephone number:**
Chem-Trec
Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada)
Tel.: 703 527 3887 (Other countries)

2 Hazard(s) identification

- **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonized System (GHS).
 - **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** not applicable
 - **Information concerning particular hazards for human and environment:**
The product does not have 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 was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.
 - **Label elements**
 - **GHS label elements** Void
 - **Hazard pictograms** Void
 - **Signal word** Void
 - **Hazard statements** Void
 - **Classification system**
 - **NFPA ratings (scale 0-4)**
- 

Health = 0

Fire = 1

Reactivity = 0
- **Other hazards**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Combination of readily biodegradable esters made from glycerine and corrosion inhibitors.
- **Dangerous components:** Void
- **Additional information** For the wording of the listed risk phrases refer to section 16.

US EN

(Contd. on page 2)



Safety Data Sheet

acc. to ISO 11014

Printing date 05/18/2015

Version number 1

Reviewed on 05/06/2015

Trade name: Hilti Spray

(Contd. of page 1)

4 First-aid measures

- **Description of first aid measures**
- **General information** No special measures required.
- **After inhalation** Take affected persons into fresh air and keep quiet.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents** Water with full jet.
- **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Carbon monoxide (CO)
Nitrogen oxides (NO_x)
Carbondioxide (CO₂)
In certain fire conditions, traces of other toxic gases cannot be excluded.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Particular danger of slipping on leaked/spilled product.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **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.
- **Reference to other sections**
No dangerous substances are released.
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* 7 Handling and storage

- **Handling**
- **Precautions for safe handling**
The usual precautionary measures for handling chemicals should be followed.
Avoid the formation of oil haze.
- **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Keep in a cool, dry and dark place; 41 °F / 5 °C to 77 °F / 25 °C.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

US EN

(Contd. on page 3)

Trade name: Hilti Spray

(Contd. of page 2)

8 Exposure controls/personal protection

- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures for handling chemicals should be followed.
Do not eat, drink, smoke or sniff while working.
Do not inhale gases / fumes / aerosols.
Wash hands before breaks and at the end of work.
- **Breathing equipment:**
Not required.
Avoid breathing mist.
- **Protection of hands:**



Protective gloves.

Avoid direct contact with the chemical/ the product/ the preparation by organizational measures.

- **Material of gloves**
Butyl rubber, BR
Natural rubber, NR
- **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

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Fluid
Color:	colourless-yellowish
Odor:	Mineral-oil-like
Odour threshold:	Not determined.
- **pH-value:** Slightly acidic
- **Change in condition**

Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	undetermined
- **Flash point:** Not applicable
- **Flammability (solid, gaseous)** Not determined
- **Ignition temperature:**
- **Decomposition temperature:** > 200 °C (> 392 °F)
- **Auto igniting:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

(Contd. on page 4)



Safety Data Sheet

acc. to ISO 11014

Printing date 05/18/2015

Version number 1

Reviewed on 05/06/2015

Trade name: Hilti Spray

(Contd. of page 3)

· Vapor pressure at 20 °C (68 °F):	< 1 mbar
· Density at 20 °C (68 °F):	0.93 g/cm ³ (7.761 lbs/gal) (DIN 51757)
· Relative density	Not determined.
· Vapour 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 at 20 °C (68 °F):	22 mm ² /s (DIN EN ISO 3104)
· Other information	No further relevant information available.

10 Stability and reactivity

- Reactivity
- Chemical stability
- Thermal decomposition / conditions to be avoided:
Temperatures > 40 °C
No decomposition if used and stored according to specifications.
- Possibility of hazardous reactions Reacts with acids, alkalis and oxidizing agents
- Conditions to avoid No further relevant information available.
- Incompatible materials: strong oxidizing agents
- Hazardous decomposition products: none, if stored and handled correctly.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
- LD/LC50 values that are relevant for classification: LD50(oral) > 2000 mg/kg (rat)
- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
- Carcinogenic categories

· NTP (National Toxicology Program)

None of the ingredients is listed.

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability Easily biodegradable
- Behavior in environmental systems:
- Bioaccumulative potential No further relevant information available.
- Mobility in soil No further relevant information available.
- Additional ecological information:
- According to the formulation contains the following heavy metals and compounds from the EU guideline NO. 2006/11/EC:
None
- General notes:
The product does not contain organically bounded halogens (AOX-free).
Do not allow product to reach ground water, water course or sewage system.
- Results of PBT and vPvB assessment
- PBT: Not applicable.

(Contd. on page 5)



Safety Data Sheet

acc. to ISO 11014

Printing date 05/18/2015

Version number 1

Reviewed on 05/06/2015

Trade name: Hilti Spray

(Contd. of page 4)

- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Delivery of waste oil to officially authorized collectors only.
Hand over to hazardous waste disposers.

- **European waste catalogue:**

13 02 07*	readily biodegradable engine, gear and lubricating oils

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number	
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	
· DOT, ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA	
· Class	Void
· Packing group	
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	-

15 Regulatory information

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

- **Section 355 (Extremely hazardous substances):**

None of the ingredients is listed.

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

None of the ingredients are listed.

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

All ingredients are listed.

- **Proposition 65:**

- **Chemicals known to cause cancer:**

None of the ingredients are listed.

- **Carcinogenicity categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

None of the ingredients is listed.

- **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

(Contd. on page 6)



Safety Data Sheet

acc. to ISO 11014

Printing date 05/18/2015

Version number 1

Reviewed on 05/06/2015

Trade name: Hilti Spray

(Contd. of page 5)

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

None of the ingredients is listed.

· Chemical safety assessment: not required.

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.

· Department issuing SDS:

Hilti Entwicklungsgesellschaft mbH

Hiltistrasse 6

D-86916 Kaufering

Tel.: +49 8191 906310

Fax: +49 8191 90176310

df-hse@hilti.com

· Contact: Mechthild Krauter

· Date of preparation / last revision 05/18/2015 / -

· Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

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

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

· * Data compared to the previous version altered.

US EN

1 Identification

- **Product identifier**
- **Trade name:** Hilti Firestop Coated Board CFS-CT B
Hilti Firestop Coated Board CP 670
Hilti Firestop Coated Board CP 673
Hilti Firestop Coated Board CP 676
Hilti Firestop Cord CFS-CO
Hilti Firestop Sleeve CP 645
Hilti Speed Strip CP 767
Hilti Speed Plug CP 777
- **Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
- **Application of the substance / the mixture** Construction chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Hilti, Inc.
5400 South 122nd East Ave.
US-Tulsa, OK 74146
Phone: (800) 879-8000
Fax: (800) 879-7000
Español: (800) 879-5000
- **Information department:**
chemicals.hse@hilti.com
see section 16
- **Emergency telephone number:**
Tox Info Suisse - 24 h Service
Tel.: 0041 / 44 251 51 51 (international)
- Chem-Trec
Tel.: 1 800 424 9300

2 Hazard(s) identification

- **Classification of the substance or mixture** The product is not classified according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Classification system**
- **NFPA ratings (scale 0-4)**



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

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:**
Mineral wool plate with coating
Article made from mineral wool and fibre glass
- **Dangerous components:** Void

4 First-aid measures

- **Description of first aid measures**
- **General information** No special measures required.
- **After inhalation** Supply fresh air.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing** Seek immediate medical advice.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents** CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents** Water with full jet.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mount respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Avoid formation of dust.
Wear protective clothing.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling** Prevent formation of dust.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store in dry conditions.
- **Storage class 11**
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

287922-11-6 HT stone wool (90%)

AGW(Germany) 3*; 10** mg/m³

*inhalable (long term); **respirable (short term)

- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Do not inhale dust / smoke / mist.
- **Breathing equipment:** If dust is produced.
- **Protection of hands:**



Protective gloves.

- **Material of gloves** Strong gloves
- **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:**



Tightly sealed goggles.

· **Body protection:**

(Contd. of page 2)



Protective work clothing.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Solid material.

Color: Green

· **Odor:** Odorless

· **pH-value:** Not applicable

· **Change in condition**

Melting point/Melting range: > 1000 °C (> 1832 °F)

Boiling point/Boiling range: undetermined

· **Flash point:** Not applicable

· **Ignition temperature:** Not applicable

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density at 20 °C (68 °F):** 100-250 g/cm³ (834.5-086.25 lbs/gal)

· **Solubility in / Miscibility with**

Water: Insoluble

· **Solvent content:**

Solids content: 100.0 %

· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity**

· **Chemical stability**

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **Possibility of hazardous reactions** No dangerous reactions known

· **Conditions to avoid** No further relevant information available.

· **Incompatible materials:** No further relevant information available.

· **Hazardous decomposition products:** No dangerous decomposition products known

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Irritating effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

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

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability** No further relevant information available.

(Contd. on page 4)

(Contd. of page 3)

- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:** Not determined
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation** For disposal, local regulations issued by the authorities must be observed.

· European waste catalogue:

17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03
08 04 10	waste adhesives and sealants other than those mentioned in 08 04 09

- **Uncleaned packagings:**
- **Recommendation:**
Disposal must be made according to official regulations.
Dispose of packaging according to regulations on the disposal of packagings.
Empty packs: May be disposed via the local Green Dot collecting system or EAK waste material code 150102 (plastic packaging materials)

14 Transport information

· UN-Number	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· DOT, ADN, IMDG, IATA	Void
· ADR	Void
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA	Void
· Class	Void
· Packing group	
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	-

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· Section 355 (Extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65:

· Chemicals known to cause cancer:

None of the ingredients are listed.

· Cancerogenicity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

(Contd. on page 5)



Safety Data Sheet

acc. to ISO 11014

Printing date 05/19/2015

Version number 1

Reviewed on 05/19/2015

(Contd. of page 4)

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

None of the ingredients is listed.

· National regulations

· Information about limitation of use: None

· Chemical safety assessment: not required.

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.

· Department issuing SDS:

Hilti Corporation

Business Unit Chemicals

Quality/Safety/Environment

FL-9494 Schaan / Liechtenstein

chemicals.hse@hilti.com

Tel.: +423 234 3004

FAX.: +423 234 3462

· Date of preparation / last revision 05/19/2015 / -

· 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

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)

· * Data compared to the previous version altered.

US

J.C. Whitlam



Safety Data Sheet

SDS ID: Stock Code LD

Revision date: April 27, 2017

Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: Big Bubble Leak Detector
Synonyms: None
Chemical family: Surfactant mixture
Producer: J.C. Whitlam Manufacturing Company
200 West Walnut Street
P.O. Box 380
Wadsworth, Ohio 44282-0380
www.icwhitlam.com

Telephone: 330-334-2524 Available during normal business hours

Emergency: 330-334-2524 Available during normal business hours

Section 2. HAZARDS IDENTIFICATION

GHS Classification in accordance with 29 CFR 1910.1200

Skin Corrosion/Irritation, *Category 3*

Eye Damage/Irritation, *Category 2B*

GHS Label elements, including precautionary statements: Warning 

Hazard statements

H316 Causes mild skin irritation

H320 Causes eye irritation

Precautionary Statements

P264 Wash skin thoroughly after handling.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Get medical attention/advice.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+313 If eye irritation persists: Get medical advice/ attention.

Hazards not otherwise classified or not covered by GHS

Ingestion: May cause abdominal discomfort, nausea, and diarrhea.

Carcinogenic: No ingredients listed by the IARC, NTP, OSHA, or the ACHIH.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Material information:

Name	CAS No.	Weight %
Alpha-(Nonylphenyl)-(Omega-hydroxypoly (oxy-1,2-ethanediyl)	9016-45-9	1
Non-hazardous ingredients	Not Applicable	99

***Note:** The above weight percentages are represented in ranges as estimates. Due to variation among production batches, component percentages may vary.

Section 4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of the dangerous area.

Inhalation: Move exposed persons to fresh air. If the person is not breathing or breathing is irregular, provide artificial respiration or oxygen by trained personnel. Consult a physician.

Skin contact: Wash affected skin with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

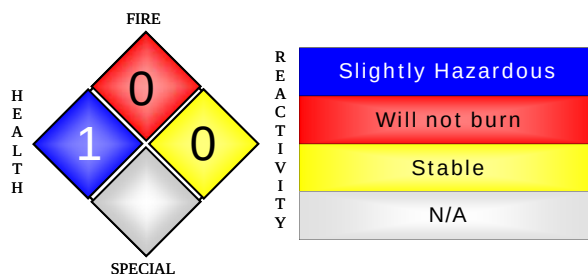
Ingestion: Do not induce vomiting, unless instructed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. If conscious and alert, rinse the mouth with water. Consult a physician.

Eye contact: Check for and remove any contact lenses, if easy to do so. If eye irritation persists, consult physician after flushing eyes with tepid water for 15 minutes.

Section 5. FIREFIGHTING MEASURES

Suitable extinguishing media:	Use extinguishing measures that are suitable to local circumstances and the surrounding fire and environment.
Specific hazards:	Combustion products may include carbon oxides.
Advice for Firefighters:	Full protective equipment including self-contained breathing apparatus should be used. Do not allow run-off from fire-fighting to enter drains or water courses.

	NFPA rating:	HMIS rating:
Health:	1	1
Flammability:	0	0
Instability/reactivity:	0	0
Other:	N/A	A (PPE)



Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Immediately contact emergency personnel. Evacuate any potentially affected area and isolate personnel from entry.
Large Spill:	Personnel must have appropriate training, per Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120. Do not touch damaged containers or spilled material unless wearing appropriate protective equipment (Section 8).
Methods for Containment and Clean up	Shut off source if possible and if safe. Prevent entry into waterways and sewers. Advise applicable authorities if material has entered sewers or water courses.

Section 7. HANDLING AND STORAGE

Handling:	Avoid breathing vapors. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling.
Storage:	Keep all containers tightly closed when not in use. Do not store with incompatible materials. See Section 10, Stability and Reactivity.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

Name	CAS No.	ACGIH® TLV® Exposure Limits:	Federal OSHA PELs	OSHA PELs 1989 ^c
Alpha-(Nonylphenyl)-(Omega-hydroxypoly (oxy-1,2-ethanediyl)	9016-45-9	None	None	None

All exposure limits listed are 8-hour time weighted average (TWA) — except where noted otherwise.

^A Time Weighted Average (TWA) is an average exposure over the course of an 8-hour work shift.

^B A Short Term Exposure Limit TWA over the course of 15 minutes.

PEL — Permissible Exposure Limit is the maximum 8-hour TWA concentration of a chemical that a worker may be exposed to under Occupational Safety and Health Administration (OSHA) regulations.

^C Federal OSHA 1989 PELs were vacated but are in use and enforced by many state OSHA plans.

Engineering measures: Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: For nuisance exposures, use type N95 (US) or type 1 (Europe Union EN 143) particle/mist respirator. For higher level protection, use type OV/AG/P99 (US) respirator cartridges. Use respirators and components approved by NIOSH.

Skin and body protection: Wear impervious clothing and gloves to prevent contact. Use the manufacturer's degradation and permeation data for protective material selection.

Eye protection: Wear safety spectacles with unperforated sideshields.

Hygiene measures: Avoid repeated or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove contaminated clothing and launder before reuse.

Other precautions: Do not let the product enter drains.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Fluorescent yellow liquid
Physical state (solid/liquid/gas):	Liquid
Substance type (pure/mixture):	Mixture
Color:	Yellow
Odor:	None
Molecular weight:	Not available
pH:	Not Applicable
Boiling point/range (5-95%):	212°F, 100°C
Melting point/range:	32°F, 0°C
Decomposition temperature:	Not Available
Specific gravity:	1.01
Vapor density:	(AIR = 1) Not available
Vapor pressure:	Not available
Evaporation rate (Butyl acetate= 1):	Not available
Flash point, method used:	Not flammable
Water solubility:	100%
VOC Content:	Not available
Auto-ignition temperature:	Not applicable
Flammable limits in air — lower (%):	Not applicable
Flammable limits in air — upper (%):	Not applicable

Section 10. STABILITY AND REACTIVITY

Reactivity:	No data available
Stability:	Stable under recommended storage conditions
Possibly hazardous reactions:	No data available
Conditions to avoid:	No data available
Incompatible Materials:	Strong oxidizing agents.
Hazardous decomposition products:	By fire, see Section 5. Other decomposition products: No data available
Polymerization:	Will not occur.

Section 11. TOXICOLOGICAL INFORMATION

Acute toxicity: Skin and eye irritation.

Product information:

Name	CAS No.	Inhalation:	Dermal:	Oral:
Alpha-(Nonylphenyl)- (Omega-hydroxypoly (oxy-1,2-ethanediyl)	9016-45-9	No data available	No data available	No data available

LC₅₀ — The concentration of the chemical in air that kills 50% of the test animals in a given time (usually four hours).

Chronic toxicity: No component of this product, present at levels greater than or equal to 1% is identified as a probable, possible, or confirmed human carcinogen by the IARC, NTP, OSHA, and ACGIH.

Sensitization: Not known to cause sensitization in humans.

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity effects: No data available.

Persistence No data available.

Degradability: No data available.

Section 13. DISPOSAL CONSIDERATIONS

Cleanup Considerations: This product is not a hazardous waste as defined under RCRA 40 CFR 261. The material destined for disposal must be characterized properly and may differ from the product described in this SDS if mixed with other wastes.

Section 14. TRANSPORT INFORMATION

Please refer to DOT regulation 49 CFR 172.101:

Transport information: This material is not regulated under DOT when transported via U.S. commerce routes; and IATA, and IMO via international routes

Hazardous Materials Description: (DOT and IATA):

UN/identification no.:	Not Applicable
Proper shipping name:	Not Applicable
Hazard class:	Not Applicable
Packing group:	Not Applicable
DOT reportable quantity (lbs.):	Not Applicable

Section 15. REGULATORY INFORMATION

U.S. federal regulatory information:

U.S. RCRA (40 CFR 261)

This product is not a hazardous waste as defined under RCRA 40 CFR 261.

State and community right-to-know regulations:

The following component(s) of this material are identified on the regulatory lists below:

U.S. TSCA Chemical inventory Section 8(b)

OSHA — This product is determined to be hazardous as defined in the OSHA Hazard Communications Standard (29 CFR 1910.1200)

CERCLA Sections 102a/103 (40 FR 302.4):

No ingredients are listed.

Some Components of this product are listed in the following sections of **SARA**:

SARA Title III Section 302 — N/A

SARA Title III Section 304 — N/A

SARA Title III Section 313 — This product does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21)

Acute health hazard:	Yes
Chronic health hazard:	No
Fire hazard:	No
Reactive Hazard:	No
Pressure Hazard:	No

California Proposition 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

NOTE: *User must consult with applicable state and local agencies for special specifics, determinations or compliance obligations regarding this product.*

Section 16. OTHER INFORMATION

The information and recommendations contained herein are based upon tests, data, and information resources believed to be reliable. However, the J.C. Whitlam Manufacturing Company, Inc., and its related operations or divisions (Whitlam) do not guarantee the accuracy or completeness, nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of goods, the merchantability of the goods or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage may be required. Whitlam assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of this data. No warranty against infringement of any patent, copyright or trademark is made or implied.



Safety Data Sheet

SDS ID: Stock Code LDS

Revision date: April 27, 2017

Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: Big Bubble Leak Detector Special Spray Formula
Synonyms: None
Chemical family: Surfactant mixture
Producer: J.C. Whitlam Manufacturing Company
200 West Walnut Street
P.O. Box 380
Wadsworth, Ohio 44282-0380
www.icwhitlam.com

Telephone: 330-334-2524 Available during normal business hours

Emergency: 330-334-2524 Available during normal business hours

Section 2. HAZARDS IDENTIFICATION

GHS Classification in accordance with 29 CFR 1910.1200

Skin Corrosion/Irritation, *Category 3*

Eye Damage/Irritation, *Category 2B*

GHS Label elements, including precautionary statements: Warning 

Hazard statements

H316 Causes mild skin irritation

H320 Causes eye irritation

Precautionary Statements

P264 Wash skin thoroughly after handling.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Get medical attention/advice.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+313 If eye irritation persists: Get medical advice/ attention.

Hazards not otherwise classified or not covered by GHS

Ingestion: May cause abdominal discomfort, nausea, and diarrhea.

Carcinogenic: No ingredients listed by the IARC, NTP, OSHA, or the ACHIH.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Material information:

Name	CAS No.	Weight %
Alpha-(Nonylphenyl)-(Omega-hydroxypoly (oxy-1,2-ethanediyl)	9016-45-9	1
Non-hazardous ingredients	Not Applicable	99

***Note:** The above weight percentages are represented in ranges as estimates. Due to variation among production batches, component percentages may vary.

Section 4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of the dangerous area.

Inhalation: Move exposed persons to fresh air. If the person is not breathing or breathing is irregular, provide artificial respiration or oxygen by trained personnel. Consult a physician.

Skin contact: Wash affected skin with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

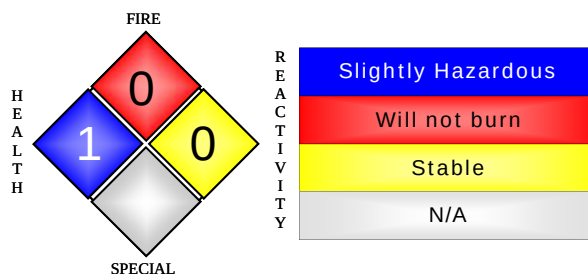
Ingestion: Do not induce vomiting, unless instructed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. If conscious and alert, rinse the mouth with water. Consult a physician.

Eye contact: Check for and remove any contact lenses, if easy to do so. If eye irritation persists, consult physician after flushing eyes with tepid water for 15 minutes.

Section 5. FIREFIGHTING MEASURES

Suitable extinguishing media:	Use extinguishing measures that are suitable to local circumstances and the surrounding fire and environment.
Specific hazards:	Combustion products may include carbon oxides.
Advice for Firefighters:	Full protective equipment including self-contained breathing apparatus should be used. Do not allow run-off from fire-fighting to enter drains or water courses.

	NFPA rating:	HMIS rating:
Health:	1	1
Flammability:	0	0
Instability/reactivity:	0	0
Other:	N/A	A (PPE)



Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Immediately contact emergency personnel. Evacuate any potentially affected area and isolate personnel from entry.
Large Spill:	Personnel must have appropriate training, per Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120. Do not touch damaged containers or spilled material unless wearing appropriate protective equipment (Section 8).
Methods for Containment and Clean up	Shut off source if possible and if safe. Prevent entry into waterways and sewers. Advise applicable authorities if material has entered sewers or water courses.

Section 7. HANDLING AND STORAGE

Handling:	Avoid breathing vapors. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling.
Storage:	Keep all containers tightly closed when not in use. Do not store with incompatible materials. See Section 10, Stability and Reactivity.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

Name	CAS No.	ACGIH® TLV® Exposure Limits:	Federal OSHA PELs	OSHA PELs 1989 ^c
Alpha-(Nonylphenyl)-(Omega-hydroxypoly (oxy-1,2-ethanediyl)	9016-45-9	None	None	None

All exposure limits listed are 8-hour time weighted average (TWA) — except where noted otherwise.

^A Time Weighted Average (TWA) is an average exposure over the course of an 8-hour work shift.

^B A Short Term Exposure Limit TWA over the course of 15 minutes.

PEL — Permissible Exposure Limit is the maximum 8-hour TWA concentration of a chemical that a worker may be exposed to under Occupational Safety and Health Administration (OSHA) regulations.

^C Federal OSHA 1989 PELs were vacated but are in use and enforced by many state OSHA plans.

Engineering measures: Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: For nuisance exposures, use type N95 (US) or type 1 (Europe Union EN 143) particle/mist respirator. For higher level protection, use type OV/AG/P99 (US) respirator cartridges. Use respirators and components approved by NIOSH.

Skin and body protection: Wear impervious clothing and gloves to prevent contact. Use the manufacturer's degradation and permeation data for protective material selection.

Eye protection: Wear safety spectacles with unperforated sideshields.

Hygiene measures: Avoid repeated or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove contaminated clothing and laundry before reuse.

Other precautions: Do not let the product enter drains.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Iridescent blue liquid
Physical state (solid/liquid/gas):	Liquid
Substance type (pure/mixture):	Mixture
Color:	Blue
Odor:	None
Molecular weight:	Not available
pH:	Not Applicable
Boiling point/range (5-95%):	212°F, 100°C
Melting point/range:	32°F, 0°C
Decomposition temperature:	Not Available
Specific gravity:	1.01
Vapor density:	(AIR = 1) Not available
Vapor pressure:	Not available
Evaporation rate (Butyl acetate= 1):	Not available
Flash point, method used:	Not flammable
Water solubility:	100%
VOC Content:	Not available
Auto-ignition temperature:	Not applicable
Flammable limits in air — lower (%):	Not applicable
Flammable limits in air — upper (%):	Not applicable

Section 10. STABILITY AND REACTIVITY

Reactivity:	No data available
Stability:	Stable under recommended storage conditions
Possibly hazardous reactions:	No data available
Conditions to avoid:	No data available
Incompatible Materials:	Strong oxidizing agents.
Hazardous decomposition products:	By fire, see Section 5. Other decomposition products: No data available
Polymerization:	Will not occur.

Section 11. TOXICOLOGICAL INFORMATION

Acute toxicity: Skin and eye irritation.

Product information:

Name	CAS No.	Inhalation:	Dermal:	Oral:
Alpha-(Nonylphenyl)- (Omega-hydroxypoly (oxy-1,2-ethanediyl)	9016-45-9	No data available	No data available	No data available

LC₅₀ — The concentration of the chemical in air that kills 50% of the test animals in a given time (usually four hours).

Chronic toxicity: No component of this product, present at levels greater than or equal to 1% is identified as a probable, possible, or confirmed human carcinogen by the IARC, NTP, OSHA, and ACGIH.

Sensitization: Not known to cause sensitization in humans.

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity effects: No data available.

Persistence No data available.

Degradability: No data available.

Section 13. DISPOSAL CONSIDERATIONS

Cleanup Considerations: This product is not a hazardous waste as defined under RCRA 40 CFR 261. The material destined for disposal must be characterized properly and may differ from the product described in this SDS if mixed with other wastes.

Section 14. TRANSPORT INFORMATION

Please refer to DOT regulation 49 CFR 172.101:

Transport information: This material is not regulated under DOT when transported via U.S. commerce routes; and IATA, and IMO via international routes

Hazardous Materials Description: (DOT and IATA):

UN/identification no.:	Not Applicable
Proper shipping name:	Not Applicable
Hazard class:	Not Applicable
Packing group:	Not Applicable
DOT reportable quantity (lbs.):	Not Applicable

Section 15. REGULATORY INFORMATION

U.S. federal regulatory information:

U.S. RCRA (40 CFR 261)

This product is not a hazardous waste as defined under RCRA 40 CFR 261.

State and community right-to-know regulations:

The following component(s) of this material are identified on the regulatory lists below:

U.S. TSCA Chemical inventory Section 8(b)

OSHA — This product is determined to be hazardous as defined in the OSHA Hazard Communications Standard (29 CFR 1910.1200)

CERCLA Sections 102a/103 (40 FR 302.4):

No ingredients are listed.

Some Components of this product are listed in the following sections of **SARA**:

SARA Title III Section 302 — N/A

SARA Title III Section 304 — N/A

SARA Title III Section 313 — This product does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21)

Acute health hazard:	Yes
Chronic health hazard:	No
Fire hazard:	No
Reactive Hazard:	No
Pressure Hazard:	No

California Proposition 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

NOTE: *User must consult with applicable state and local agencies for special specifics, determinations or compliance obligations regarding this product.*

Section 16. OTHER INFORMATION

The information and recommendations contained herein are based upon tests, data, and information resources believed to be reliable. However, the J.C. Whitlam Manufacturing Company, Inc., and its related operations or divisions (Whitlam) do not guarantee the accuracy or completeness, nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of goods, the merchantability of the goods or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage may be required. Whitlam assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of this data. No warranty against infringement of any patent, copyright or trademark is made or implied.

Safety Data Sheet

SDS ID: Stock Code IG

Revision date: April 27, 2017

Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: "Blue Magic" Industrial Grade Pipe Thread Compound

Synonyms: None

Chemical family: Pipe Thread Hydrocarbon Mixture

Producer: J.C. Whitlam Manufacturing Company

200 West Walnut Street

P.O. Box 380

Wadsworth, Ohio 44282-0380

www.icwhitlam.com

Telephone: 330-334-2524 Available during normal business hours

Emergency: CHEMTEL 800-255-3924 Available 24 hours

Section 2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Harmful if swallowed. Prolonged or repeated skin contact may cause drying, cracking, or irritation. High vapor concentrations may cause drowsiness and result in irritation of the eyes, nose, and throat and central nervous system (CNS) depression.

GHS Hazard and precautionary statements

WARNING — Serious Eye Irritation (category 2A), H319
Skin Irritation (category 2), H315
Acute oral toxicity (category 4), H302
Acute inhalation toxicity (category 4), H332
May cause drowsiness or dizziness (category 3), H336



Precautionary Statements:

P264: Wash skin thoroughly after handling. P280: Wear protective gloves and eye protection. P303 + P361: IF ON SKIN, immediately remove all contaminated clothing and wash before reuse. P305 + P351: IF IN EYES, Remove contact lenses if present and easy to do so, rinse with water for several minutes. P337 + P313: If eye or skin irritation persists – get medical advice/attention. P403 + P223: Store in a cool, well-ventilated place. Keep container tightly closed.

Inhalation: May cause irritation to mucous membranes and upper respiratory tract. In high concentrations, vapors and aerosol mists have a narcotic effect and may cause headache, central nervous system depression, fatigue, dizziness, and nausea. Severe overexposure may cause red blood cell damage.
Chronic: Repeated or prolonged exposure may result in blood, liver, or kidney damage. See Section 11 (Toxicological Information) for additional information.

Ingestion: May cause irritation of the digestive tract, stomach pain, nausea, and vomiting.

Skin contact: May be absorbed through the skin during prolonged or repeated contact, causing irritation, dermatitis, weakness, headache and nausea.

Eye contact: Exposure to vapors or liquid may cause eye irritation.

Carcinogenic: The IARC and ACGIH designate Ethylene glycol butyl ether (2-Butoxyethanol) and Isopropyl alcohol (2-Propanol) as category 3 – confirmed animal carcinogen with unknown relevance to humans. The ACGIH designates Ethylene glycol butyl ether (2-Butoxyethanol) as category A3– confirmed animal carcinogen with unknown relevance to humans.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Material information:

Name	CAS No.	Weight %
Ethylene glycol butyl ether Synonym: 2-Butoxyethanol	111-76-2	12-17
Isopropyl alcohol Synonym: 2-Propanol	67-63-0	10-15

***Note:** The above weight percentages are represented in ranges as estimates. Due to variation among production batches, component percentages may vary.

Section 4. FIRST AID MEASURES

Inhalation: Move exposed persons to fresh air. If the person is not breathing or breathing is irregular, provide artificial respiration or oxygen by trained personnel. Seek medical attention.

Skin contact: Quickly remove contaminated clothing and shoes. Wash affected skin with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. If conscious and alert, rinse the mouth with water. Call a physician or poison control center immediately.

Eye contact: Check for and remove any contact lenses. Immediately consult physician after flushing eyes with tepid water for 15 minutes.

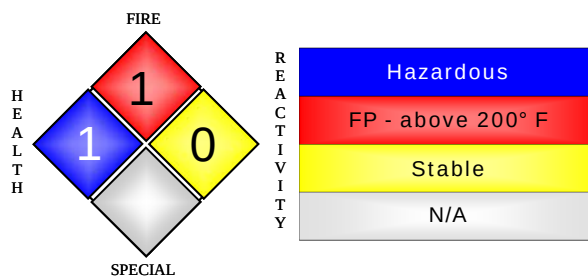
Section 5. FIREFIGHTING MEASURES

Suitable extinguishing media: Small fires — Class B fire-extinguishing media including water spray, foam, CO₂ or dry powder. Do not use a water stream, as this will spread the fire.

Specific hazards: Fire or intense heat may cause violent rupture of product containers. Vapors may form explosive mixtures with air. Application of extinguishing media to hot surfaces requires special precautions. During emergency conditions, overexposure to decomposition products including carbon oxides may cause a health hazard. Symptoms may not be immediately apparent.

Special protective equipment for firefighters: Full protective equipment including self-contained breathing apparatus should be used. Do not allow run-off from fire-fighting to enter drains or water courses.

NFPA rating: HMIS rating:		
Health:	1	1
Flammability:	1	1
Instability/reactivity:	0	0
Other:	N/A	H (PPE)



Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Immediately contact emergency personnel. Evacuate any potentially affected area and isolate personnel from entry. Ventilate closed spaces before entering them. Vapor can collect in lower areas.
Large Spill:	Personnel must have appropriate training, per Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120. Do not touch damaged containers or spilled material unless wearing appropriate protective equipment (Section 8).
Methods for Containment and Clean up	Shut off source if possible and if safe. Eliminate all ignition sources. Prevent entry into waterways, sewers, basements or confined areas. Advise applicable authorities if material has entered sewers or water courses.

Section 7. HANDLING AND STORAGE

Handling:	Use with adequate ventilation. Keep containers closed when not in use. Always open containers slowly to allow any excess pressure to vent. Avoid breathing vapors. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling. Launder soiled clothing thoroughly before re-use.
Storage:	Keep all containers tightly closed when not in use. Store out of direct sunlight and on an impermeable floor. Do not store with incompatible materials. See Section 10, Stability and Reactivity.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

Name	CAS No.	ACGIH® TLV® Exposure Limits:	Federal OSHA PELs	OSHA PELs 1989 ^C
Ethylene glycol butyl ether Synonym: 2-Butoxyethanol	111-76-2	20 ppm ^A	50 ppm ^A	25 ppm ^A
Isopropyl alcohol Synonym: 2-Propanol	67-63-0	200 ppm ^A 400 ppm ^B	400 ppm ^A	400 ppm ^A 500 ppm ^B

All exposure limits listed are 8-hour time weighted average (TWA) — except where noted otherwise.

^A Time Weighted Average (TWA) is an average exposure over the course of an 8-hour work shift.

^B A Short Term Exposure Limit TWA over the course of 15 minutes.

PEL — Permissible Exposure Limit is the maximum 8-hour TWA concentration of a chemical that a worker may be exposed to under Occupational Safety and Health Administration (OSHA) regulations.

^C Federal OSHA 1989 PELs were vacated but are in use and enforced by many state OSHA plans.

Engineering measures: Local exhaust ventilation is preferable. General ventilation is acceptable if exposure to materials in this section is maintained below applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection:	When engineering controls are not sufficient to reduce exposure to levels below applicable exposure limits, seek professional advice prior to respirator selection and use. For concentrations less than 10 times the exposure limits, wear a properly fitted NIOSH/ MSHA-approved respirator with organic vapor cartridges.
Skin and body protection:	Wear impervious clothing and gloves to prevent contact. Use the manufacturer's degradation and permeation data for protective material selection.
Eye protection:	Wear safety spectacles with unperforated sideshields, or goggles.
Hygiene measures:	Avoid repeated or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove contaminated clothing and launder before reuse.
Other precautions:	Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Blue paste
Physical state (solid/liquid/gas):	Paste
Substance type (pure/mixture):	Mixture
Color:	Blue
Odor:	Mild odor
Molecular weight:	Not Available
pH:	Not Applicable
Boiling point/range (5-95%):	Not Available
Melting point/range:	Not Available
Decomposition temperature:	Not Available
Specific gravity:	1.41
Vapor density:	(AIR = 1) <1
Vapor pressure:	0.88 mm Hg at 68°F
Evaporation rate (Butyl acetate= 1):	0.6
Flash point, method used:	Above 200 °F; UN test N.1
Water solubility:	Slight
VOC Content:	310 grams/liter (SCAQMD Rule 1168 Test Method316A)
Auto-ignition temperature:	921°F; 494°C
Flammable limits in air — lower (%):	1.1
Flammable limits in air — upper (%):	12.7

Section 10. STABILITY AND REACTIVITY

Reactivity:	No data available
Stability:	Stable under recommended storage conditions.
Possibly hazardous reactions:	Vapors may form an explosive mixture with air
Conditions to avoid:	Heat, flames, sparks, temperature extremes, and direct sunlight.
Incompatible Materials:	Strong oxides, chlorine, acids, alkalies, peroxides.
Hazardous decomposition products:	By fire, Carbon dioxide, Carbon monoxide
Polymerization:	Will not occur.

Section 11. TOXICOLOGICAL INFORMATION

Acute toxicity: Excessive exposure leads to depression of the central nervous system. Causes eye irritation, moderate skin irritation.

Product information:

Name	CAS No.	Inhalation:	Dermal:	Oral:
Ethylene glycol butyl ether Synonym: 2-Butoxyethanol	111-76-2	LC ₅₀ (Rat): ~700 ppm, 7 hours; LC ₅₀ (Guinea pig): ~932 ppm, 4 hours;	LD ₅₀ (Rat) >2,000 mg/kg LD ₅₀ (Guinea pig) >2,000 mg/kg	Acute LD ₅₀ (Rat):1,746 mg/kg Acute LD ₅₀ (Guinea pig):1,414 mg/kg
Isopropyl alcohol Synonym: 2-Propanol	67-63-0	LC ₅₀ (Rat): 16,000 ppm, 8 hours	LD ₅₀ (Rabbit) 12,800 mg/kg	LD ₅₀ (Rat) 5,000 to 5,045 mg/kg

LC₅₀ — The concentration of the chemical in air that kills 50% of the test animals in a given time (usually four hours).

Chronic toxicity: The IARC and ACGIH designates Ethylene glycol butyl ether (2-Butoxyethanol) and Isopropyl alcohol (2-Propanol) as category 3 – confirmed animal carcinogen with unknown relevance to humans. Repeated or prolonged exposure in excess of exposure limits in Section 8 may cause damage to the lungs, liver, blood, and kidney.

Sensitization: Not known to cause sensitization in humans.

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity effects: LC₅₀ Harlequinfish, Red rasbora 96-hour 4,200 mg/l.
LC₅₀ Fathead minnow 96-hour 9,640 to 10,000 mg/l.
EC₅₀ Water flea 48-hour 1,550 mg/l.

Persistence The estimated half-life (2-Butoxyethanol) in groundwater ranges from 14 days to 8 weeks; and in soil 7 days to 4 weeks.

Degradability: Expected to be readily biodegradable.

Section 13. DISPOSAL CONSIDERATIONS

Cleanup considerations: This product is not a hazardous waste as defined under RCRA 40 CFR 261. Do not incinerate a closed container. Disposal of this material must be done in accordance with federal, state and/or local regulations. The material destined for disposal must be characterized properly and may differ from the product described in this SDS if mixed with other wastes.

Section 14. TRANSPORT INFORMATION

Please refer to DOT regulation 49 CFR 172.101:

Transport information: This material is not regulated under DOT when transported via U.S. commerce routes; and IATA, and IMO via international routes

Hazardous Materials Description: (DOT and IATA):

UN/identification no.: Not Applicable
Proper shipping name: Not Applicable
Hazard class: Not Applicable
Packing group: Not Applicable
DOT reportable quantity (lbs.): Not Applicable

Section 15. REGULATORY INFORMATION

U.S. federal regulatory information:

U.S. RCRA (40 CFR 261)

This product is not a hazardous waste as defined under RCRA 40 CFR 261.

State and community right-to-know regulations:

The following component(s) of this material are identified on the regulatory lists below:

U.S. TSCA Chemical inventory Section 8(b)

OSHA — This product is determined to be hazardous as defined in the OSHA Hazard Communications Standard (29 CFR 1910.1200)

CERCLA Sections 102a/103 (40 FR 302.4):

No ingredients are listed.

Some Components of this product are listed in the following sections of **SARA**:

SARA Title III Section 302 — N/A

SARA Title III Section 304 — N/A

SARA Title III Section 313 — Ethylene glycol butyl ether (2-Butoxyethanol) 1% reporting threshold

Isopropyl alcohol (2-Propanol) 100 % reporting threshold

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21)

Acute health hazard: Yes

Chronic health hazard: Yes

Fire hazard: No

Reactive Hazard: No

Pressure Hazard: No

California Proposition 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

WHMIS (Canada)

Class D-2B: Material causing other toxic effects

NOTE: User must consult with applicable state and local agencies for special specifics, determinations or compliance obligations regarding this product.

Section 16. OTHER INFORMATION

Standards and Certification Listings:

The information and recommendations contained herein are based upon tests, data, and information resources believed to be reliable. However, the J.C. Whitlam Manufacturing Company, Inc., and its related operations or divisions (Whitlam) do not guarantee the accuracy or completeness, nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of goods, the merchantability of the goods or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage may be required. Whitlam assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of this data. No warranty against infringement of any patent, copyright or trademark is made or implied.

Safety Data Sheet

SDS ID: Stock Code T

Revision date: April 27, 2017

Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: Tyte-Unyte® Pipe Joint Compound
Synonyms: None
Chemical family: Alkaline Earth Carbonate
Producer: J.C. Whitlam Manufacturing Company
200 West Walnut Street
P.O. Box 380
Wadsworth, Ohio 44282-0380
www.jcwhitlam.com

Telephone: 330-334-2524 Available during normal business hours

Emergency: CHEMTEL 800-255-3924 Available 24 hours

Section 2. HAZARDS IDENTIFICATION

GHS Classification in accordance with 29 CFR 1910.1200

Skin Corrosion/Irritation, *Category 3*

Eye Damage/Irritation, *Category 2B*

Hazardous to the aquatic environment, acute hazard, *Category 3*

Signal Word and Hazard statements

Warning — Causes mild skin irritation H316
Causes eye irritation H320
Harmful to aquatic life H402



Precautionary Statements

P332 + P313 If skin or eye irritation occurs: Get medical advice/attention

P305+P338 If in eyes, check for and remove any contact lenses if present and easy to do so.

P351 Rinse eyes cautiously with tepid water for several minutes.

P337 If eye irritation persists, continue rinsing.

P273 Avoid release to the environment – if this is not the intended use.

P501 Dispose of contents in accordance with Federal, State, Provincial, and local regulations

Inhalation: Not applicable

Ingestion: Unlikely to be toxic by ingestion. Provide first aid (see Section 4)

Skin contact: P264 Wash hands thoroughly after handling. May cause mechanical irritation from prolonged or repeated contact.

Eye contact: May cause mechanical eye irritation.

Carcinogenic: Titanium dioxide is listed by the IARC as group 2B, see Section 11.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Material information:

Name	CAS No.	Weight %
Limestone	1317-65-3	17-23
Dolomitic limestone (Magnesite)	471-34-1 and 546-93-0	17-23
Talc	14807-96-6	8-13
Wollastonite	13983-17-0	8-13
Titanium dioxide	13463-67-7	<5
Zinc oxide	1314-13-2	<5
Graphite	07-782-44-5	1-5
Non-hazardous ingredients	Not Applicable	13-47

***Note:** The above weight percentages are represented in ranges as estimates. Due to variation among production batches, component percentages may vary.

Section 4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of the dangerous area.

Inhalation: Move exposed persons to fresh air. If the person is not breathing or breathing is irregular, provide artificial respiration or oxygen by trained personnel. Consult a physician.

Skin contact: Remove contaminated clothing and shoes. Wash affected skin with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

Ingestion: Unlikely to be toxic by ingestion. Do not induce vomiting. Never give anything by mouth to an unconscious person. If conscious and alert, rinse the mouth with water. Call a physician or poison control center immediately.

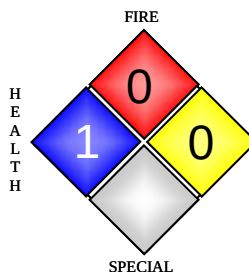
Eye contact: P305+P338 If in eyes, check for and remove any contact lenses if present and easy to do so. P351 Rinse eyes cautiously with tepid water for several minutes. P337+313 If eye irritation persists, continue rinsing and get medical advice/attention.

Section 5. FIREFIGHTING MEASURES

Suitable extinguishing media:	Use water spray, foam, carbon dioxide, or dry chemical. Water or foam may cause frothing of materials heated above 212°F.
Specific hazards:	None
Advice for Firefighters:	Full protective equipment including self-contained breathing apparatus should be used. Do not allow run-off from fire-fighting to enter drains or water courses.

NFPA rating: HMIS rating:

Health:	1	1
Flammability:	0	0
Instability/reactivity:	0	0
Other:	N/A	B (PPE)



Hazardous
FP - above 200 F
Stable
N/A

Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Immediately contact emergency personnel. Evacuate any potentially affected area and isolate personnel from entry. Keep ignition sources away from the spill/release.
Large Spill:	Personnel must have appropriate training, per Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120. Do not touch damaged containers or spilled material unless wearing appropriate protective equipment (Section 8). Stop the spill if it can be done safely.
Methods for Containment and Clean up	Shut off source if possible and if safe. Prevent entry into waterways and sewers. Wipe up or absorb on suitable material. Use a shovel to put the material into a convenient waste disposal container. Keep absorbed material in closed containers for disposal. Advise applicable authorities if material has entered sewers or water courses.

Section 7. HANDLING AND STORAGE

Handling:	Keep away from ignition sources. Keep containers closed when not in use. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling. Launder soiled clothing thoroughly before re-use.
Storage:	Keep all containers tightly closed when not in use. Do not store with incompatible materials. See Section 10, Stability and Reactivity.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

Name	CAS No.	ACGIH® TLV® or NIOSH REL Exposure Limits:	Federal OSHA PELs	OSHA PELs 1989 ^C
Limestone	1317-65-3	10 ^A , 3 ^{A,D}	15 ^A , 5 ^{A,D}	-
Dolomitic limestone (Magnesite)	471-34-1 546-93-0	10 ^A , 3 ^{A,D}	15 ^A , 5 ^{A,D}	-
Talc	14807-96-6	2 ^D	Not Estab.	2 ^D
Wollastonite	13983-17-0	Not Estab.	Not Estab.	Not Estab.
Titanium dioxide	13463-67-7	10 ^A , 3 ^{A,D}	15 ^A , 5 ^{A,D}	10 ^A
Zinc oxide	1314-13-2	2 ^D , 10 ^{B, D}	15 ^A , 5 ^{A,D}	10 ^A , 5 ^{A,D}
Graphite	07-782-44-5	Not Estab.	Not Estab.	Not Estab.

All exposure limits listed are 8-hour time weighted average (TWA) — except where noted otherwise.

^A Time Weighted Average (TWA) is an average exposure over the course of an 8-hour work shift. As measured in milligrams particulate per cubic meter of air.

^B A Short Term Exposure Limit TWA over the course of 15 minutes.

PEL — Permissible Exposure Limit is the maximum 8-hour TWA concentration of a chemical that a worker may be exposed to under Occupational Safety and Health Administration (OSHA) regulations.

^C Federal OSHA 1989 PELs were vacated but are in use and enforced by many state OSHA plans.

^D Respirable-size particulate.

Engineering measures: Local exhaust ventilation is preferable. General ventilation is acceptable if exposure to materials in this section is maintained below applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection:	When engineering controls are not sufficient to reduce exposure to levels below applicable exposure limits, seek professional advice prior to respirator selection and use. Wear a properly fitted NIOSH/ MSHA-approved respirator.
Skin and body protection:	Wear impervious clothing and rubber gloves to prevent contact. Use the manufacturer's degradation and permeation data for protective material selection.
Eye protection:	Wear safety spectacles with unperforated sideshields.
Hygiene measures:	Avoid repeated or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove contaminated clothing and laundry before reuse.
Other precautions:	Not applicable

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Gray
Physical state (solid/liquid/gas):	Paste
Substance type (pure/mixture):	Mixture
Color:	Gray
Odor:	Petroleum
Molecular weight:	Not available
pH:	Not Applicable
Boiling point/range (5-95%):	Not Available
Melting point/range:	Not Available
Decomposition temperature:	Not Available
Specific gravity:	1.89
Vapor density:	(AIR = 1) >1
Vapor pressure:	<1 mm Hg
Evaporation rate (Butyl acetate= 1):	<0.1
Flash point, method used:	350°F; 177°C
Water solubility:	Slight
VOC Content:	0 grams/liter
Auto-ignition temperature:	Not Available
Flammable limits in air — lower (%):	Not Available
Flammable limits in air — upper (%):	Not Available

Section 10. STABILITY AND REACTIVITY

Reactivity:	No data available
Stability:	Stable under recommended storage conditions.
Possibly hazardous reactions:	No data available
Conditions to avoid:	Extended exposures to high temperatures can cause decomposition.
Incompatible Materials:	Strong oxidizers, acids.
Hazardous decomposition products:	Carbon dioxide, carbon monoxide
Polymerization:	Will not occur.

Section 11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Product information:

Name	CAS No.	Inhalation:	Dermal:	Oral:
Limestone	1317-65-3	No data available.	No data available.	Acute LD ₅₀ (Rat):6,450 mg/kg
Zinc oxide	1314-13-2	Acute LC ₅₀ (Mouse): 2,500 mg/m ³	No data available.	No data available.

LC₅₀ — the concentration of the chemical in air that kills 50% of the test animals in a given time (usually four hours).

Carcinogenicity: The IARC lists titanium dioxide as group 2B. No ingredient of this product present at levels greater than 0.1% is listed as a carcinogen by the NTP and OSHA.

Reproductive toxicity: No data available.

Sensitization: No data available.

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity effects: **Limestone**
LC₅₀ fish (not specified) 72-hour >200 mg/l.

Titanium Dioxide

EC₅₀ Daphnia magna (Water flea) 48-hour >1,000 mg/l

EC₅₀ Pseudokirchneriella subcapitata (green algae) 72-hour 61 mg/l

LC₅₀ Pimephales promelas (fathead minnow) 96-hour >1,000 mg/l

Titanium Dioxide

EC₅₀ Daphnia magna (Water flea) 48-hour 0.098 mg/l

LC₅₀ Oncorhynchus mykiss (rainbow trout) 96-hour 1.1 mg/l

Persistence: No data available.

Degradability: No data available.

Section 13. DISPOSAL CONSIDERATIONS

Cleanup considerations: Dispose this material in accordance with Federal, State, Provincial, and/or local regulations.
The material destined for disposal must be characterized properly and may differ from the product described in this SDS if mixed with other wastes.

Section 14. TRANSPORT INFORMATION

Please refer to DOT regulation 49 CFR 172.101:

Transport information: This material is not regulated under DOT when transported via U.S. commerce routes; and IATA, and IMO via international routes

Hazardous Materials Description: (DOT and IATA):

UN/identification no.: Not Applicable
Proper shipping name: Not Applicable
Hazard class: Not Applicable
Packing group: Not Applicable
DOT reportable quantity (lbs.): Not Applicable

Section 15. REGULATORY INFORMATION

U.S. federal regulatory information:

U.S. RCRA (40 CFR 261)

This product is not a hazardous waste as defined under RCRA 40 CFR 261.

State and community right-to-know regulations:

The following component(s) of this material are identified on the regulatory lists below:

U.S. TSCA Chemical inventory Section 8(b)

OSHA — This product is determined to be hazardous as defined in the OSHA Hazard Communications Standard (29 CFR 1910.1200)

CERCLA Sections 102a/103 (40 FR 302.4):

No ingredients are listed.

Components of this product are listed not in the following sections of **SARA**:

SARA Title III Section 302 — N/A

SARA Title III Section 304 — N/A

SARA Title III Section 313 — This product does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21)

Acute health hazard:	No
Chronic health hazard:	No
Fire hazard:	No
Reactive Hazard:	No
Pressure Hazard:	No

California Proposition 65 Components

This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm (quartz $\leq 0.01\%$). The listing of titanium dioxide is for “airborne, unbound particles of respirable size”. This listing is not applicable to titanium dioxide when it remains bound with a product matrix.

WHMIS (Canada)

Titanium dioxide: Class D-2A: Material causing other toxic effects.

CAS# 1317-65-3 is listed on Canada's Non-Domestic Substance List

NOTE: User must consult with applicable state and local agencies for special specifics, determinations or compliance obligations regarding this product.

Section 16. OTHER INFORMATION

Standards and Certification Listings:

The information and recommendations contained herein are based upon tests, data, and information resources believed to be reliable. However, the J.C. Whitlam Manufacturing Company, Inc., and its related operations or divisions (Whitlam) do not guarantee the accuracy or completeness, nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of goods, the merchantability of the goods or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage may be required. Whitlam assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of this data. No warranty against infringement of any patent, copyright or trademark is made or implied.



Safety Data Sheet

SDS ID: Stock Code MT

Revision date: April 27, 2017

Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: "Make-Tyte" Super Soft Stainless Plumber's Putty
Synonyms: None
Chemical family: N/A
Producer: J.C. Whitlam Manufacturing Company
200 West Walnut Street
P.O. Box 380
Wadsworth, Ohio 44282-0380
www.icwhitlam.com

Telephone: 330-334-2524 Available during normal business hours

Emergency: 330-334-2524 Available during normal business hours

Section 2. HAZARDS IDENTIFICATION

Precautionary Statements: Observe good industrial hygiene practices.
Wash hands after handling.
Store away from incompatible materials.
Dispose of waste and residues in accordance with local authority requirements.

Hazardous Statement: None

Inhalation: Prolonged inhalation may be harmful.
Ingestion: Expected to be a low ingestion hazard.
Skin Contact: No adverse effects due to skin contact are expected.
Eye Contact: Direct contact with eyes may cause temporary irritation.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Material information:

Name	CAS No.	Weight %
Limestone	1317-65-3	60-90
Fats and Glyceridic Oil	68991-31-1	5 - 30
Crystalline Silica (Quartz)	14808-60-7	< 1

***Note:** The above weight percentages are represented in ranges as estimates. Due to variation among production batches, component percentages may vary.

Section 4. FIRST AID MEASURES

- Inhalation:** If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
- Skin contact:** Rinse with water/shower. Get medical attention if irritation develops and persists.
- Ingestion:** Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
- Eye contact:** Rinse with water. Get medical attention if irritation develops and persists.

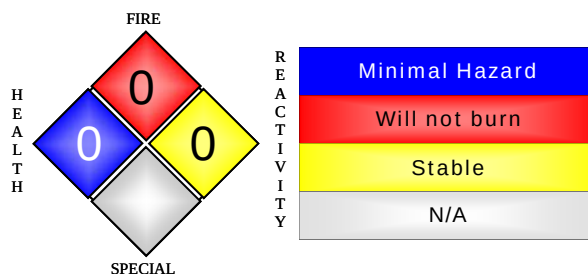
Section 5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂). Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards: During fire, gases hazardous to health may be formed.

Special protective equipment/instructions for firefighters: Full protective equipment including self-contained breathing apparatus should be used. Use water spray to cool unopened containers. Use standard firefighting procedures and consider the hazards of other involved materials.

	NFPA rating:	HMIS rating:
Health:	0	0
Flammability:	0	0
Instability/reactivity:	0	0
Other:	N/A	N/A (PPE)



Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Keep unnecessary personnel away. For personal protection see Section 8.
Large Spill:	No data available.
Methods for Containment and Clean up	Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Avoid discharge into drains, water courses or onto the ground.

Section 7. HANDLING AND STORAGE

Handling:	Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe the dust.
Storage:	Keep containers closed after use. Store away from incompatible materials.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

Name	CAS No.	ACGIH® TLV® Exposure Limits:	Federal OSHA PELs	OSHA PELs 1989 ^c
Limestone	1317-65-3	N/A	N/A	N/A
Crystalline Silica	14808-60-7	N/A	N/A	N/A

All exposure limits listed are 8-hour time weighted average (TWA) — except where noted otherwise.

^A Time Weighted Average (TWA) is an average exposure over the course of an 8-hour work shift.

^B A Short Term Exposure Limit TWA over the course of 15 minutes.

PEL — Permissible Exposure Limit is the maximum 8-hour TWA concentration of a chemical that a worker may be exposed to under Occupational Safety and Health Administration (OSHA) regulations.

^C Federal OSHA 1989 PELs were vacated but are in use and enforced by many state OSHA plans.

Engineering measures: Good ventilation.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit.

Skin and body protection: Wear protective gloves and synthetic apron or standard work clothes.

Eye protection: Wear safety spectacles with side shields, face shield or goggles.

Hygiene measures: Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove contaminated clothing and launder before reuse.

Other precautions: N/A

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Cream
Physical state (solid/liquid/gas):	Putty
Substance type (pure/mixture):	Mixture
Color:	Cream
Odor:	Slight
Molecular weight:	Not Available
pH:	Not Applicable
Boiling point/range (5-95%):	Not Available
Melting point/range:	Not Available
Decomposition temperature:	Not Available
Specific gravity:	Not Available
Vapor density:	>1(AIR = 1)
Vapor pressure:	Not available
Evaporation rate (Butyl acetate= 1):	<1
Flash point, method used:	>212°F (> 100.0°C)
Water solubility:	Insoluble
VOC Content:	20 grams/liter
Auto-ignition temperature:	Not Available
Flammable limits in air — lower (%):	2.0
Flammable limits in air — upper (%):	Not Available

Section 10. STABILITY AND REACTIVITY

Reactivity:	No data available
Stability:	Stable under recommended storage conditions.
Possibly hazardous reactions:	No data available
Conditions to avoid:	Contact with incompatible materials.
Incompatible Materials:	Acids. Flourine.
Hazardous decomposition products:	None known.
Polymerization:	Will not occur.

Section 11. TOXICOLOGICAL INFORMATION

Acute toxicity: Not available

Product information:

Name	CAS No.	Inhalation:	Dermal:	Oral:
Limestone	1317-65-3	N/A	N/A	N/A
Crystalline Silica	14808-60-7	N/A	N/A	NA

Chronic toxicity: Not available.

Carcinogenicity: In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibers, 1997, Vol. 68, IARC, Lyon, France.) Risk of cancer cannot be excluded with prolonged exposure.

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity effects:	None
Persistence	None
Degradability:	Not available.

Section 13. DISPOSAL CONSIDERATIONS

Cleanup considerations: Disposal of this material must be done in accordance with federal, state and/or local regulations.

Section 14. TRANSPORT INFORMATION

Not regulated as a dangerous good by DOT, IATA and IMDG.

Section 15. REGULATORY INFORMATION

US Federal Regulations:

This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Crystalline silica (Quartz) (CAS 14808-60-7)

Limestone (CAS 1317-65-3)

US. New Jersey Worker and Community Right-to-Know Act

Crystalline silica (Quartz) (CAS 14808-60-7)

Limestone (CAS 1317-65-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Crystalline silica (Quartz) (CAS 14808-60-7)

Limestone (CAS 1317-65-3)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Crystalline silica (Quartz) (CAS 14808-60-7)

Section 16. OTHER INFORMATION

The information and recommendations contained herein are based upon tests, data, and information resources believed to be reliable. However, the J.C. Whitlam Manufacturing Company, Inc., and its related operations or divisions (Whitlam) do not guarantee the accuracy or completeness, nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of goods, the merchantability of the goods or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage may be required. Whitlam assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of this data. No warranty against infringement of any patent, copyright or trademark is made or implied.

Johns-Manville

Section 1 - Product and Company Identification**Hazard Label** WARNING label**Company Information**Johns Manville
Insulation Systems
P.O. Box 5108
Denver, CO 80127 USATelephone: 303-978-2000 8:00AM-5:00PM M-F
Internet Address: <http://www.jm.com>
Emergency: 800-424-9300 (Chemtrec, In English)**Trade Names:**800 Series Spin Glas® Board, unfaced
1000 Series Spin Glas® Board
Duct Liner PM
Blended Blowing Wool
Fabrication Board
Hullboard (Incombustible)
Hullinsul® Fiber Glass Board
Incombustible Microlite®Insul-SHIELD® Coated Black
Linacoustic® RC
Micromat Rx™
Permacote® Linacoustic® (Types: Standard, HP and R-300)
Precipitator Spin Glas®
Spin Glas® HTB 26 & 23
R Series Microlite® (Plain)
Spin Glas® HTB 26 & 23**Use:** Lining sheet metal ducts in AC, heating and ventilation systems**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	0-12
Not Applicable	Fiber Glass Wool	65-85
Not Available	Urea extended phenol-formaldehyde binder (cured)	10-18
NA	Acrylic Coating	0-10
1333-86-4	Carbon black, bound (present in black products only)	<1

50-00-0	Formaldehyde	<1

Component Information

Formaldehyde may be released by partial hydrolysis of the urea formaldehyde polymer.

General Product Description

Fibrous glass blankets or boards with glass mat facing or coating.

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.

Method Used: Not applicable

Lower Flammable Limit (LFL): Not applicable

Flammability Classification: Not determined

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

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.

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 blankets or boards with glass mat facing or coating with glass mat facing.

Odor: Mild resin odor

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

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). OSHA specifically regulates formaldehyde under 29 CFR 1910.1048.

B: Component Carcinogenicity**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 Cause Cancer

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])

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: 24.1 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 0.10 mg/L [flow-through]; 96 Hr LC50 Brachydanio rerio: 41 mg/L [static]

5 min EC50 Photobacterium phosphoreum: 9.0 mg/L; 15 min EC50 Photobacterium phosphoreum: 7.26 mg/L; 25 min EC50 Photobacterium phosphoreum: 6.81 mg/L; 30 min EC50 Photobacterium phosphoreum: 16.5 mg/L; 1 Hr EC50 Vibrio harveyi: 1.2 mg/L; 5 Hr EC50 Vibrio harveyi: 3.7 mg/L; 72 Hr EC50 Colpoda aspera: 5.39 mg/L
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

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

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.

WARNING: This product contains a substance known to the state of California to cause cancer: Methyl Carbamate (trace) 598-55-0 present in mat facer

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
Fiber Glass Wool (¹related to Glass, fibrous or dust) (²related to Fibrous glass)	Not Applicable	Yes¹	No	Yes²	No	Yes²	Yes²
Fiber Glass Wool (¹related to Mineral wool fiber) (²related to Fibrous glass)	Not Applicable	Yes¹	No	Yes¹	Yes	Yes²	Yes¹
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

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.

A: TSCA Status

This product and its components are listed on the TSCA 8(b) inventory.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Fiber Glass Wool	Not Applicable	No	No	No
Fiber Glass Wool	Not Applicable	Yes	Yes	Yes
Formaldehyde	50-00-0	Yes	Yes	Yes
Carbon black, bound (present in black products only)	1333-86-4	Yes	Yes	Yes

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
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
09/30/08	1077-1.0000	New SDS for new product.
09/3/2011	1077-1.0001	Regulatory update.
01/11/2013	1077-1.0002	Trade name and toxicological update in section 11.

End of Sheet 1077

J.T. Baker

MSDS Number: **A2844** * * * * * Effective Date: **04/02/07** * * * * * Supersedes: **08/10/04**

MSDS**Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. And Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance

ALUMINUM OXIDE

1. Product Identification

Synonyms: AluminAR® CC-10; Aluminum oxide; Alumina; activated Alumina; alpha-Alumina

CAS No.: 1344-28-1

Molecular Weight: 101.96

Chemical Formula: Al₂O₃ (contains about 11-12% bound water)

Product Codes: 0536, 0537, 0538, 0539, 0540

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Aluminum Oxide	1344-28-1	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate

Flammability Rating: 0 - None

Reactivity Rating: 0 - None

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:

Hazard is principally that of a nuisance dust. Coughing or shortness of breath may occur in cases of excessive inhalation.

Ingestion:

No adverse effects expected.

Skin Contact:

May cause irritation with redness and pain.

Eye Contact:

No adverse effects expected but dust may cause mechanical irritation.

Chronic Exposure:

No adverse effects expected.

Aggravation of Pre-existing Conditions:

Not expected to be a health hazard.

4. First Aid Measures

Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

5. Fire Fighting Measures

Fire:

Not considered to be a fire hazard.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire.

Special Information:

Use protective clothing and breathing equipment appropriate for the surrounding fire and to protect against the aluminum oxide dust that may be dispersed in the air.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

Alumina (Aluminum Oxide):

-OSHA Permissible Exposure Limit (PEL):

alpha alumina, 15 mg/m³ total dust, 5 mg/m³ respirable fraction

-ACGIH Threshold Limit Value (TLV):

aluminum oxide, 10 mg/m³ (TWA) inhalable (total) particulate matter containing no asbestos and < 1% crystalline silica, A4

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles

(e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

White powder.

Odor:

Odorless.

Solubility:

Insoluble in water.

Density:

4.0 @ 20C/4C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

2980C (5396F)

Melting Point:

ca. 2000C (ca. 3632F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

No information found.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Chlorine trifluoride, Ethylene oxide.

Conditions to Avoid:

Incompatibles.

11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure. Investigated as a tumorigen.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	

Aluminum Oxide (1344-28-1)	No	No	None

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia

Aluminum Oxide (1344-28-1)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----				
--Canada--				

Ingredient	Korea	DSL	NDSL	Phil.
Aluminum Oxide (1344-28-1)	Yes	Yes	No	Yes
-----\Federal, State & International Regulations - Part 1\-----				
	-SARA 302-		-SARA 313-	
Ingredient	RQ	TPQ	List	Chemical Catg.
Aluminum Oxide (1344-28-1)	No	No	Yes	No
-----\Federal, State & International Regulations - Part 2\-----				
		-RCRA-	-TSCA-	
Ingredient	CERCLA	261.33	8 (d)	
Aluminum Oxide (1344-28-1)	No	No	No	

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
 Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 0 Reactivity: 0

Label Hazard Warning:

CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Label Precautions:

Use with adequate ventilation.

Keep container closed.

Avoid breathing dust.

Wash thoroughly after handling.

Avoid contact with eyes, skin and clothing.

Label First Aid:

If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 3.

Disclaimer:

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

MATERIAL SAFETY DATA SHEET

HMIS CODES:

H	F	R	P
0	0	0	E

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administrator
(Non-Mandatory Form)
Form Approved OMB No. 1218-0072

IDENTITY (AS USED ON LABEL AND LIST):

OPEN MESH CLOTH

OM

NOTE: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name:

J.C. WHITLAM MANUFACTURING COMPANY

Emergency Telephone Number:

(330) 334 - 2524

Address (Number, Street, City, State, and ZIP Code):

200 WEST WALNUT STREET

Telephone Number for Information:

(330) 334 - 2524

P.O. BOX 380

Date Prepared: November 1, 2005

WADSWORTH, OHIO 44282-0380

Signature of Preparer (optional):

Section II - Hazardous Ingredients/Identity Information

HAZARDOUS COMPONENTS

(SPECIFIC CHEMICAL IDENTITY: COMMON NAME(S))

OSHA
PEL

ACGIH
TLV

OTHER LIMITS
Recommended

%
(optional)

ALUMINUM OXIDE [CAS#07-429-90-5]

15 mg/m³

N/A

N/A

Section III - Physical/Chemical Characteristics

Boiling Point:

N/A

Specific Gravity (H₂O = 1):

N/A

Vapor Pressure (mm Hg):

N/A

Melting Point:

N/A

Vapor Density (AIR = 1):

N/A

Evaporation Rate (Butyl Acetate = 1):

N/A

Solubility in Water: N/A

Appearance and Odor:

CLOTH PAPER FIBER COATED WITH ABRASIVE MINERAL GRAIN. SOME SLIGHT ODOR OF DRY, CURED ADHESIVE.

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used): N/A

Flammable Limits:

LEL:

N/A

UEL:

N/A

Extinguishing Media: ANY

Special Fire Fighting Procedures: USE RESPIRATORY PROTECTION.

Unusual Fire and Explosion Hazards:

COMBUSTION PRODUCTS MAY BE TOXIC IN RESTRICTED NON-VENTILATED ENCLOSURES. NO EXPLOSION HAZARD WILL OCCUR.

Section V - Reactivity Data		OPEN MESH CLOTH		OM
Stability:	Unstable:		Conditions to Avoid: N/A	
	Stable:	X		
Incompatibility (Materials to Avoid):				
Hazardous Decomposition or Byproducts:				
Hazardous Polymerization:	May Occur:		Conditions to Avoid: N/A	
	Will Not Occur:	X		
Section VI - Health Hazard Data				
Route(s) of Entry:	Inhalation? YES	Skin? YES	Ingestion? N/A	
Health Hazards (Acute and Chronic): BREATHING DIFFICULTIES; SKIN ABRASION; EYE IRRITATION.				
Carcinogenicity:	NTP? NO	IARC Monographs? NO	OSHA Regulated? NO	
Signs and Symptoms of Exposure: N/A				
Medical Conditions Generally Aggravated by Exposure: N/A				
Emergency and First Aid Procedures: FOR BREATHING DIFFICULTIES MOVE TO FRESH AIR; FOR SKIN ABRASION USE GENERAL FIRST AID; FOR EYE IRRITATION WASH WITH WARM WATER.				
Section VII - Precautions for Safe Handling and Use				
Steps to Be Taken in Case Material is Released or Spilled: NORMAL CLEANUP PROCEDURES APPLY.				
Waste Disposal Method: STANDARD LANDFILL CONSISTENT WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.				
Precautions to Be Taken in Handling and Storing: PROVIDE GOOD VENTILATION.				
Other Precautions: N/A				
Section VIII - Control Measures				
Respiratory Protection (Specify Type): AS NEEDED; APPROVED DUST RESPIRATOR.				
Ventilation:	Local Exhaust: YES		Special: N/A	
	Mechanical (General): YES		Other: SUCTION-TYPE DUST REMOVAL	
Protective Gloves: AS REQUIRED BY USER.		Eye Protection: SAFETY GOGGLES.		
Other Protective Clothing or Equipment: AS DESIRED BY USER.				
Work/Hygienic Practices: N/A				

MATERIAL SAFETY DATA SHEET

HMIS CODES:

H	F	R	P
0	0	0	E

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administrator
(Non-Mandatory Form)
Form Approved OMB No. 1218-0072

IDENTITY (AS USED ON LABEL AND LIST):

SAND CLOTH

JAO

NOTE: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name:

J.C. WHITLAM MANUFACTURING COMPANY

Emergency Telephone Number:

(330) 334 - 2524

Address (Number, Street, City, State, and ZIP Code):

200 WEST WALNUT STREET

Telephone Number for Information:

(330) 334 - 2524

P.O. BOX 380

Date Prepared: November 1, 2005

WADSWORTH, OHIO 44282-0380

Signature of Preparer (optional):

Section II - Hazardous Ingredients/Identity Information

HAZARDOUS COMPONENTS

(SPECIFIC CHEMICAL IDENTITY: COMMON NAME(S))

OSHA
PEL

ACGIH
TLV

OTHER LIMITS
Recommended

%
(optional)

ALUMINUM OXIDE [CAS#1344-28-1]

15 mg/m³

N/A

N/A

Section III - Physical/Chemical Characteristics

Boiling Point:

N/A

Specific Gravity (H₂O = 1):

N/A

Vapor Pressure (mm Hg):

N/A

Melting Point:

N/A

Vapor Density (AIR = 1):

N/A

Evaporation Rate (Butyl Acetate = 1):

N/A

Solubility in Water: N/A

Appearance and Odor:

CLOTH PAPER FIBER COATED WITH ABRASIVE MINERAL GRAIN. SOME SLIGHT ODOR OF DRY, CURED ADHESIVE.

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used):

N/A

Flammable Limits:

LEL:

N/A

UEL:

N/A

Extinguishing Media: ANY

Special Fire Fighting Procedures: USE RESPIRATORY PROTECTION.

Unusual Fire and Explosion Hazards:

COMBUSTION PRODUCTS MAY BE TOXIC IN RESTRICTED NON-VENTILATED ENCLOSURES.

Section V - Reactivity Data		SAND CLOTH		JAO
Stability:	Unstable:		Conditions to Avoid: N/A	
	Stable:	X		
Incompatibility (Materials to Avoid):				
Hazardous Decomposition or Byproducts:				
Hazardous Polymerization:	May Occur:		Conditions to Avoid: N/A	
	Will Not Occur:	X		
Section VI - Health Hazard Data				
Route(s) of Entry:	Inhalation? YES	Skin? YES	Ingestion? N/A	
Health Hazards (Acute and Chronic): BREATHING DIFFICULTIES; SKIN ABRASION; EYE IRRITATION.				
Carcinogenicity:	NTP? NO	IARC Monographs? NO	OSHA Regulated? NO	
Signs and Symptoms of Exposure: N/A				
Medical Conditions Generally Aggravated by Exposure: N/A				
Emergency and First Aid Procedures: FOR BREATHING DIFFICULTIES MOVE TO FRESH AIR; FOR SKIN ABRASION USE GENERAL FIRST AID; FOR EYE IRRITATION WASH WITH WARM WATER.				
Section VII - Precautions for Safe Handling and Use				
Steps to Be Taken in Case Material is Released or Spilled: N/A				
Waste Disposal Method: STANDARD LANDFILL CONSISTENT WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.				
Precautions to Be Taken in Handling and Storing: PROVIDE GOOD VENTILATION.				
Other Precautions: N/A				
Section VIII - Control Measures				
Respiratory Protection (Specify Type): AS NEEDED; APPROVED DUST RESPIRATOR.				
Ventilation:	Local Exhaust: YES		Special: N/A	
	Mechanical (General): YES		Other: SUCTION-TYPE DUST REMOVAL	
Protective Gloves: AS DESIRED BY USER		Eye Protection: SAFETY GOGGLES		
Other Protective Clothing or Equipment: AS DESIRED BY USER				
Work/Hygienic Practices: N/A				

MATERIAL SAFETY DATA SHEET

HMIS CODES:

H	F	R	P
0	0	0	E

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administrator
(Non-Mandatory Form)
Form Approved OMB No. 1218-0072

IDENTITY (AS USED ON LABEL AND LIST):

SAND CLOTH

WP

NOTE: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name:

J.C. WHITLAM MANUFACTURING COMPANY

Emergency Telephone Number:

(330) 334 - 2524

Address (Number, Street, City, State, and ZIP Code):
200 WEST WALNUT STREET

Telephone Number for Information:

(330) 334 - 2524

P.O. BOX 380

Date Prepared: November 1, 2005

WADSWORTH, OHIO 44282-0380

Signature of Preparer (optional):

Section II - Hazardous Ingredients/Identity Information

HAZARDOUS COMPONENTS

(SPECIFIC CHEMICAL IDENTITY: COMMON NAME(S))

OSHA
PEL

ACGIH
TLV

OTHER LIMITS
Recommended

%
(optional)

ALUMINUM OXIDE [CAS#1344-28-1]

15 mg/m³

N/A

N/A

Section III - Physical/Chemical Characteristics

Boiling Point:

N/A

Specific Gravity (H₂O = 1):

N/A

Vapor Pressure (mm Hg):

N/A

Melting Point:

N/A

Vapor Density (AIR = 1):

N/A

Evaporation Rate (Butyl Acetate = 1):

N/A

Solubility in Water: N/A

Appearance and Odor:

CLOTH PAPER FIBER COATED WITH ABRASIVE MINERAL GRAIN. SOME SLIGHT ODOR OF DRY, CURED ADHESIVE.

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used):

N/A

Flammable Limits:

LEL:

N/A

UEL:

N/A

Extinguishing Media: ANY

Special Fire Fighting Procedures: USE RESPIRATORY PROTECTION.

Unusual Fire and Explosion Hazards:

COMBUSTION PRODUCTS MAY BE TOXIC IN RESTRICTED NON-VENTILATED ENCLOSURES.

Section V - Reactivity Data		SAND CLOTH		WP
Stability:	Unstable:		Conditions to Avoid: N/A	
	Stable:	X		
Incompatibility (Materials to Avoid):				
Hazardous Decomposition or Byproducts:				
Hazardous Polymerization:	May Occur:		Conditions to Avoid: N/A	
	Will Not Occur:	X		
Section VI - Health Hazard Data				
Route(s) of Entry:	Inhalation? YES	Skin? YES	Ingestion? N/A	
Health Hazards (Acute and Chronic): BREATHING DIFFICULTIES; SKIN ABRASION; EYE IRRITATION.				
Carcinogenicity:	NTP? NO	IARC Monographs? NO	OSHA Regulated? NO	
Signs and Symptoms of Exposure: N/A				
Medical Conditions Generally Aggravated by Exposure: N/A				
Emergency and First Aid Procedures: FOR BREATHING DIFFICULTIES MOVE TO FRESH AIR; FOR SKIN ABRASION USE GENERAL FIRST AID; FOR EYE IRRITATION WASH WITH WARM WATER.				
Section VII - Precautions for Safe Handling and Use				
Steps to Be Taken in Case Material is Released or Spilled: N/A				
Waste Disposal Method: STANDARD LANDFILL CONSISTENT WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.				
Precautions to Be Taken in Handling and Storing: PROVIDE GOOD VENTILATION.				
Other Precautions: N/A				
Section VIII - Control Measures				
Respiratory Protection (Specify Type): AS NEEDED; APPROVED DUST RESPIRATOR.				
Ventilation:	Local Exhaust: YES		Special: N/A	
	Mechanical (General): YES		Other: SUCTION-TYPE DUST REMOVAL	
Protective Gloves: AS DESIRED BY USER		Eye Protection: SAFETY GOGGLES		
Other Protective Clothing or Equipment: AS DESIRED BY USER				
Work/Hygienic Practices: N/A				

La-Co

Duct Tape

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)
Date of issue: 03/05/2015
Version: 1.0

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

1.1. Product identifier

Product form : Article
Trade name : Duct Tape

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Tape

1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.
1201 Pratt Boulevard
Elk Grove Village, IL. 60007-5746
Phone: (847) 956-7600
Fax: (847) 956-9885
E-mail: customer_service@laco.com



1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

This product meets the definition of an "Article".

2.2. Label elements

GHS-US labelling

No labelling applicable

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

No hazardous components.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Not expected to require first aid measures.

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

Symptoms/injuries : No significant signs or symptoms indicative of any health hazard are expected to occur.

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

No special procedures required.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : None known.

Duct Tape

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

5.2. Special hazards arising from the substance or mixture

Fire hazard : No particular fire or explosion hazard.
Reactivity : No dangerous reactions known.

5.3. Advice for firefighters

Firefighting instructions : Do not allow run-off from fire fighting to enter drains or water courses. Exercise caution when fighting any chemical fire.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : This product is not hazardous.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Contains no substances known to be hazardous to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain and collect as any solid.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling temperature : Not applicable

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Protect from moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Duct Tape	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Appropriate engineering controls : No special work practices are needed beyond the above recommendations under anticipated conditions of normal use.
Hand protection : None under normal use.
Eye protection : No special eye protection equipment recommended under normal conditions of use.
Respiratory protection : No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Colour : Silver.
Odour : No data available
Odour threshold : No data available

Duct Tape

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

VOC content : 0 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable under normal conditions.

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

No dangerous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms

Likely routes of exposure : Dermal

Duct Tape

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

SECTION 12: Ecological information

12.1 Toxicity

No additional information available

12.2 Persistence and degradability

No additional information available

12.3 Bioaccumulative potential

No additional information available

12.4 Mobility in soil

No additional information available

12.5 Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations : Place contaminated materials in disposable containers.

SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR) : Not applicable

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Indication of changes : Original Document.

Data sources : OSHA 29CFR 1910.1200 Hazard Communication Standard.
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Duct Tape

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

NFPA health hazard

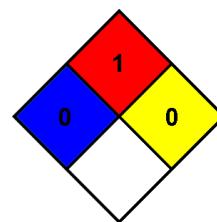
: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



SDS Prepared by: The Redstone Group, LLC
6397 Emerald Pkwy.
Suite 200
Dublin, OH USA 43016
T 614-923-7472
www.redstonegrp.com

LACO NA GHS SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Material Safety Data Sheet

Section 1 Product and Company Identification

Product Name:

**Slic-Tite® PTFE Thread Tape,
PTFE Thread Seal Tape**

Revision #: 2.4

Date Prepared: June 27, 1990

Date Revised: February 19, 2013

Manufacturer:

LA-CO INDUSTRIES, Inc. *Markal Co.*

1201 Pratt Blvd.

Elk Grove Village, IL, USA 60007-5746

Information Telephone: 847-956-7600

Emergency Telephone: Call CHEMTREC

USA 800-424-9300

International (Call Collect) 1-703-527-3887

Chemical Formula: Mixture

CAS No.: Not Applicable. Derivation: Not Applicable.

Synonyms: Not Applicable.

General Use: Pipe Thread Sealant

Supplier/Importer:

Section 2 Composition/Information on Ingredients

Ingredient

CAS No.

%

No Hazardous ingredients according to the U.S. OSHA Hazard Communication Standard 29 CFR 1910.1200, Canadian WHMIS regulations, British CHIP2 regulation 6, and Australian Regulations for the Control of Workplace Hazardous Substances.

(For Section 2 footnotes: See Section 15)

Section 3 Hazards Identification

EMERGENCY OVERVIEW: None.

POTENTIAL HEALTH EFFECTS

Primary Exposure Routes: None.

Acute Effects

Eyes: Not Applicable.

Skin: Not Applicable.

Ingestion: Not Applicable.

Inhalation: Not Applicable.

Chronic Effects

Eyes: Not Applicable.

Skin: Not Applicable.

Ingestion: Not Applicable.

Inhalation: Not Applicable.

Carcinogenicity: Not Applicable.

Target Organ Effects: Not Applicable.

Medical Conditions Aggravated by Long-Term Exposure: Not Determined.

Other Information: Not Applicable.

Section 4

First Aid

Product Name:

**Slic-Tite® PTFE Thread Tape,
PTFE Thread Seal Tape**

Revision #: 2.4

Date Prepared: June 27, 1990

Date Revised: February 19, 2013

Eye Contact: Not Applicable.

Skin Contact: Not Applicable.

Ingestion: Not Applicable.

Inhalation: Not Applicable.

Other Information: None Known.

Section 5 Fire Fighting Measures

Flash Point (method): Not Applicable.

Autoignition Temperature: Not Applicable.

LEL: Not Applicable. **UEL:** Not Applicable.

Flammability Classification: Not Applicable.

Extinguishing Media: Not Applicable.

Hazardous Combustion Products: PTFE will decompose forming hydrogen fluoride at high temperatures.

Unusual Fire or Explosion Hazards: None Known.

Fire-Fighting Instructions/Equipment: Keep personnel removed and upwind of any fire. Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

Section 6 Accidental Release Measures

Use recommended personal protective equipment (see Section 8). Sweep up.

Section 7 Handling and Storage

Handling Precautions: Use recommended personal protective equipment (see Section 8). Wash thoroughly after handling.

Storage Requirements: Store away from incompatible chemicals (see Sec. 10).

Section 8 Exposure Controls/Personal Protection

Eye/Face Protection: Suitable for related activities where this product is used.

Skin/Hand Protection: Suitable for related activities where this product is used.

Respiratory Protection: Suitable for related activities where this product is used.

Other Equipment: Suitable for related activities where this product is used.

Engineering Controls: Suitable for related activities where this product is used.

Administrative Controls: Users of this product must be properly trained and qualified in its use.

Other Information: No food or beverage should be consumed in the work area. Wash thoroughly before eating, drinking, or smoking.

Section 9 Physical and Chemical Properties

Appearance/Physical State: White tape.

Odor: None

Odor Threshold (ppm): Not Determined.

Specific Gravity (H₂O = 1): 2.15 - 2.20

Solubility - Water: Insoluble

- Fat: Insoluble

Product Name:

**Slic-Tite® PTFE Thread Tape,
PTFE Thread Seal Tape**

Revision #: 2.4

Date Prepared: June 27, 1990

Date Revised: February 19, 2013

Coefficient of Water/Oil Solubility: Not Determined.

Partition Coefficient (n-octanol/water): Not Determined.

pH: Not Applicable.

Melting Point: 621⁰F/327⁰C

Boiling Point: Not Determined.

Vapor Pressure (mm Hg at 20⁰C): Not Applicable.

Vapor Density (Air = 1): Not Applicable.

Evaporation Rate (n-BuAc=1): Not Applicable.

V.O.C. (U.S. Clean Air Act Section 111): 0%

Flash Point (method): (see Section 5)

Autoignition Temperature: (see Section 5)

Flammability Classification: (see Section 5)

Unusual Fire or Explosion Hazards: (see Section 5)

Oxidizing Properties: Not Applicable.

Other Information: None.

Note: The physical data represented above are typical values and should not be construed as a specification.

Section 10

Stability and Reactivity

Chemical Stability: Stable

Hazardous Polymerization: Will Not Occur

Conditions to Avoid: Temperatures above 750°F/400°C

Chemicals to Avoid: Not Determined.

Hazardous Decomposition Products (non-thermal): None Known.

Section 11

Toxicological Information

Sensitization to Product: Not Applicable.

Irritancy of Product: Not Applicable.

Reproductive Toxicity: Not Applicable.

Teratogenicity: Not Applicable.

Mutagenicity: Not Applicable.

Further hazard information, if applicable, may be found in Section 3. Toxicological information regarding individual ingredients, if applicable, may be found in Section 2.

Section 12

Ecological Information

Mobility: Not Determined.

Ecotoxicity: Not Determined.

Degradability: Not Determined.

Other Adverse Effects: Not Determined.

Accumulation: Not Determined.

Section 13

Disposal Considerations

Dispose of in accordance with all applicable regulations.

Section 14

Transport Information

Product Name:

**Slic-Tite® PTFE Thread Tape,
PTFE Thread Seal Tape**

Revision #: 2.4

Date Prepared: June 27, 1990

Date Revised: February 19, 2013

D.O.T. (U.S.)

Proper Shipping Name: Not Regulated.

Hazard Class or Division: Not Regulated.

Hazard Label: Not Regulated.

I.D. Number: Not Regulated.

TDG (Canada): Not Regulated.

IATA: Not Regulated.

ICAO: Not Regulated.

IMO: Not Regulated.

Australian Code for the Transport of Dangerous Goods

Dangerous Goods Class and Subsidiary Risk: Not Regulated.

Section 15

Regulatory Information

Footnotes for Section 2:

- 1 Subject to the reporting requirements of SARA Title III, Section 313.
- 2 Appears on the California Safe Drinking Water and Toxic Enforcement Act (Prop. 65) Substances List.
- 3 Appears on the Massachusetts Substances List.
- 4 Appears on the New Jersey Right-To-Know Hazardous Substances List.
- 5 Appears on the Pennsylvania Hazardous Substances List.
- 6 Appears on the Canadian WHMIS Ingredient Disclosure List.

U.S.A.

OSHA Hazard Status: This product is not considered to be hazardous as defined by the U.S. OSHA HCS (29 CFR 1910.1200).

EPA SARA sec. 311/312 Hazard Categories: Not Applicable.

Toxic Substances Control Act (TSCA): All ingredients contained in this product are listed on the U.S. EPA TSCA Chemical Substance Inventory.

HMIS Rating: Health 0, Flammability 1, Reactivity 0

NFPA (704) Rating: Health 1, Flammability 1, Reactivity 0

CANADA

WHMIS Status: This product is not considered to be hazardous as defined by Canadian WHMIS Controlled Products Regulations.

WHMIS Rating: None.

WHMIS Risk Phrases: None.

WHMIS Precautionary Statements: None.

Domestic Substances List (DSL): All ingredients contained in this product are listed on the Canadian EPA (CEPA) Domestic Substances List (DSL).

E.U.

European Inventory of Existing Chemical Substances (EINECS): All ingredients contained in this product are listed on the European Inventory of Existing Chemical Substances (EINECS).

Categories of Danger (Labeling Information): None.

Risk (R) Phrases: None.

Safety (S) Phrases: None.

AUSTRALIA

Worksafe Australia Status: This product is not classified as hazardous according to criteria of Worksafe Australia.

HAZCHEM Code: None allocated.

Poisons Schedule Number: None allocated.

Product Name:

**Slic-Tite® PTFE Thread Tape,
PTFE Thread Seal Tape**

Revision #: 2.4

Date Prepared: June 27, 1990

Date Revised: February 19, 2013

Further regulatory information regarding individual ingredients, if applicable, may be found in Section 2.

This product has been classified in accordance with the hazard criteria of the U.S. OSHA Hazard Communication Standard, the Canadian WHMIS Controlled Products Regulations, the British CHIP2 regulation 6, and the Australian NMRCWHS. This MSDS contains the information required by the above regulations and conforms to ANSI Z400.1-1993.

Section 16

Other Information

MSDS Prepared By: Director of Chemical Safety

The information contained herein is based on data available to us and is accurate and reliable to the best of our knowledge and belief. However, LA-CO Industries, Inc. makes no representations as to its completeness or accuracy. Information is supplied on condition that persons receiving such information will make their own determination as to its suitability for their purposes prior to use. In no event will LA-CO Industries, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information contained herein.

Metacaulk

The logo for RectorSeal, featuring the brand name in a bold, sans-serif font. The 'R' is stylized with a horizontal bar extending to the left. The text is black and set within a white rectangular border that has a slight 3D effect with a shadow on the right side.

SAFETY DATA SHEET

METACAULK® 1000

Intumescent, water-based firestop sealant

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Metacaulk® 1000 Intumescent Firestop Sealant

Product Codes

66640, 66242, 66302, 66303, 66305, 66307, 66309, 66312

Chemical Family

Organic/Inorganic

Use

Firestopping sealant

Manufacturer's Name

The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

Date of Validation

August 21, 2017

Date of Preparation

August 21, 2017

HMIS Codes

Health	1
Flammability	0
Reactivity	0
PPI	B

Emergency Telephone No.

Chemtrec 24 Hours
(800)-424-9300 USA
(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Physical Hazards:

None

Health Hazards

Acute Toxicity:

Oral: Not Classified
Dermal: Not Classified
Inhalation: Not Classified
Skin Corrosion/Irritation: Not Classified
Serious Eye Damage/Eye Irritation: Not Classified
Respiratory or Skin Sensitization: Not Classified
Germ Cell Mutagenicity: Not Classified
Carcinogenicity: Not Classified
Reproductive Toxicology: Not Classified

Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment: Not Classified
Acute aquatic toxicity: Not Classified
Chronic aquatic toxicity: Not Classified
Bioaccumulation potential: Not Classified
Rapid degradability: Not Classified

GHS Label elements, including precautionary statements

Pictogram: None

Signal Word: None

Hazard Statements:
None

Precautionary Statements:
P102 - Keep out of reach of children.
P264 - Wash hands thoroughly after handling.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

LABELING SYMBOLS: None

RISK R-PHRASES: None

SAFETY S-PHRASES:
S2: Keep out of the reach of children.

Summary Of Acute Hazards

May cause skin irritation.

Route Of Exposure, Signs And Symptoms

INHALATION

Not a respiratory irritant.

EYE CONTACT

Contact may cause eye irritation.

SKIN CONTACT

Contact may cause skin irritation.

INGESTION

Possible irritation to mucous membranes of the mouth, throat, and stomach.

SUMMARY OF CHRONIC HAZARDS

None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with pre-existing skin conditions or chemical allergies may be more susceptible to contact effects of the cured elastomer.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS
None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.			

SECTION 4 – FIRST AID MEASURES

If inhaled:	Not a respiratory irritant.
If on skin:	Wash with soap and water. If irritation occurs, seek medical attention.
If in eyes:	Immediately flush with large amounts of water. If irritation occurs, seek medical attention.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

Unusual Fire And Explosion Hazards: Heat may build up and rupture closed containers.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Keep container closed and upright when not in use. To prevent freezing and possible rupture of container, do not store below 35°F.

Other Precautions: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues and vapors; treat as if full and observe all product precautions. Do not reuse empty containers.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection (Specify Type): None required.

Ventilation – Local Exhaust: N/A

Special: N/A

Mechanical (General): N/A

Other: N/A

Protective Gloves: None required.

Eye Protection: None required.

Other Protective Clothing Or Equipment: None required.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	212°F (100°C) @ 760mm Hg
Specific gravity (H ₂ O = 1):	1.25
Vapor pressure (mmHg):	17 @ 68°F (20°C)
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	> 1
Appearance/Odor:	Red paste/Mild odor
Solubility in water:	Soluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	< 1% or (< 10 g/L)
Flash point:	None
Lower explosion limit:	None
Upper explosion limit:	None

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: None.

Incompatibility (Materials To Avoid): None known.

Hazardous Decomposition Products: CO, CO₂ and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA Lister carcinogen.

Toxicology Data

Ingredient Name

None

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name: **None**

Food Chain Concentration Potential: N/A

Waterfowl Toxicity: N/A

BOD: N/A

Aquatic Toxicity: N/A

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with federal, state, and local regulation regarding pollution.

SECTION 14 – TRANSPORTATION INFORMATION

DOT: Non-regulated

Ocean (IMDG): Non-regulated

Air (IATA): Non-regulated

WHMIS (Canada): Non-regulated

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	None
SARA 313	N/A
TSCA Inventory	All components listed
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made.

Consult RectorSeal for further information: (713) 263-8001

National Refrigerants

SAFETY DATA SHEET

Refrigerant Gas R22 Recovered

Version 2

Revision Date: 08.08.2013



SAFETY DATA SHEET

REFRIGERANT GAS R22 RECOVERED

SECTION 1: IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

1.1. Product Identifier

Product name: REFRIGERANT GAS R22 RECOVERED
EC Number: 200-871-9
REACH Registration Number: Not Available
CAS Number: 75-45-6

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use: Refrigeration
Advised Against: No identified use advised against.

1.3. Details of the supplier of the safety data sheet

Company name:
National Refrigerants Ltd.
4 Watling Close
Sketchley Meadows Business Park
Hinckley LE10 3EZ
Tel: +44(0)1455 630790
Fax: +44(0) 1455 630791
Email: sds@nationalref.com

1.4. Emergency telephone number

Emergency Tel: +44(0) 1865 407333

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to Directives 67/548/EEC and 1999/45/EC: Dangerous to the environment. Dangerous to the ozone layer.

2.2. Label elements

Regulation (EC) No. 1272/2008



Signal Word: Warning
H-statements: H280: Contains gas under pressure; may explode if heated
H420: Harms public health and the environment by destroying ozone in the Upper atmosphere.

Directives 67/458/EEC or 1999/45/EC: Dangerous to the environment. Dangerous to the ozone layer.
Label elements under CHIP:



Risk phrases N: Dangerous to the Environment
R59: Dangerous for the ozone layer.

Safety phrases

SAFETY DATA SHEET

Refrigerant Gas R22 Recovered

Version 2

Revision Date: 08.08.2013



2.3. Other hazards

Asphyxiant in high concentrations.
Liquefied Gas, contact with liquid can cause freeze burns or frostbite.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

Hazardous Ingredients: Chlorodifluoromethane. HCFC22

EINECS	CAS	CHIP Classification	CLP Classification	Percent
200-871-9	75-45-6	N; R59;	Signal word: Warning H280; H420	100%

Full text of R-phrases and H-statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Skin contact: Rapid evaporation of liquid may cause frostbite. Take off all contaminated clothing immediately if not stuck to the skin. Flush area with lukewarm water. Do not use hot water. If frostbite has occurred call a physician.

Eye contact: Rapid evaporation of liquid in contact with the eye will damage it. Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion: This is not considered a potential route of exposure.

Inhalation: Remove from exposure, move to fresh air, and lie down. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.

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

Skin contact: Low exposure to liquid will cause redness and pain. High exposure to liquid will cause frostbite, blisters and severe pain.

Eye contact: Exposure to liquid will cause severe pain and cornea damage.

Ingestion: Not a route of exposure.

Inhalation: Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects. Other symptoms potentially related to misuse or inhalation abuse are: Anaesthetic effects, Light-headedness, dizziness, confusion, incoordination, drowsiness, unconsciousness, irregular heartbeat, with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting or weakness, Narcosis.

Delayed/immediate effects: May cause cardiac arrhythmia.
Skin contact may not give immediate symptoms of frostbite.

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

Immediate/special treatment: Do not give adrenaline or similar drugs.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding

SAFETY DATA SHEET

Refrigerant Gas R22 Recovered

Version 2

Revision Date: 08.08.2013



environment.
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Use water spray to cool cylinders/tanks in a fire.

5.2. Special hazards arising from the substance or mixture

Special hazards arising from the mixture Pressure build-up. Fire or intense heat may cause violent rupture of cylinders. Hazardous thermal decomposition products may form. They are: Carbon oxides, Hydrogen Fluoride, Hydrogen Chloride. Chlorinated & Fluorinated compounds. Exposure to decomposition products may be hazardous to health.

5.3. Advice for fire-fighters

Advice for fire-fighters: In event of a fire wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Evacuate personnel to safe areas. Ventilate area, especially low or enclosed places where heavy vapours might collect. Refer to protective measures listed in Sections 7 and 8.

6.2. Environmental precautions

Environmental precautions: Do not release into the environment. Treat according to local and national regulations.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Product evaporates.

6.4. Reference to other sections

Reference to other sections: For Handling and Storage see Section 7.
For Exposure Controls and Personal Protection see Section 8.
For Disposal Methods see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling requirements: Avoid breathing vapours or mist. Avoid contact with the skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see Section 8. Vapours are heavier than air and may spread along the floor.

Cylinder Handling: Do not drag, slide or roll cylinders.
Never attempt to lift cylinder by its valve or cap.
Use a check valve or trap in the discharge line to prevent back flow into the cylinder.
See General Safety & Handling Data.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, dry and well-ventilated area at temperatures not exceeding 52°C. Keep out of direct sunlight. Keep cylinders tightly closed. Protect from contamination.
See General Safety & Handling Data.

Suitable packaging: Store in original cylinders only.

7.3. Specific end use(s)

Specific end use(s) No data available.

SAFETY DATA SHEET

Refrigerant Gas R22 Recovered

Version 2

Revision Date: 08.08.2013



SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Hazardous ingredients:

CHLORODIFLUOROMETHANE HCFC22; EC No. 200-871-9; CAS No. 75-45-6

Workplace exposure limits

Type of limit value	8 hour TWA	15 min. STEL
OEL (European Union)	1000 ppm 3600 mg/m ³	None
OEL – TRGS900 (Germany)	3600 mg/m ³	None
OEL (Austria)	500 ppm 1800 mg/m ³	1000 ppm 3600 mg/m ³
OEL (USA/NIOSH)	1000 ppm 3500 mg/m ³	1250 ppm 4375 mg/m ³

Derived No Effect Level (DNEL):

No data available.

Predicted No Effect Concentrations (PNEC):

Value: 250 µg/l

Compartment: Water

Calculated value for information only cited from the European Union Risk Assessment Report (RAR) on Chlorodifluoromethane (2007) calculated on base of the toxicities in chapter 12.

Value: 416 µg/l

Compartment: sediment

Calculated value for information only cited from the European Union Risk Assessment Report (RAR) on Chlorodifluoromethane (2007) calculated on base of the toxicities in chapter 12.

Value: 239 µg/l

Compartment: Soil

Calculated value for information only cited from the European Union Risk Assessment Report (RAR) on Chlorodifluoromethane (2007) calculated on base of the toxicities in chapter 12.

8.2. Exposure controls

Engineering measures:

Ensure adequate ventilation, especially in confined areas. Local exhaust should be used when large amounts are released.

Respiratory protection:

For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing the oxygen available for breathing. Respiratory protection to comply with EN 137.

Hand protection:

Material: leather gloves

The suitability for specific workplace should be discussed with the producers of the protective gloves.

Eye protection:

Wear safety glasses or coverall chemical splash goggles. Eye protection should comply with EN 166 or ANSI Z87.1.

Wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Skin protection:

Wear suitable protective equipment. Wear as appropriate: impervious clothing.

Environmental:

Gas escapes to be kept to the minimum by engineering processes and operating methods.

SAFETY DATA SHEET

Refrigerant Gas R22 Recovered

Version 2

Revision Date: 08.08.2013



SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

State:	Liquefied gas.
Colour:	Colourless
Odour:	Ethereal: Poor warning properties at low concentrations.
Boiling Point/range:	-40.8°C
Flash Point:	Does not flash
Ignition Temperature:	Not applicable
Upper explosive limit/upper flammability limit:	Not applicable
Vapour pressure:	9081 hPa at 20°C
Liquid Density:	1.210 kg/dm ³ at 9Bar/20°C
Vapour Density:	0.0036 kg/dm ³ at 1Bar/20°C
Water solubility:	3625 mg/l at 20°C
Vapour Density (Air = 1)	3

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity:	The product decomposes on heating.

10.2. Chemical stability

Chemical stability:	The product is chemically stable

10.3. Possibility of hazardous reactions

Hazardous reactions:	Stable at normal temperatures and storage conditions.

10.4. Conditions to avoid

Conditions to avoid:	Heat, hot surfaces, flames.

10.5. Incompatible material

Materials to avoid:	Alkali metals, alkaline earth metals, powdered metals, powdered metal salts.

10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxico-kinetic, metabolism and distribution

Main exposure path by inhalation, only small < 2.7% but rapid absorbed amounts. On 4 hour inhalation by volunteers of 230 resp. 1810 mg/m³ a blood concentration proportional equilibrium is adjusted within one hour. The blood concentrations approached plateaus of 0.25 µg/l and 1.36 µg/l. The absorbed amount was relatively rapid elimination by exhalation in a three phase kinetic with half-lives of 18 sec, 12 min and 2.6 h. A small amount was excreted by the kidneys. Based on Fluoride measurements in urine only very low or no metabolism was deduced (0.1-1.06%). No bioaccumulation at all was observed by any study.

Acute toxicity:	Oral toxicity Not applicable
	Inhalation toxicity LC ₅₀ /rat/4 h: 220 000 ppm
	LC ₅₀ /mouse/2 h: 390 540 ppm

SAFETY DATA SHEET

Refrigerant Gas R22 Recovered

Version 2

Revision Date: 08.08.2013



Dermal toxicity
Not applicable.

Skin Irritation:

Rat
Classification: Not classified as a skin irritant.
Result: Redness/swelling.
Remarks: Belly skin, 10 sec spray application. As chlorodifluoromethane is a gas skin administration is not feasible. The information is based on liquefied gas.

Rabbit
Classification: Not classified as a skin irritant.
Result: Slight irritation.
Remarks: Polypropylene capsule of the liquefied gas. As chlorodifluoromethane is a gas skin administration is not feasible. The information is based on liquefied gas.

Eye Irritation:

Rabbit (albino)
Classification: Not classified as an eye irritant.
Result: Slight irritation.
Remarks: 5 – 10 sec exposure to liquefied gas. As chlorodifluoromethane is a gas eye administration is not feasible. The information is based on liquefied gas.

Inhalation Irritation:

Animal/human
No indication or case study available.

Sensitisation:

No evidence for skin and respiratory tract sensitising potential.

Sub-acute to chronic toxicity:

On 5h/day-5d/week-83/94 week-exposure of mice to 1, 1 000, 10 000 and 50 000 ppm no effects on mortality, body weight gain, haematology, biochemistry or histopathology were found. On 5h/day-5d/week-117/131 week exposure of rats to 0, 1 000, 10 000 and 50 000 ppm no clinical effects and no mortality, haematology or biochemistry were found. At the 50 000 ppm level decreases in body weight gain in males, and increased liver, kidney, adrenal and pituitary weights were found. Histologically non-neoplastic lesions were observed. In this study the No Observable Adverse Effect Concentration (NOAEC) was ascertained to 10 000 ppm.

Mutagenic effects:

Bacterial mutagenicity:	<i>Salmonella typhimurium</i>	Positive
Bacterial mutagenicity:	<i>Segizosaccharomyces pombe/cerevisiae</i>	Negative
HGPRT mutation induction:	<i>Chinese hamster cells</i>	Negative
Unscheduled DNA synthesis:	<i>Human EUE cell line</i>	Negative

In vivo studies on rats and mice showed no evidence of genotoxic activity.

Carcinogenic effects:

On 5h/day-5d/week-117/131 week-exposure of rats to 0, 1 000, 10 000, and 50 000 ppm a slight increase was found in the incidence of fibrosarcomas in male rats at 50 000 ppm. The same exposures of mice to 50 000 ppm showed no significant increase of benign or malignant tumours. The studies with male rats demonstrated a No Observable Adverse Effect Concentration (NOAEC) of 1 000 ppm.

Reproductively effects:

Repeated dose studies showed no significant changes in gonadal organ weights and on histopathological examinations on effect in male and female reproductive organs were observed. Also determination of follicle stimulating hormones (FSH) and luteining hormone (LH) in blood exhibited no significant difference between exposed and control animals.

In rabbit terogenicity assay no significant effects on dams and litters were seen in low (100 ppm) and high (5 000 ppm) exposure level groups. Three rat teratogenicity studies on 100 ppm to 20 000 ppm exposures showed no evidence of maternal or foetal toxicity. The No Observable Adverse Effect Concentration (NOAEC) for maternal and development toxicity were determined 10 000 ppm (two of three studies) and 20 000 ppm (third study).

In litters from rat dams exposed to 50 000 ppm a significant increase of anophthalmia and combined anophthalmia/microphthalmia was observed. By this study the No Observable Adverse Effect Concentration (NOAEC) for rat development toxicity was considered 1 000 ppm. This result may justify the classification of chlorodifluoromethane as "harmful for reproduction" cat 3 (R63).

SAFETY DATA SHEET

Refrigerant Gas R22 Recovered

Version 2

Revision Date: 08.08.2013



Experience from practice: Exposures were evaluated only for workers using chlorodifluoromethane as a refrigerant and as a chemical intermediate. In over 50 years of use only a few reports on adverse health effects due to accidental exposure to extremely high inhaled are known.

General Remarks: If used as intended and handled appropriately, experience and current information shows that the product doesn't cause any harmful effects to health.

Symptoms/routes of exposure

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

Aquatic toxicity: No durably damaging effects expected as chlorodifluoromethane rapidly partitions from water into air.

Effects on sewage plants: Concentrations in water or in sludge considered negligible and no effect on microorganisms expected. No inhibition effects observed at 180 and 400 mg/l on 24 hour exposure.

Toxicity to fish: LC₅₀/96 h Brachydanio rerio: 777 mg/l
Toxicity to Crustacean: EC₅₀/48 h Daphnia magna: 433 mg/l
Toxicity to Algae: EC₅₀/96 h Calculation: 250 mg/l
Predicted with the ECOSAR v0.99 program by read-across.

12.2. Persistence and degradability

Persistence and degradability: *Biotic degradation:* Not rapidly biodegradable/ 0% BOD after 28 days.
Abiotic degradation: Degradation initiated by reaction with hydroxyl radicals OH in troposphere, atmospheric lifetime 12 years/ half-life 8.3 years.

12.3. Bio accumulative potential

Bio-accumulative potential: No Experimental Bio concentration Factor (BCF) available. Estimation from the correlation equation

$${}_{10}\log BFC_{fish} = 0.85 \cdot {}_{10}\log P_{o/w} - 0.70$$

Using the distribution coefficient ${}_{10}\log P_{o/w} = 1.3$ leads to BCF=1.8 indication that Chlorodifluoromethane does not concentrate significantly in aquatic organisms.

12.4. 12.5. Results of PBT and vPvB assessment

PBT identification: No data available

12.6. Other adverse effects

Other adverse effects: Ozone Depleting Potential (ODP): 0.055 (CFC11 = 1)
Global Warming Potential (GWP): 1 900 (CO₂ =1)

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal operations: Do not allow product to be released into the environment.

Recovery Operations: Consult the manufacturer or supplier for information regarding recovery and recycling of the product. If recovery is not possible, incinerate at a licensed installation.

Disposal of packaging: De-gas and return cylinders to suppliers.

N.B. The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

SAFETY DATA SHEET

Refrigerant Gas R22 Recovered

Version 2

Revision Date: 08.08.2013



SECTION 14. TRANSPORT INFORMATION

14.1. ADR

UN Number: 1018
Proper Shipping Name: CHLORODIFLUOROMETHANE (R22)
Class/Division: 2.2
Tunnel Code: (C/E)
Hazard Identification Number: 20
Labelling ADR: 2.2
Further Information

14.2. IATA

UN Number: 1018
Proper Shipping Name: CHLORODIFLUOROMETHANE (R22)
Class/Division: 2.2
Hazard Identification Number: 20
Further Information

14.3. IMDG

UN Number: 1018
Proper Shipping Name: CHLORODIFLUOROMETHANE
Class/Division: 2.2
EmS: FC-SV
Marine Pollutant: No

SECTION 15. REGULATORY INFORMATION

15.1. Safety, health and environment regulations/legislation specific for the substance or mixture

15.2. Chemical Safety Assessment

A chemical safety assessment (CSA) according to part 14, par. 1 of Regulation (EC) no. 1907/2006 on Chlorodifluoromethane is not yet available.

16. OTHER INFORMATION

Other information: This safety sheet is prepared in accordance with Commission Regulation (EU) No. 453/2010.
* Indicates text in SDS which has changed since the last revision.

R-Phrases: N: Dangerous to the environment
R59: Dangerous to the ozone layer.

S-Phrases: S2: Keep out of reach of children
S9: Keep container in well-ventilated place.
S36/37: Wear suitable protective clothing and gloves
S23: Do not breathe gas.
S59: Refer to manufacturer/supplier information on recovery/recycling.

H-Statements: H280: Contains pressurised gas; may explode if heated.
H420: Harms public health and environment by destroying ozone in the upper atmosphere.

P-Statements: P102: Keep out of reach of children.
P273: Avoid release to the environment.
P304: IF INHALED:
P313: Get medical advice/attention.
P410: Protect from sunlight
P501: Dispose of contents/containers to controlled disposal

SAFETY DATA SHEET

Refrigerant Gas R22 Recovered

Version 2

Revision Date: 08.08.2013



Authorisation and/or use restrictions:

Controlled substance according to Regulation (EC) No. 1005/2009 on substances depleting the ozone layer (ODS). Manufacture, placing on the market and use is prohibited as of 01.01.2010 e.g. cooling liquids and foaming agents. On maintenance and servicing of existing equipment recycled Chlorodifluoromethane may be used until 31.12.2014. Exceptions from prohibition are manufacture, placing on the market and use as feedstock for chemical synthesis and R&D purposes.

Legal disclaimer: *National Refrigerants Ltd. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other methods of use of the product and of the information referred to herein are beyond the control of National Refrigerants Ltd. National Refrigerants Ltd. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.*

SAFETY DATA SHEET

Refrigerant Gas R22 Recovered

Version 2

Revision Date: 08.08.2013



GENERAL SAFETY & HANDLING DATA

1. GENERAL

Only trained persons should handle compressed gases. Observe all regulations and local requirements regarding the storage of Cylinders. Do not remove or deface labels provided by the supplier for the identification of the Cylinder contents. Ascertain the identity of the gas before using it. Know and understand the properties and hazards associated with each gas before using it. When doubt exists as to the correct handling procedure for a particular gas contact the supplier.

HANDLING AND USE

Wear stout gloves. Never lift a Cylinder by the cap or guard unless the supplier states it is designed for that purpose. Use trolley or other suitable device or technique for transporting heavy Cylinders, even for a short distance. Where necessary wear suitable eye and face protection. The choice between safety glasses, chemical goggles, or full face shield will depend on the pressure and nature of the gas being used,

Where necessary for toxic gases see that self-contained positive pressure breathing apparatus or full face airline respirator is available in the vicinity of the working area. Employ suitable pressure regulating device on all Cylinders when gas is being emitted to systems with lower pressure rating than that of the Cylinder. Ascertain that all electrical systems in the area are suitable for service with each gas.

Never use direct flame or electrical heating devices to raise the pressure of a Cylinder, Cylinders should not be subjected to temperatures above 45°C. Never re-compress a gas mixture without consulting the supplier. Never attempt to transfer gases from one Cylinder to another. Do not use Cylinders as rollers or supports, or for any other purpose other than to contain the gas as supplied. Never permit oil, grease or other readily combustible substances to come into contact with valves of Cylinders containing oxygen or other oxidants. Keep Cylinder valves clean and free from contaminants particularly oil and water.

Do not subject Cylinders to mechanical shocks which may cause damage to their valves or safety devices.

Never attempt to repair or modify Cylinder valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Close the Cylinder valve whenever gas is not required even if the Cylinder is still connected to the equipment.

2. STORAGE

Cylinders should be stored in a well-ventilated area. Some gases will require a purpose built area. Store Cylinders in a location free from fire risk and away from sources of heat and ignition. Designate as a no smoking area.

Gas Cylinders should be segregated in the storage according to the various categories.

The storage area should be kept clear and access should be restricted to authorized persons only, the area should be clearly marked as a storage area and appropriate hazard warning signs displayed (Flammable, Toxic etc.).

The amount of flammable or toxic gases should be kept to a minimum.

Flammable gases should be stored away from other combustible materials.

Cylinders held in storage should be periodically checked for general condition and leakage.

Cylinders in storage should be properly secured to prevent toppling or rolling.

Vertical storage is recommended where the Cylinder is designed for this.

Cylinder valves should be tightly closed and, where appropriate, valves should be capped or plugged. Protect Cylinders stored in the open against rusting and extremes of weather.

Cylinders should not be stored in conditions likely to encourage corrosion.

Store full and empty Cylinders separately and arrange full Cylinders so that the oldest stock is used first.

FOR FURTHER INFORMATION CONTACT YOUR NEAREST DISTRIBUTION CENTRE

SAFETY DATA SHEET

Refrigerant Gas R134a

Version 2

Revision Date: 20.02.12



SAFETY DATA SHEET

REFRIGERANT R134A

SECTION 1: IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

1.1. Product Identifier

Product Name: REFRIGERANT R134a

Synonyms: 1,1,1,2 Tetrafluoroethane
HFC-134a
Norflurane

EC Number: 212-337-0

CAS Number: 811-97-2

REACH Registration Number: 01-2119459374-33-0002

If REACH registration numbers do not appear the substance is either exempt from registration, does not meet the minimum volume threshold for registration or the registration has not yet come due.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use: Refrigerant

Advised Against: No specific uses advised again have been identified, other than restrictions in the F-Gas Regulations.

1.3. Details of the supplier of the safety data sheet

Company name:

National Refrigerants Ltd.
4 Watling Close
Sketchley Meadows Business Park
Hinckley LE10 3EZ
Tel: +44(0)1455 630790
Fax: +44(0) 1455 630791
Email: sds@nationalref.com

1.4. Emergency telephone number

Emergency Tel: +44(0) 1865 407333

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance of mixture

Regulation (EC) No. 1272/2008



Warning

H280 Contains gas under pressure; may explode if heated
P410+P403 Protect from sunlight. Store in a well-ventilated place.

Directives 67/458/EEC or

This substance is not classified as dangerous according to Directive 67/548/EEC.

SAFETY DATA SHEET

Refrigerant Gas R134a

Version 2

Revision Date: 20.02.12



1999/45/EC:

Most important adverse effect: Rapid evaporation of the liquid may cause frostbite.
Vapour is heavier than air and can cause suffocation.

2.2. Label elements

Label elements under CHIP:

Risk phrases R58: May cause long-term adverse effects in the environment
Safety phrases None

2.3. Other hazards

Directives 67/548/EEC or 1999/45/EC: Not a hazardous substance according to EC directives 67/548/EEC or 1999/45/EC.

Special labelling of certain mixtures: Contains fluorinated greenhouse gases covered by the Kyoto Protocol

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

Hazardous Ingredients: 1,1,1,2-tetrafluoroethane 99.9%

3.2 Mixtures

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Skin contact: Rapid evaporation of liquid may cause frostbite. Take off all contaminated clothing immediately if not stuck to the skin. Flush area with lukewarm water. Do not use hot water. If frostbite has occurred call a physician.

Eye contact: Rapid evaporation of liquid in contact with the eye will damage it. Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion: This is not considered a potential route of exposure.

Inhalation: Remove from exposure, move to fresh air, and lie down. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.

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

Skin contact: Low exposure to liquid will cause redness and pain. High exposure to liquid will cause frostbite, blisters and severe pain.

Eye contact: Exposure to liquid will cause severe pain and cornea damage.

Ingestion: Not a route of exposure.

Inhalation: High vapour concentrations cause severe headache, dizziness and unconsciousness.

Delayed/immediate effects: May cause cardiac arrhythmia.

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

Immediate/special treatment: Burns pack should be available on the premises.

SECTION 5: FIRE-FIGHTING MEASURES

SAFETY DATA SHEET

Refrigerant Gas R134a

Version 2

Revision Date: 20.02.12



5.1. Extinguishing media

Extinguishing media: This product is not flammable. (ASHRAE 34) All extinguishing agents are suitable. Use measures that are appropriate to local and surrounding environment. Cool cylinders/tanks with water spray.

5.2. Special hazards arising from the substance or mixture

Special hazards arising from the mixture Pressure build-up in cylinders/tanks.
Hazardous thermal decomposition products: carbon oxides, hydrogen fluoride, carbonyl fluoride.

5.3. Advice for fire-fighters

Advice for fire-fighters: In the event of fire wear self-contained breathing apparatus.
Wear neoprene gloves during cleaning work after a fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Evacuate personnel to safe areas.
Ventilate the area.

6.2. Environmental precautions

Environmental precautions: Should not be released into the atmosphere.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Material evaporates.

6.4. Reference to other sections

Reference to other sections: For handling and protection measures refer to Section 7 of SDS. Refer to Section 8 of SDS.
For disposal methods refer to Section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling requirements: *Advice on handling:*
Avoid breathing vapours or mist.
Avoid liquid contact with skin and clothing.
Provide sufficient air exchange and/or exhaust in work rooms.
Advice on protection against fire and explosion:
No special measures against fire required.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Keep valves tightly closed.
Store in cool, dry well ventilated place.
Temperature not to exceed 45°C.

Suitable packaging: Store in original cylinder only.
Protect from contamination.

7.3. Specific end use(s)

Specific end use(s) No data available.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

SAFETY DATA SHEET

Refrigerant Gas R134a

Version 2

Revision Date: 20.02.12



Hazardous ingredients:

1,1,1,2-TETRAFLUOROETHANE (HFC134a)

Workplace exposure limits

State	8 hour TWA	15 min. STEL
UK	1000 ppm (4240 mg/m ³)	-

8.2. Derived No Effect Level (DNEL)

1,1,1,2-Tetrafluoroethane:

Type of Application (Use): Workers
Exposure Routes: Inhalation
Health Effects: Chronic effects, Systemic toxicity.
Value: 2476 mg/m³

Type of Application (Use): Consumers
Exposure Routes: Inhalation
Health Effects: Chronic effects, Systemic toxicity.
Value: 2476 mg/m³

8.3 Predicted No Effect Concentration

1,1,1,2-tetrafluoroethane:

Value: 0.1 mg/l
Compartment: Fresh water.

Value: 0.01 mg/l
Compartment: Marine water.

Value: 1 mg/l
Compartment: Water
Remarks: Intermittent use/release.

Value: 0.75 mg/l
Compartment: Fresh water sediment.

Value: 73 mg/l
Compartment: Water
Remarks: Sewage treatment plants.

8.4. Exposure Controls

Engineering measures:

Ensure adequate ventilation, especially in confined areas.

Respiratory protection:

For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Hand protection:

Heat insulating gloves

Eye protection:

Safety glasses with side shields. Wear a face shield in addition where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Skin protection:

Wear clothing that covers legs and arms.

Environmental:

Gas escapes to be kept to the minimum by engineering processes and operating methods.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

State: Liquefied gas under pressure.
Colour: Clear colourless liquid and vapour.
Odour: Slight, ether like.
Molecular weight: 102.02 g/mol
Boiling Point/range: -26.2°C

SAFETY DATA SHEET

Refrigerant Gas R134a

Version 2

Revision Date: 20.02.12



Flash Point:	Non-flammable
Ignition Temperature:	n/a Non flammable
Upper explosive limit/upper flammability limit:	n/a Non flammable
Vapour pressure:	4.909 Bar (4909 hPa) at 21°C
Liquid Density:	1200 kg/m ³ at 25°C
Vapour Density:	5.368 kg/m ³ at 21°C
Water solubility:	1.5 g/l
Vapour Density (Air = 1)	3.5

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity:	Stable under recommended storage and transport conditions.

10.2. Chemical stability

Chemical stability:	Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions:	Hazardous reactions will not occur under recommended storage and transport conditions. May react with aluminium.

10.4. Conditions to avoid

Conditions to avoid:	Heat, hot surfaces, flames.

10.5. Incompatible material

Materials to avoid:	Alkali metals, alkaline earth metals, powdered metals, powdered metal salts.

10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological effects

Acute Oral Toxicity:	1,1,2-Tetrafluoroethane Not Applicable.
Acute inhalation toxicity:	1,1,1,2-Tetrafluoroethane LC ₅₀ /rat: 567000 ppm /dog: Cardiac sensitization.
Acute Dermal toxicity:	1,1,1,2-Tetrafluoroethane Not Applicable
Skin Irritation:	1,1,1,2-Tetrafluoroethane Rabbit Classification: Not classified as irritant. Result: Slight irritation.
Eye Irritation:	1,1,1,2-Tetrafluoroethane Rabbit Classification: Not classified as an irritant. Result: Slight irritation Not expected to cause eye irritation based on expert review of the properties of the substance.

SAFETY DATA SHEET

Refrigerant Gas R134a

Version 2

Revision Date: 20.02.12



Human
Classification: Not classified as irritant.
Result: No eye irritation.

Sensitization:

1,1,1,2-Tetrafluoroethane
Guinea pig
Classification: Not a skin sensitized.
Result: Did not cause sensitization on laboratory animals.
Not expected to cause sensitization based on expert review of the properties of the substance.

Did not cause sensitization on laboratory animals. There are no reports of human respiratory sensitization.

Repeated Dose Toxicity:

1,1,1,2-Tetrafluoroethane
Inhalation rat
No toxicologically significant effects were found.

Mutagenicity Assessment

1,1,1,2-Tetrafluoroethane
Animal testing did not show any mutagenic effects, Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity Assessment:

1,1,1,2-Tetrafluoroethane
Not classified as a human carcinogen.

Toxicity to reproduction Assessment:

1,1,1,2-Tetrafluoroethane
No toxicity to reproduction.

Human Experience:

Excessive exposure may affect human health as follows:

Inhalation
Severe shortness of breath, narcosis, irregular cardiac activity.

Other information:

May cause cardiac arrhythmia. Rapid evaporation of the liquid may cause frostbite. Inhalation of decomposition products in high concentration may cause shortness of breath (lung oedema).

SECTION 12. ECOLOGICAL INFORMATION

Where sections are blank no data is available

12.1. Toxicity

Toxicity to fish:

1,1,1,2-Tetrafluoroethane
LC₅₀/96 h/Oncorhynchus mykiss (rainbow trout): 450 mg/l

Toxicity to Aquatic plants:

1,1,1,2-Tetrafluoroethane
EC₅₀/72 h/Algae: >118 mg/l
Information given is based on data obtained from similar substances.

Acute Toxicity to aquatic Invertebrates:

1,1,1,2-Tetrafluoroethane
EC₅₀/48 h/Daphnia magna (water flea): 980 mg/l

Ecotoxic values:

When discharged may contribute to the greenhouse effect.

12.2. Persistence and degradability

Persistence and Degradability:

Biodegradability
/28 d
Biodegradation: 3%
Method: Closed Bottle test
Not readily biodegradable.

12.3. Bio accumulative potential

SAFETY DATA SHEET

Refrigerant Gas R134a

Version 2

Revision Date: 20.02.12



Bio-accumulative potential: No data available.

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

PBT & vPvB identification: This substance is not considered to be persistent, bio accumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bio accumulating (vPvB).

12.6. Other adverse effects

Other adverse effects:
Global Warming Potential 1370
(GWP) (CO₂ = 1)

Ozone Depletion Potential 0
(ODP) (R11 = 1)

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal operations: Do not allow product to be released into the environment.
Recovery Operations: Consult the manufacturer or supplier for information regarding recovery and recycling of the product. If recovery is not possible, incinerate at a licensed installation.
Disposal of packaging: De-gas and return cylinders to suppliers.
N.B. The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

SECTION 14. TRANSPORT INFORMATION

14.1. ADR

Proper Shipping Name: Refrigerant R134a or 1,1,1,2-Tetrafluoroethane
UN Number: 3159
Class: 2
Classification Code: 2A
Labelling No.: 2.2
HI Number: 20
Tunnel Code: (C/E)

14.2. IATA_C

Proper Shipping Name: Refrigerant R134a or 1,1,1,2-Tetrafluoroethane
UN Number: 3159
Labelling No.: 2.2

14.3. IMDG

Proper Shipping Name: Refrigerant R134a or 1,1,1,2-Tetrafluoroethane
UN Number: 3159
Class: 2.2
Labelling Number: 2.2

SECTION 15. REGULATORY INFORMATION

15.1. Safety, health and environment regulations/legislation specific for the substance or mixture

Special labelling of certain mixtures: Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

15.2. Chemical Safety Assessment

SAFETY DATA SHEET
Refrigerant Gas R134a

Version 2

Revision Date: 20.02.12



Chemical safety assessment: A chemical safety assessment has been carried out by the supplier of this mixture.

16. OTHER INFORMATION

Other information: This safety sheet is prepared in accordance with Commission Regulation (EU) No. 453/2010.
* Indicates text in SDS which has changed since the last revision.

Legal disclaimer: *National Refrigerants Ltd. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other methods of use of the product and of the information referred to herein are beyond the control of National Refrigerants Ltd. National Refrigerants Ltd. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.*

SAFETY DATA SHEET

Refrigerant Gas R134a

Version 2

Revision Date: 20.02.12



GENERAL SAFETY & HANDLING DATA

1. GENERAL

Only trained persons should handle compressed gases. Observe all regulations and local requirements regarding the storage of Cylinders. Do not remove or deface labels provided by the supplier for the identification of the Cylinder contents. Ascertain the identity of the gas before using it. Know and understand the properties and hazards associated with each gas before using it. When doubt exists as to the correct handling procedure for a particular gas contact the supplier.

HANDLING AND USE

Wear stout gloves. Never lift a Cylinder by the cap or guard unless the supplier states it is designed for that purpose. Use trolley or other suitable device or technique for transporting heavy Cylinders, even for a short distance. Where necessary wear suitable eye and face protection. The choice between safety glasses, chemical goggles, or full face shield will depend on the pressure and nature of the gas being used,

Where necessary for toxic gases see that self-contained positive pressure breathing apparatus or full face airline respirator is available in the vicinity of the working area. Employ suitable pressure regulating device on all Cylinders when gas is being emitted to systems with lower pressure rating than that of the Cylinder. Ascertain that all electrical systems in the area are suitable for service with each gas.

Never use direct flame or electrical heating devices to raise the pressure of a Cylinder, Cylinders should not be subjected to temperatures above 45°C. Never re-compress a gas mixture without consulting the supplier. Never attempt to transfer gases from one Cylinder to another. Do not use Cylinders as rollers or supports, or for any other purpose other than to contain the gas as supplied. Never permit oil, grease or other readily combustible substances to come into contact with valves of Cylinders containing oxygen or other oxidants. Keep Cylinder valves clean and free from contaminants particularly oil and water.

Do not subject Cylinders to mechanical shocks which may cause damage to their valves or safety devices.

Never attempt to repair or modify Cylinder valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Close the Cylinder valve whenever gas is not required even if the Cylinder is still connected to the equipment.

2. STORAGE

Cylinders should be stored in a well-ventilated area. Some gases will require a purpose built area. Store Cylinders in a location free from fire risk and away from sources of heat and ignition. Designate as a no smoking area.

Gas Cylinders should be segregated in the storage according to the various categories.

The storage area should be kept clear and access should be restricted to authorized persons only, the area should be clearly marked as a storage area and appropriate hazard warning signs displayed (Flammable, Toxic etc.).

The amount of flammable or toxic gases should be kept to a minimum.

Flammable gases should be stored away from other combustible materials.

Cylinders held in storage should be periodically checked for general condition and leakage.

Cylinders in storage should be properly secured to prevent toppling or rolling.

Vertical storage is recommended where the Cylinder is designed for this.

Cylinder valves should be tightly closed and, where appropriate, valves should be capped or plugged. Protect Cylinders stored in the open against rusting and extremes of weather.

Cylinders should not be stored in conditions likely to encourage corrosion.

Store full and empty Cylinders separately and arrange full Cylinders so that the oldest stock is used first.

FOR FURTHER INFORMATION CONTACT YOUR NEAREST DISTRIBUTION CENTRE

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



SAFETY DATA SHEET

REFRIGERANT R407C

SECTION 1: IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

1.1. Product Identifier

Product name: REFRIGERANT R407C

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use: Refrigerant.

Advised Against: No specific uses advised again have been identified, other than restrictions in the F-Gas Regulations.

1.3. Details of the supplier of the safety data sheet

Company name:

National Refrigerants Ltd.
4 Watling Close
Sketchley Meadows Business Park
Hinckley LE10 3EZ
Tel: +44(0)1455 630790
Fax: +44(0) 1455 630791
Email: sds@nationalref.com

1.4. Emergency telephone number

Emergency Tel: +44(0) 1865 407333

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance of mixture

Classification under CHIP: This substance is not classified as dangerous according to Directive 67/548/EEC.

Most important adverse effect: Rapid evaporation of the liquid may cause frostbite.
Vapour is heavier than air and can cause suffocation.

2.2. Label elements

Directives 67/458/EEC or 1999/45/EC: This substance is not classified as dangerous according to Directive 67/548/EEC.

Special labelling of certain mixtures: Contains fluorinated greenhouse gases covered by the Kyoto Protocol

2.3. Other hazards

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

Hazardous Ingredients:

3.2 Mixtures

DIFLUOROMETHANE (R32)

EINECS	CAS	67/548/EEC Classification	CLP Classification	Percent
200-839-4	75-10-5	F+; R12	H220: Flammable gas	21 - 25%

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



			H280: Pressurised gas	

PENTAFLUOROETHANE (R125)

EINECS	CAS	67/548/EEC Classification	CLP Classification	Percent
206-557-8	354-33-6		H280: Pressurised gas	23 - 27%

1,1,1,2-TETRAFLUOROETHANE

EINECS	CAS	67/548/EEC Classification	CLP Classification	Percent
212-377-0	811-97-2		H280: Pressurised Gas	50 - 54%

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Skin contact:	Take off all contaminated clothing immediately if not stuck to the skin. Flush area with lukewarm water. Do not use hot water. If frostbite has occurred call a physician.
Eye contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion:	This is not considered a potential route of exposure.
Inhalation:	Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.
General Advice	Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.

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

Skin contact:	Low exposure will cause redness and pain. High exposure will cause frostbite, blisters and severe pain.
Eye contact:	Cause severe pain and cornea damage.
Ingestion:	Not a route of exposure.
Inhalation:	Shortness of breath, severe headache, dizziness, nausea, weakness, and unconsciousness. Irregular cardiac activity.
Treatment:	Do not give adrenaline or similar drugs.

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

Immediate/special treatment:	Burns pack should be available on the premises.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media:	Water spray, Foam, Dry chemical Carbon dioxide (CO ₂). Use extinguishing measures that are appropriate to local and surrounding environment. Cool cylinders/tanks with water spray.

5.2. Special hazards arising from the substance or mixture

Special hazards arising from the mixture	Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapours or gases may travel considerable distances to ignition source and flash back. Fire or intense heat may cause violent rupture of packages. Hazardous thermal decomposition products: carbon oxides, hydrogen fluoride, carbonyl fluoride.

5.3. Advice for fire-fighters

Advice for fire-fighters:	In the event of fire wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning work after a fire.

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Evacuate personnel to safe areas. Ventilate the area, especially low or enclosed places where heavy vapours might collect.

6.2. Environmental precautions

Environmental precautions: Should not be released into the atmosphere.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Material evaporates.

6.4. Reference to other sections

Reference to other sections: Refer to Section 7 of SDS. Refer to Section 8 of SDS.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling requirements: *Advice on handling:* Avoid breathing vapours or mist. Avoid liquid contact with skin and clothing. Provide sufficient air exchange and/or exhaust in work rooms.
Advice on protection against fire and explosion: No special measures against fire required.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Do not drag, slide or roll cylinders. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Keep at temperature not exceeding 52°C. Keep cylinders tightly closed in a dry, cool and well-ventilated place.

Suitable packaging: Store in original cylinder only.
Protect from contamination.

Storage temperature: Less than 52°C

7.3. Specific end use(s)

Specific end use(s) No data available.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

If subsection is empty then no values are applicable

8.1. Control parameters

Hazardous ingredients:

PENTAFLUOROETHAN (HFC125)

Workplace exposure limits

State	8 hour TWA	15 min. STEL
UK	1000 ppm (4900 mg/m ³)	-

1,1,1,2-TETRAFLUOROETHANE (HFC134a)

Workplace exposure limits

State	8 hour TWA	15 min. STEL
UK	1000 ppm (4240 mg/m ³)	-

I

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



8.2. Derived No Effect Level

Difluoromethane

Type of Application (Use): Workers
Exposure routes: Inhalation
Health effects: Chronic effects, Systemic toxicity
Value: 7035 mg/m³

Type of application (Use): Consumers
Exposure routes: Inhalation
Health effects: Chronic effects, Systemic toxicity
Value: 750 mg/m³

Pentafluoroethane

Type of Application (Use): Workers
Exposure routes: Inhalation
Health effects: Chronic effects, Systemic toxicity
Value: 16444 mg/m³

Type of application (Use): Consumers
Exposure routes: Inhalation
Health effects: Chronic effect, Systemic toxicity
Value; 1753 mg/m³

1,1,1,2-Tetrafluoroethane

Type of Application (Use): Workers
Exposure routes: Inhalation
Health effects: Chronic effects, Systemic toxicity
Value: 13936 mg/m³

Type of application (Use): Consumers
Exposure routes: Inhalation
Health effects: Chronic effect, Systemic toxicity
Value; 2476 mg/m³

8.3 Predicted No Effect Concentration

Difluoromethane

Value: 0.142 mg/l
Compartment: Fresh water

Value: 1.42 mg/l
Compartment: Water
Remarks; Intermittent use/release

Value: 0.534 mg/l
Compartment: Fresh water sediment

Pentafluoroethane

Value; 0.1 mg/l
Compartment: Fresh water

Value: 1 mg/l
Compartment: Water
Remarks; Intermittent use/release

Value: 0.6 mg/l
Compartment: Fresh water sediment

1,1,1,2-Tetrafluoroethane

Value; 0.1 mg/l
Compartment: Fresh water

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



Value: 0.01 mg/l
Compartment: Water
Remarks: Intermittent use/release

Value: 1 mg/l
Compartment: Fresh water sediment

Value: 0.75 mg/l
Compartment: Fresh water sediment

Value: 73 mg/l
Compartment: Water
Remarks: Sewage treatment plants

8.4 Exposure controls

Engineering measures:	Ensure adequate ventilation, especially in confined areas. Local exhaust should be used when large amounts are released.
Respiratory protection:	For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Hand protection:	Heat insulating gloves
Eye protection:	Safety glasses with side shields. Wear a face shield in addition where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.
Skin protection:	Wear impervious clothing that covers legs and arms.
Protective measures	When using do not smoke
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.
Environmental:	Gas escapes to be kept to the minimum by engineering processes and operating methods.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

State:	Liquefied gas under pressure.
Colour:	Clear colourless liquid and vapour.
Odour:	Ethereal
Molecular weight:	86.20 g/mole
Boiling Point/range:	-43.56°C (at one atmosphere)
Flash Point:	Does not flash. Non-flammable
Vapour pressure:	10.999 Bar (10999 hPa) at 20°C
Liquid Density:	1159 kg/m ³ at 20°C
Vapour Density:	4.629 kg/m ³ at boiling point.
Water solubility:	Insoluble
Solubility (Other):	Soluble in: alcohols, chlorinated solvents, esters

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity:	Stable under recommended storage and transport conditions.

10.2. Chemical stability

Chemical stability:	Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions:	Hazardous reactions will not occur under recommended storage and transport conditions. May react with aluminium.

10.4. Conditions to avoid

Conditions to avoid:	Heat, hot surfaces, flames.

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen, the mixture may become flammable or reactive under certain conditions.

10.5. Incompatible material

Materials to avoid: Alkali metals, alkaline earth metals, powdered metals, powdered metal salts.

10.6. Hazardous decomposition products

Hazardous decomposition products: Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute oral toxicity

Difluoromethane	Not applicable
Pentafluoroethane	Not applicable
1,1,1,2-Tetrafluoroethane	Not applicable

Acute inhalation toxicity

Inhalation	
Difluoromethane:	LC50/rat: > 520 000 ppm /dog: Not a cardiac sensitizer.
Pentafluoroethane:	LC50/rat: > 800 000 ppm /dog: Cardiac sensitization.
1,1,1,2-Tetrafluoroethane:	LC50/rat: 567 000 ppm /dog: Cardiac sensitization.

Acute dermal toxicity

Difluoromethane;	Not applicable
Pentafluoroethane:	Not applicable
1,1,1,2-Tetrafluoroethane:	Not applicable

Skin irritation

Difluoromethane:	Not tested on animals. Classification: Not classified as irritant. Result: No skin irritation. Not expected to cause skin irritation based on expert review of the properties of the substance.
Pentafluoroethane:	Not tested on animals. Classification: Not classified as irritant Result: No skin irritation. Not expected to cause skin irritation based on expert review of the properties of the substance.
1,1,1,2-Tetrafluoroethane:	Rabbit Classification: Not classified as irritant Result: slight skin irritation. Not expected to cause skin irritation based on expert review of the properties of the substance. Human Classification: Not classified as irritant Result: No skin irritation.

Eye irritation

Difluoromethane:	Not tested on animals. Classification: Not classified as irritant Result: No eye irritation. Not expected to cause eye irritation based on expert review of the properties of the substance.

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



Pentafluoroethane: Not tested on animals.
Classification: Not classified as irritant
Result: No eye irritation.
Not expected to cause eye irritation bases on expert review of the properties of the substance.

1,1,1,2-tetrafluoroethane Rabbit
Classification: Not classified as irritant
Result: slight skin irritation.
Not expected to cause eye irritation bases on expert review of the properties of the substance.

Human
Classification: Not classified as irritant
Result: No eye irritation.

Sensitisation

Difluoromethane: Not tested on animals.
Classification: Not a skin irritant
Result: Does not cause skin sensitisation.
Not expected to cause skin sensitisation bases on expert review of the properties of the substance.

There are reports of human respiratory sensitisation.

Pentafluoroethane: Not tested on animals.
Classification: Not a skin irritant
Result: Does not cause skin sensitisation.
Not expected to cause skin sensitisation bases on expert review of the properties of the substance.

1,1,1,2-Tetrafluoroethane: Guinea pig
Classification: Not a skin irritant
Result: Did not cause skin sensitisation on laboratory animals.
Not expected to cause skin sensitisation bases on expert review of the properties of the substance.

Did not cause sensitisation on laboratory animals. There are no reports of human respiratory sensitisation.

Repeated dose toxicity

Difluoromethane: Inhalation rat
No toxicologically significant effects were found,

Pentafluoroethane: Inhalation rat
No toxicologically significant effects were found,

1,1,1,2_Tetrafluoroethane: Inhalation rat
No toxicologically significant effects were found,

Mutagenic assessment

Difluoromethane: Animal testing did not show any mutagenic effects.
Tests on bacteria or mammalian cell cultures did not show mutagenic effects.

Pentafluoroethane: Animal testing did not show any mutagenic effects.
Tests on bacteria or mammalian cell cultures did not show mutagenic effects.

1,1,1,2-Tetrafluoroethane: Animal testing did not show any mutagenic effects.
Tests on bacteria or mammalian cell cultures did not show mutagenic effects.

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



Carcinogenicity Assessment

Difluoromethane:	Not classifiable as a human carcinogen.
Pentafluoroethane:	Not classifiable as a human carcinogen.
1,1,1,2-Tetrafluoroethane:	Not classifiable as a human carcinogen.

Toxicity to reproduction assessment

Difluoromethane:	No toxicity to reproduction.
Pentafluoroethane:	No toxicity to reproduction.
1,1,1,2-Tetrafluoroethane:	No toxicity to reproduction.

Human experience

Excessive exposures may affect human health as follows:
Inhalation: Sever shortness of breath, narcosis, irregular cardiac activity.

Futher information

Rapid evaporation of the liquid may cause frostbite. May cause cardiac arrhythmia.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

Toxicity to fish:	
Difluoromethane:	LC ₅₀ /96 h/Fish: 1507 mg/l
Pentafluoroethane:	LC ₅₀ /96 h/Oncorhynchus (rainbow trout): > 81.2 mg/l Information given is based on data obtained from similar substances. LC ₅₀ /96 h/Danio rerio (zebra fish): > 200 mg/l Information given is based on data obtained from similar substances. LC ₅₀ /96 h/Oncorhynchus mykiss (rainbow trout): 450 mg/l Information given is based on data obtained from similar substances.
1,1,1,2-Tetrafluoroethane	LC ₅₀ /96 h/Oncorhynchus mykiss (rainbow trout): 450 mg/l
Toxicity to Aquatic plants:	
Difluoromethane:	LC ₅₀ /96 h/Algae: 142 mg/l
Pentafluoroethane:	LC ₅₀ /72 h/Pseudokirchneriella subcapitata (green algae): >118 mg/l Information given is based on data obtained from similar substances. LC ₅₀ /72 h/Pseudokirchneriella subcapitata (green algae): >114 mg/l Information given is based on data obtained from similar substances. LC ₅₀ /96 h/Algae: 142 mg/l Information given is based on data obtained from similar substances.
1,1,1,2-Tetrafluoroethane:	LC ₅₀ /72 h/algae: >118 mg/l Information given is based on data obtained from similar substances.
Toxicity to aquatic invertebrates	
Difluoromethane	EC ₅₀ /48 h/Daphnia: 652 mg/l
Pentafluoroethane	EC ₅₀ /48 h/Daphnia magna (Water flea): > 200 mg/l Information given is based on data obtained from similar substances. EC ₅₀ /48 h/Daphnia magna (Water flea): > 97.9 mg/l Information given is based on data obtained from similar substances. EC ₅₀ /48 h/Daphnia magna (Water flea): > 97.9 mg/l Information given is based on data obtained from similar substances.

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



1,1,1,2-Tetrafluoroethane: EC₅₀/48 h/Daphnia magna (Water flea): 980 mg/l

Ecotoxic values: When discharged may contribute to the greenhouse effect.

Global Warming Potential (GWP) 0 (CO₂ = 1)

Ozone Depletion Potential (ODP) 1674 (R11 = 1)

12.2. Persistence and degradability

Persistence and degradability: No data available.

12.3. Bio accumulative potential

Bio-accumulative potential: No data available.

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

PBT identification: No data available

12.6. Other adverse effects

Other adverse effects: Ozone Depletion Potential (ODP): 0 (R11 = 1)
Global Warming Potential: 1773 (CO₂ = 1)

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal operations: Do not allow product to be released into the environment.

Recovery Operations: Consult the manufacturer or supplier for information regarding recovery and recycling of the product. If recovery is not possible, incinerate at a licensed installation.

Disposal of packaging: De-gas and return cylinders to suppliers.

N.B. The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

SECTION 14. TRANSPORT INFORMATION

14.1. ADR

UN Number: 3340

Class: 2

Classification code: 2A

Hazard Identification Number: 20

Labelling Number: 2.2

Proper Shipping Name: Refrigerant Gas R407C

Tunnel code: (C/E)

14.2. IATA_C

UN Number: 3340

Class: 2

Labelling Number: 2.2

Proper Shipping Name: Refrigerant Gas R407C

14.3. IMDG

UN Number: 3340

Class: 2

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



Labelling Number: 2.2
EmS: F-C, S-V
Proper Shipping Name: Refrigerant Gas R407C
Marine Pollutant: No

SECTION 15. REGULATORY INFORMATION

15.1. Safety, health and environment regulations/legislation specific for the substance or mixture

Special labelling of certain mixtures: Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out by the supplier of this mixture.

16. OTHER INFORMATION

Other information: This safety sheet is prepared in accordance with Commission Regulation (EU) No. 453/2010.
* Indicates text in SDS which has changed since the last revision

Text of R-phrases mentioned in Section 3: R12 Extremely flammable

Full text of H-statements referred under Section 3:
H220 Extremely flammable gas
H280 Contains gas under pressure; may explode if heated.

Legal disclaimer: National Refrigerants Ltd. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other methods of use of the product and of the information referred to herein are beyond the control of National Refrigerants Ltd. National Refrigerants Ltd. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

SAFETY DATA SHEET

Refrigerant Gas R407C

Version 1

Revision Date: 20.05.2011



GENERAL SAFETY & HANDLING DATA

1. GENERAL

Only trained persons should handle compressed gases. Observe all regulations and local requirements regarding the storage of Cylinders. Do not remove or deface labels provided by the supplier for the identification of the Cylinder contents. Ascertain the identity of the gas before using it. Know and understand the properties and hazards associated with each gas before using it. When doubt exists as to the correct handling procedure for a particular gas contact the supplier.

HANDLING AND USE

Wear stout gloves. Never lift a Cylinder by the cap or guard unless the supplier states it is designed for that purpose. Use trolley or other suitable device or technique for transporting heavy Cylinders, even for a short distance. Where necessary wear suitable eye and face protection. The choice between safety glasses, chemical goggles, or full face shield will depend on the pressure and nature of the gas being used,

Where necessary for toxic gases see that self-contained positive pressure breathing apparatus or full face airline respirator is available in the vicinity of the working area. Employ suitable pressure regulating device on all Cylinders when gas is being emitted to systems with lower pressure rating than that of the Cylinder. Ascertain that all electrical systems in the area are suitable for service with each gas.

Never use direct flame or electrical heating devices to raise the pressure of a Cylinder, Cylinders should not be subjected to temperatures above 45°C. Never re-compress a gas mixture without consulting the supplier. Never attempt to transfer gases from one Cylinder to another. Do not use Cylinders as rollers or supports, or for any other purpose other than to contain the gas as supplied. Never permit oil, grease or other readily combustible substances to come into contact with valves of Cylinders containing oxygen or other oxidants. Keep Cylinder valves clean and free from contaminants particularly oil and water.

Do not subject Cylinders to mechanical shocks which may cause damage to their valves or safety devices.

Never attempt to repair or modify Cylinder valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Close the Cylinder valve whenever gas is not required even if the Cylinder is still connected to the equipment.

2. STORAGE

Cylinders should be stored in a well-ventilated area. Some gases will require a purpose built area. Store Cylinders in a location free from fire risk and away from sources of heat and ignition. Designate as a no smoking area.

Gas Cylinders should be segregated in the storage according to the various categories.

The storage area should be kept clear and access should be restricted to authorized persons only, the area should be clearly marked as a storage area and appropriate hazard warning signs displayed (Flammable, Toxic etc.).

The amount of flammable or toxic gases should be kept to a minimum.

Flammable gases should be stored away from other combustible materials.

Cylinders held in storage should be periodically checked for general condition and leakage.

Cylinders in storage should be properly secured to prevent toppling or rolling.

Vertical storage is recommended where the Cylinder is designed for this.

Cylinder valves should be tightly closed and, where appropriate, valves should be capped or plugged. Protect Cylinders stored in the open against rusting and extremes of weather.

Cylinders should not be stored in conditions likely to encourage corrosion.

Store full and empty Cylinders separately and arrange full Cylinders so that the oldest stock is used first.

FOR FURTHER INFORMATION CONTACT YOUR NEAREST DISTRIBUTION CENTRE



NATIONAL REFRIGERANTS, INC.

R-409A

Safety Data Sheet

R-409A

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: R-409A
OTHER NAME: Chlorodifluoromethane, Chlorodifluoromethane, Chlorotetrafluoroethane
USE: Refrigerant Gas
DISTRIBUTOR: National Refrigerants, Inc.
661 Kenyon Avenue
Bridgeton, New Jersey 08302

FOR MORE INFORMATION CALL:
(Monday-Friday, 8:00am-5:00pm)
1-800-262-0012

IN CASE OF EMERGENCY CALL:
CHEMTREC: 1-800-424-9300

2. HAZARDS IDENTIFICATION

CLASSIFICATION: Gases under pressure, Liquefied Gas
SIGNAL WORD: WARNING
HAZARD STATEMENT: Contains gas under pressure, may explode if heated
SYMBOL: Gas Cylinder
PRECAUTIONARY STATEMENT: STORAGE: Protect from sunlight, store in a well ventilated place



EMERGENCY OVERVIEW: Colorless, volatile liquid with ethereal and faint sweetish odor. Non-flammable material. Overexposure may cause dizziness and loss of concentration. At higher levels, CNS depression and cardiac arrhythmia may result from exposure. Vapors displace air and can cause asphyxiation in confined spaces. At higher temperatures, (>250°C), decomposition products may include Hydrochloric Acid (HCL), Hydrofluoric Acid (HF) and carbonyl halides.

POTENTIAL HEALTH HAZARDS

SKIN: Irritation would result from a defatting action on tissue. Liquid contact could cause frostbite.

EYES: Liquid contact can cause severe irritation and frostbite. Mist may irritate.

INHALATION: R-409A is low in acute toxicity in animals. When oxygen levels in air are reduced to 12-14% by displacement, symptoms of asphyxiation, loss of coordination, increased pulse rate and deeper respiration will occur. At high levels, cardiac arrhythmia may occur.

INGESTION: Ingestion is unlikely because of the low boiling point of the material. Should it occur, discomfort in the gastrointestinal tract from rapid evaporation of the material and consequent evolution of gas would result. Some effects of inhalation and skin exposure would be expected.

DELAYED EFFECTS: None known.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

**INGREDIENT NAME****NTP STATUS****IARC STATUS****OSHA LIST**

No ingredients listed in this section

3. COMPOSITION / INFORMATION ON INGREDIENTS**INGREDIENT NAME****CAS NUMBER****WEIGHT %**

Chlorodifluoromethane (HCFC-22)

75-45-6

60

Chlorodifluoroethane (HCFC-142b)

75-68-3

15

Chlorotetrafluoroethane (HCFC-124)

2837-89-0

25

COMMON NAME and SYNONYMS

R-409A; HCFC-409A

There are no impurities or stabilizers that contribute to the classification of the material identified in Section 2

Trace impurities and additional material names not listed above may also appear in Section 15 toward the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

4. FIRST AID MEASURES

SKIN: Promptly flush skin with water until all chemical is removed. If there is evidence of frostbite, bathe (do not rub) with lukewarm (not hot) water. If water is not available, cover with a clean, soft cloth or similar covering. Get medical attention if symptoms persist.

EYES: Immediately flush eyes with large amounts of water for at least 15 minutes (in case of frostbite water should be lukewarm, not hot) lifting eyelids occasionally to facilitate irrigation. Get medical attention if symptoms persist.

INHALATION: Immediately remove to fresh air. If breathing has stopped, give artificial respiration. Use oxygen as required, provided a qualified operator is available. Get medical attention. Do not give epinephrine (adrenaline).

INGESTION: Ingestion is unlikely because of the physical properties and is not expected to be hazardous. Do not induce vomiting unless instructed to do so by a physician.

ADVICE TO PHYSICIAN: Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution and only in situations of emergency life support. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions.

5. FIRE FIGHTING MEASURES**FLAMMABLE PROPERTIES****FLASH POINT:**

Gas, not applicable per DOT regulations

FLASH POINT METHOD:

Not applicable

AUTOIGNITION TEMPERATURE:

<750°C

UPPER FLAME LIMIT (volume % in air):

None*

LOWER FLAME LIMIT (volume % in air):

None*

*Based on ASHRAE Standard 34 with match ignition

FLAME PROPAGATION RATE (solids):

Not applicable

OSHA FLAMMABILITY CLASS:

Not applicable



EXTINGUISHING MEDIA:

Use any standard agent – choose the one most appropriate for type of surrounding fire (material itself is not flammable)

UNUSUAL FIRE AND EXPLOSION HAZARDS:

R-409A is not flammable at ambient temperatures and atmospheric pressure. However, this material will become combustible when mixed with air under pressure and exposed to strong ignition sources.

Contact with certain reactive metals may result in formation of explosive or exothermic reactions under specific conditions (e.g. very high temperatures and/or appropriate pressures).

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Firefighters should wear self-contained, NIOSH-approved breathing apparatus for protection against possible toxic decomposition products. Proper eye and skin protection should be provided. Use water spray to keep fire-exposed containers cool.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE:

(Always wear recommended personal protective equipment.)

Evacuate unprotected personnel. Product dissipates upon release. Protected personnel should remove ignition sources and shut off leak, if without risk, and provide ventilation. Unprotected personnel should not return to the affected area until air has been tested and determined safe, including low-lying areas.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING:

(Always wear recommended personal protective equipment.)

Avoid breathing vapors and liquid contact with eyes, skin or clothing. Do not puncture or drop cylinders, expose them to open flame or excessive heat. Use authorized cylinders only. Follow standard safety precautions for handling and use of compressed gas cylinders.

R-409A should not be mixed with air above atmospheric pressure for leak testing or any other purpose.

STORAGE RECOMMENDATIONS:

Store in a cool, well-ventilated area of low fire risk and out of direct sunlight. Protect cylinder and its fittings from physical damage. Storage in subsurface locations should be avoided. Close valve tightly after use and when empty.

INCOMPATIBILITIES:

Freshly abraded aluminum surfaces at specific temperatures and pressures may cause a strong exothermic reaction. Chemically reactive metals: potassium, calcium, powdered aluminum, magnesium, and zinc.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide local ventilation at filling zones and areas where leakage is probable. Mechanical (general) ventilation may be adequate for other operating and storage areas.

**PERSONAL PROTECTIVE EQUIPMENT****SKIN PROTECTION:**

Skin contact with refrigerant may cause frostbite. General work clothing and gloves (leather) should provide adequate protection. If prolonged contact with the liquid or gas is anticipated, insulated gloves constructed of PVA, neoprene or butyl rubber should be used. Any contaminated clothing should be promptly removed and washed before reuse.

EYE PROTECTION:

For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear chemical safety goggles.

RESPIRATORY PROTECTION:

None generally required for adequately ventilated work situations. For accidental release or non-ventilated situations, or release into confined space, where the concentration may be above the PEL of 1,000 ppm, use a self-contained, NIOSH-approved breathing apparatus or supplied air respirator. For escape: use the former or a NIOSH-approved gas mask with organic vapor canister.

ADDITIONAL RECOMMENDATIONS:

Where contact with liquid is likely, such as in a spill or leak, impervious boots and clothing should be worn. High dose-level warning signs are recommended for areas of principle exposure. Provide eyewash stations and quick-drench shower facilities at convenient locations. For tank cleaning operations, see OSHA regulations, 29 CFR 1910.132 and 29 CFR 1910.133.

EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Chlorodifluoromethane	1000 ppm TWA (8hr)	1000 ppm TWA (8hr)	None
Chlorodifluoroethane	None	None	*1000 ppm TWA (8hr)
Chlorotetrafluoroethane	None	None	*1000 ppm TWA (8hr)

* = Workplace Environmental Exposure Level (AIHA)

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

Hydrogen Fluoride: ACGIH TLV: 2 ppm ceiling, 0.5ppm TLV-TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear, colorless liquid and vapor	
PHYSICAL STATE:	Gas at ambient temperatures	
MOLECULAR WEIGHT:	97.5	
CHEMICAL FORMULA:	CH ₃ CClF ₂ , CHClF ₂ , CHClFCF ₃	
ODOR:	Faint ethereal odor	
SPECIFIC GRAVITY (water = 1.0):	1.21 @ 21.1°C (70°F)	
SOLUBILITY IN WATER (weight %):	~0.15 wt% @ 25°C (77°F)	
pH:	Neutral	
BOILING POINT:	-35°C (-31.0°F)	
FREEZING POINT:	Not determined	
VAPOR PRESSURE:	107 psia @ 70°F 209.2 psia @ 130°F	
VAPOR DENSITY (air = 1.0):	3.4	
EVAPORATION RATE:	>1	COMPARED TO: CC1 ₄ = 1
% VOLATILES:	100	



ODOR THRESHHOLD:	High
FLAMMABILITY:	Not applicable
LEL/UEL:	None/None
RELATIVE DENSITY:	1.21 g/cm ³ at 21.1 C
PARTITION COEFF (n-octanol/water)	Log Pow: 1.08-1.13. Note: This product is more soluble than octanol
AUTO IGNITION TEMP:	Not Determined
DECOMPOSITION TEMPERATURE:	>250 degrees C
VISCOSITY:	Not applicable
FLASH POINT:	Not applicable

(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):

The product is stable.

Do not mix with oxygen or air above atmospheric pressure. Any source of high temperature, such as lighted cigarettes, flames, hot spots or welding may yield toxic and/or corrosive decomposition products.

INCOMPATIBILITIES:

(Under specific conditions: e.g. very high temperatures and/or appropriate pressures) – Freshly abraded aluminum surfaces (may cause strong exothermic reaction). Chemically active metals: potassium, calcium, powdered aluminum, magnesium and zinc.

HAZARDOUS DECOMPOSITION PRODUCTS:

Halogens, halogen acids and possibly carbonyl halides.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

HCFC-22:	LC ₅₀ : Inhalation 4 hr. (rat) - > 250,000 ppm
	Cardiac Sensitization threshold (dog) > 50,000 ppm
HFC-142b:	LC ₅₀ : Inhalation 4 hr. (rat) - > 128,000 ppm
	Cardiac Sensitization NOEL – 50,000 ppm
HFC-124:	LC ₅₀ : Inhalation 4 hr. (rat) - > 800,000 ppm
	Cardiac Sensitization threshold (dog) 75,000 ppm

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

HCFC-22:	Subchronic NOEL (rat) – 10,000 ppm
HFC-142b:	Subchronic inhalation (rat) NOEL – 20,000 ppm
HFC-124:	Teratogenic NOEL (rat and rabbit pups) – 50,000 ppm (rat and rabbit dams) – 15,000 ppm
	Subchronic inhalation (rat and mouse) NOEL – 15,000 ppm
	2 yr. Chronic Toxicity/Oncogenicity Study (rat) NOEL – 50,000 ppm

REPEATED DOSE TOXICITY:

Lifetime inhalation exposure of male rats was associated with a small increase in salivary gland fibrosarcomas.

**FURTHER INFORMATION:**

Acute effects of rapid evaporation of the liquid may cause frostbite. Vapors are heavier than air and can displace oxygen causing difficulty breathing or suffocation. May cause cardiac arrhythmia.

OTHER DATA:

Lifetime exposure of male rats to HCFC-22 was associated with a small increase in salivary gland fibrosarcomas
HFC-124, HFC-142b: Not active in four genetic studies

12. ECOLOGICAL INFORMATION

Degradability (BOD): R-409A is a gas at room temperature; therefore, it is unlikely to remain in water.
Octanol Water Partition Coefficient: See section 9

13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? Not a hazardous waste.
If yes, the RCRA ID number is: Not applicable.

OTHER DISPOSAL CONSIDERATIONS:

Disposal must comply with federal, state, and local disposal or discharge laws. R-409A is subject to U.S. Environmental Protection Agency Clean Air Act Regulations Section 608 in 40 CFR Part 82 regarding refrigerant recycling.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

US DOT ID NUMBER: UN3163
US DOT PROPER SHIPPING NAME: Liquefied gas, n.o.s., (Chlorodifluoromethane, Chlorodifluoroethane, Chlorotetrafluoroethane)
US DOT HAZARD CLASS: 2.2
US DOT PACKING GROUP: Not applicable

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: Components listed on the TSCA inventory
OTHER TSCA ISSUES: Subject to Section 12(b) export notification. May contain 0-10ppm Ethane, 2-chloro-1,1,1-trifluoro, CAS#75-88-7

SARA TITLE III / CERCLA

“Reportable Quantities” (RQs) and/or “Threshold Planning Quantities” (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA / CERCLA RQ (lb.)</u>	<u>SARA EHS TPQ (lb.)</u>
No ingredients listed in this section		



Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: IMMEDIATE PRESSURE

SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

INGREDIENT NAME

COMMENT

No ingredients listed in this section

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

INGREDIENT NAME

WEIGHT %

COMMENT

No ingredients listed in this section

ADDITIONAL REGULATORY INFORMATION:

R-409A is subject to U.S. Environmental Protection Agency Clean Air Act Regulations at 40 CFR Part 82.

WARNING: Do not vent to the atmosphere. To comply with provisions of the U.S. Clean Air Act, any residual must be recovered. **Contains Pentafluoroethane (HFC-125) and Difluoromethane (HFC-32)**, greenhouse gases which may contribute to global warming.

WHMIS CLASSIFICATION (CANADA):

This product has been evaluated in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

FOREIGN INVENTORY STATUS:

EU – EINECS # 2008719– HCFC-22
2008918 – HCFC-142ba
2206296 – HCFC-124

16. OTHER INFORMATION

CURRENT ISSUE DATE: April, 2015

PREVIOUS ISSUE DATE: November, 2012

OTHER INFORMATION:

HMIS Classification: Health – 1, Flammability – 1, Reactivity – 0
NFPA Classification: Health – 2, Flammability – 1, Reactivity – 0
ANSI / ASHRAE 34 Safety Group – A1

Regulatory Standards:

1. OSHA regulations for compressed gases: 29 CFR 1910.101
2. DOT classification per 49 CFR 172.101

Toxicity information per PAFT Testing



DISCLAIMER:

National Refrigerants, Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other methods or use of the product and of the information referred to herein are beyond the control of National Refrigerants. National Refrigerants expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

SAFETY DATA SHEET

Refrigerant Gas R410A

Version 2

Revision Date: 18.07.2013



SAFETY DATA SHEET

REFRIGERANT R410A

SECTION 1: IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

1.1. Product Identifier

Product name: REFRIGERANT R410A

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use: Refrigerant.

Advised Against: No specific uses advised again have been identified, other than restrictions in the F-Gas Regulations.

1.3. Details of the supplier of the safety data sheet

Company name:

National Refrigerants Ltd.
4 Watling Close
Sketchley Meadows Business Park
Hinckley LE10 3EZ
Tel: +44(0)1455 630790
Fax: +44(0) 1455 630791
Email: sds@nationalref.com

1.4. Emergency telephone number

Emergency Tel: +44(0) 1865 407333

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification under Directive 67/548/EEC or 1999/45/EC: This substance is not classified as dangerous according to Directive 67/548/EEC or 1999/45/EC.

Most important adverse effect: Rapid evaporation of the liquid may cause frostbite.
Vapour is heavier than air and can cause suffocation.

2.2. Label elements

Directives 67/458/EEC or 1999/45/EC: This substance is not classified as dangerous according to Directive 67/548/EEC or 1999/45/EC.

Special labelling of certain mixtures: Contains fluorinated greenhouse gases covered by the Kyoto Protocol

2.3. Other hazards

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

Hazardous Ingredients:

3.2 Mixtures

DIFLUOROMETHANE (R32)

EINECS	CAS	67/548/EEC Classification	CLP Classification	Percent

SAFETY DATA SHEET

Refrigerant Gas R410A

Version 2

Revision Date: 18.07.2013



200-839-4	75-10-5	F+; R12	H220: Flammable gas H280: Pressurised gas	48.5 – 50.5%

PENTAFLUOROETHANE (R125)

EINECS	CAS	67/548/EEC Classification	CLP Classification	Percent
206-557-8	354-33-6		H280: Pressurised gas	49.5 – 51.5%

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Skin contact:	Take off all contaminated clothing immediately if not stuck to the skin. Flush area with lukewarm water. Do not use hot water. If frostbite has occurred call a physician.
Eye contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion:	This is not considered a potential route of exposure.
Inhalation:	Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.
General Advice	Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.

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

Skin contact:	Low exposure will cause redness and pain. High exposure will cause frostbite, blisters and severe pain.
Eye contact:	Cause severe pain and cornea damage.
Ingestion:	Not a route of exposure.
Inhalation:	Shortness of breath, severe headache, dizziness, nausea, weakness, and unconsciousness. Irregular cardiac activity.
Treatment:	Do not give adrenaline or similar drugs.

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

Immediate/special treatment:	Burns pack should be available on the premises.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media:	Water spray, Foam, Dry chemical Carbon dioxide (CO ₂). Use extinguishing measures that are appropriate to local and surrounding environment. Cool cylinders/tanks with water spray.

5.2. Special hazards arising from the substance or mixture

Special hazards arising from the mixture	Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapours or gases may travel considerable distances to ignition source and flash back. Fire or intense heat may cause violent rupture of packages. Hazardous thermal decomposition products: carbon oxides, hydrogen fluoride, carbonyl fluoride.

5.3. Advice for fire-fighters

Advice for fire-fighters:	In the event of fire wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning work after a fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

SAFETY DATA SHEET

Refrigerant Gas R410A

Version 2

Revision Date: 18.07.2013



6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Evacuate personnel to safe areas. Ventilate the area, especially low or enclosed places where heavy vapours might collect.

6.2. Environmental precautions

Environmental precautions: Should not be released into the atmosphere.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Material evaporates.

6.4. Reference to other sections

Reference to other sections: Refer to Section 7 of SDS. Refer to Section 8 of SDS.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling requirements: *Advice on handling:* Avoid breathing vapours or mist. Avoid liquid contact with skin and clothing. Provide sufficient air exchange and/or exhaust in work rooms.
Advice on protection against fire and explosion: No special measures against fire required.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Do not drag, slide or roll cylinders. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Keep at temperature not exceeding 52°C. Keep cylinders tightly closed in a dry, cool and well-ventilated place.

Suitable packaging: Store in original cylinder only.
Protect from contamination.

Storage temperature: Less than 52°C

7.3. Specific end use(s)

Specific end use(s) No data available.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

If subsection is empty then no values are applicable

8.1. Control parameters

Hazardous ingredients:
PENTAFLUOROETHAN (HFC125)
Workplace exposure limits

State	8 hour TWA	15 min. STEL
UK	1000 ppm (4900 mg/m ³)	-

8.2. Derived No Effect Level

Difluoromethane Type of Application (Use): Workers
Exposure routes: Inhalation

SAFETY DATA SHEET

Refrigerant Gas R410A

Version 2

Revision Date: 18.07.2013



Health effects: Chronic effects, Systemic toxicity
Value: 7035 mg/m³

Type of application (Use): Consumers
Exposure routes: Inhalation
Health effects: Chronic effects, Systemic toxicity
Value: 750 mg/m³

Pentafluoroethane

Type of Application (Use): Workers
Exposure routes: Inhalation
Health effects: Chronic effects, Systemic toxicity
Value: 16444 mg/m³

Type of application (Use): Consumers
Exposure routes: Inhalation
Health effects: Chronic effect, Systemic toxicity
Value: 1753 mg/m³

8.3 Predicted No Effect Concentration

Difluoromethane

Value: 0.142 mg/l
Compartment: Fresh water

Value: 1.42 mg/l
Compartment: Water
Remarks; Intermittent use/release

Value: 0.534 mg/l
Compartment: Fresh water sediment

Pentafluoroethane

Value; 0.1 mg/l
Compartment: Fresh water

Value: 1 mg/l
Compartment: Water
Remarks; Intermittent use/release

Value: 0.6 mg/l
Compartment: Fresh water sediment

8.4 Exposure controls

Engineering measures:

Ensure adequate ventilation, especially in confined areas. Local exhaust should be used when large amounts are released.

Respiratory protection:

For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Hand protection:

Heat insulating gloves

Eye protection:

Safety glasses with side shields. Wear a face shield in addition where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Skin protection:

Wear impervious clothing that covers legs and arms.

Protective measures

When using do not smoke

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental:

Gas escapes to be kept to the minimum by engineering processes and operating methods.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

State: Liquefied gas under pressure.
Colour: Clear colourless liquid and vapour.
Odour: Ethereal
Molecular weight: 72.59 g/mole

SAFETY DATA SHEET

Refrigerant Gas R410A

Version 2

Revision Date: 18.07.2013



Boiling Point/range:	- 51.2 to -51.1°C (boiling range)
Flash Point:	Does not flash. Non-flammable
Vapour pressure:	14.706 Bar (14706 hPa) at 20°C
Liquid Density:	1081 kg/m ³ at 20°C

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity:	Stable under recommended storage and transport conditions.

10.2. Chemical stability

Chemical stability:	Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions:	Hazardous reactions will not occur under recommended storage and transport conditions. May react with aluminium.

10.4. Conditions to avoid

Conditions to avoid:	Heat, hot surfaces, flames. The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen, the mixture may become flammable or reactive under certain conditions.

10.5. Incompatible material

Materials to avoid:	Alkali metals, alkaline earth metals, powdered metals, powdered metal salts.

10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute oral toxicity

Difluoromethane	Not applicable
Pentafluoroethane	Not applicable

Acute inhalation toxicity

Inhalation	
Difluoromethane:	LC50/rat: > 520 000 ppm /dog: Not a cardiac sensitizer.
Pentafluoroethane:	LC50/rat: > 800 000 ppm /dog: Cardiac sensitization.

Acute dermal toxicity

Difluoromethane;	Not applicable
Pentafluoroethane:	Not applicable

Skin irritation

Difluoromethane:	Not tested on animals. Classification: Not classified as irritant. Result: No skin irritation. Not expected to cause skin irritation based on expert review of the properties of the substance.
Pentafluoroethane:	Not tested on animals.

SAFETY DATA SHEET

Refrigerant Gas R410A

Version 2

Revision Date: 18.07.2013



Classification: Not classified as irritant
Result: No skin irritation.
Not expected to cause skin irritation bases on expert review of the properties of the substance.

Eye irritation

Difluoromethane:

Not tested on animals.
Classification: Not classified as irritant
Result: No eye irritation.
Not expected to cause eye irritation bases on expert review of the properties of the substance.

Pentafluoroethane:

Not tested on animals.
Classification: Not classified as irritant
Result: No eye irritation.
Not expected to cause eye irritation bases on expert review of the properties of the substance.

Sensitisation

Difluoromethane:

Not tested on animals.
Classification: Not a skin irritant
Result: Does not cause skin sensitisation.
Not expected to cause skin sensitisation bases on expert review of the properties of the substance.

There are reports of human respiratory sensitisation.

Pentafluoroethane:

Not tested on animals.
Classification: Not a skin irritant
Result: Does not cause skin sensitisation.
Not expected to cause skin sensitisation bases on expert review of the properties of the substance.

Repeated dose toxicity

Difluoromethane:

Inhalation rat
No toxicologically significant effects were found,

Pentafluoroethane:

Inhalation rat
No toxicologically significant effects were found,

Mutagenic assessment

Difluoromethane:

Animal testing did not show any mutagenic effects.
Tests on bacteria or mammalian cell cultures did not show mutagenic effects.

Pentafluoroethane:

Animal testing did not show any mutagenic effects.
Tests on bacteria or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity Assessment

Difluoromethane:

Not classifiable as a human carcinogen.

Pentafluoroethane:

Not classifiable as a human carcinogen.

Toxicity to reproduction assessment

Difluoromethane:

No toxicity to reproduction.

Pentafluoroethane:

No toxicity to reproduction.

Human experience

Excessive exposures may affect human health as follows:
Inhalation: Sever shortness of breath, narcosis, irregular cardiac activity.

Futher information

Rapid evaporation of the liquid may cause frostbite. May cause cardiac arrhythmia.

SAFETY DATA SHEET

Refrigerant Gas R410A

Version 2

Revision Date: 18.07.2013



SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

Toxicity to fish:

Difluoromethane: LC₅₀/96 h/Fish: 1507 mg/l

Pentafluoroethane:

LC₅₀/96 h/Oncorhynchus (rainbow trout): > 81.2 mg/l
Information given is based on data obtained from similar substances.

LC₅₀/96 h/Danio rerio (zebra fish): > 200 mg/l
Information given is based on data obtained from similar substances.

LC₅₀/96 h/Oncorhynchus mykiss (rainbow trout): 450 mg/l
Information given is based on data obtained from similar substances.

Toxicity to Aquatic plants:

Difluoromethane: LC₅₀/96 h/Algae: 142 mg/l

Pentafluoroethane:

LC₅₀/72 h/Pseudokirchneriella subcapitata (green algae): >118 mg/l
Information given is based on data obtained from similar substances.

LC₅₀/72 h/Pseudokirchneriella subcapitata (green algae): >114 mg/l
Information given is based on data obtained from similar substances.

LC₅₀/96 h/Algae: 142 mg/l
Information given is based on data obtained from similar substances.

Toxicity to aquatic invertebrates

Difluoromethane EC₅₀/48 h/Daphnia: 652 mg/l

Pentafluoroethane

EC₅₀/48 h/Daphnia magna (Water flea): > 200 mg/l
Information given is based on data obtained from similar substances.

EC₅₀/48 h/Daphnia magna (Water flea): > 97.9 mg/l
Information given is based on data obtained from similar substances.

EC₅₀/48 h/Daphnia magna (Water flea): > 97.9 mg/l
Information given is based on data obtained from similar substances.

Ecotoxic values: When discharged may contribute to the greenhouse effect.

Global Warming Potential (GWP) 0 (CO₂ = 1)

Ozone Depletion Potential (ODP) 1980 (R11 = 1)

12.2. Persistence and degradability

Persistence and degradability: No data available.

12.3. Bio accumulative potential

Bio-accumulative potential: No data available.

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

SAFETY DATA SHEET

Refrigerant Gas R410A

Version 2

Revision Date: 18.07.2013



PBT identification: No data available

12.6. Other adverse effects

Other adverse effects:

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal operations: Do not allow product to be released into the environment.
Recovery Operations: Consult the manufacturer or supplier for information regarding recovery and recycling of the product. If recovery is not possible, incinerate at a licensed installation.
Disposal of packaging: De-gas and return cylinders to suppliers.
N.B. The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

SECTION 14. TRANSPORT INFORMATION

14.1. ADR

UN Number: 3163
Class: 2
Classification code: 2A
Hazard Identification Number: 20
Labelling Number: 2.2
Proper Shipping Name: Liquefied Gas N.O.S. (Difluoromethane, Pentafluoroethane)
Tunnel code: (C/E)

14.2. IATA_C

UN Number: 3163
Class: 2
Labelling Number: 2.2
Proper Shipping Name: Liquefied Gas N.O.S. (Difluoromethane, Pentafluoroethane)

14.3. IMDG

UN Number: 3163
Class: 2
Labelling Number: 2.2
EmS: F-C, S-V
Proper Shipping Name: Liquefied Gas N.O.S. (Difluoromethane, Pentafluoroethane)
Marine Pollutant: No

SECTION 15. REGULATORY INFORMATION

15.1. Safety, health and environment regulations/legislation specific for the substance or mixture

Special labelling of certain mixtures: Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out by the supplier of this mixture.

16. OTHER INFORMATION

Other information: This safety sheet is prepared in accordance with Commission Regulation (EU) No. 453/2010.
* Indicates text in SDS which has changed since the last revision

Text of R-phrases mentioned in Section 3: R12 Extremely flammable

Full text of H-statements referred under Section 3: H220 Extremely flammable gas
H280 Contains gas under pressure; may explode if heated.

SAFETY DATA SHEET
Refrigerant Gas R410A

Version 2

Revision Date: 18.07.2013



Legal disclaimer: National Refrigerants Ltd. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other methods of use of the product and of the information referred to herein are beyond the control of National Refrigerants Ltd. National Refrigerants Ltd. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

SAFETY DATA SHEET

Refrigerant Gas R410A

Version 2

Revision Date: 18.07.2013



GENERAL SAFETY & HANDLING DATA

1. GENERAL

Only trained persons should handle compressed gases. Observe all regulations and local requirements regarding the storage of Cylinders. Do not remove or deface labels provided by the supplier for the identification of the Cylinder contents. Ascertain the identity of the gas before using it. Know and understand the properties and hazards associated with each gas before using it. When doubt exists as to the correct handling procedure for a particular gas contact the supplier.

HANDLING AND USE

Wear stout gloves. Never lift a Cylinder by the cap or guard unless the supplier states it is designed for that purpose. Use trolley or other suitable device or technique for transporting heavy Cylinders, even for a short distance. Where necessary wear suitable eye and face protection. The choice between safety glasses, chemical goggles, or full face shield will depend on the pressure and nature of the gas being used,

Where necessary for toxic gases see that self-contained positive pressure breathing apparatus or full face airline respirator is available in the vicinity of the working area. Employ suitable pressure regulating device on all Cylinders when gas is being emitted to systems with lower pressure rating than that of the Cylinder. Ascertain that all electrical systems in the area are suitable for service with each gas.

Never use direct flame or electrical heating devices to raise the pressure of a Cylinder, Cylinders should not be subjected to temperatures above 45°C. Never re-compress a gas mixture without consulting the supplier. Never attempt to transfer gases from one Cylinder to another. Do not use Cylinders as rollers or supports, or for any other purpose other than to contain the gas as supplied. Never permit oil, grease or other readily combustible substances to come into contact with valves of Cylinders containing oxygen or other oxidants. Keep Cylinder valves clean and free from contaminants particularly oil and water.

Do not subject Cylinders to mechanical shocks which may cause damage to their valves or safety devices.

Never attempt to repair or modify Cylinder valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Close the Cylinder valve whenever gas is not required even if the Cylinder is still connected to the equipment.

2. STORAGE

Cylinders should be stored in a well-ventilated area. Some gases will require a purpose built area. Store Cylinders in a location free from fire risk and away from sources of heat and ignition. Designate as a no smoking area.

Gas Cylinders should be segregated in the storage according to the various categories.

The storage area should be kept clear and access should be restricted to authorized persons only, the area should be clearly marked as a storage area and appropriate hazard warning signs displayed (Flammable, Toxic etc.).

The amount of flammable or toxic gases should be kept to a minimum.

Flammable gases should be stored away from other combustible materials.

Cylinders held in storage should be periodically checked for general condition and leakage.

Cylinders in storage should be properly secured to prevent toppling or rolling.

Vertical storage is recommended where the Cylinder is designed for this.

Cylinder valves should be tightly closed and, where appropriate, valves should be capped or plugged. Protect Cylinders stored in the open against rusting and extremes of weather.

Cylinders should not be stored in conditions likely to encourage corrosion.

Store full and empty Cylinders separately and arrange full Cylinders so that the oldest stock is used first.

FOR FURTHER INFORMATION CONTACT YOUR NEAREST DISTRIBUTION CENTRE

Nibco

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

1.1. Product identifier

Product form : Article
Product name : Copper Fittings and Components (Cast, Wrought (Wrot) and Forged)
Product code : Not available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Copper fittings and components used in plumbing, piping and other applications

1.3. Details of the supplier of the safety data sheet

NIBCO INC.
1516 Middlebury St.
Elkhart, IN 46516 - USA
General: 574-295-3000 / 800-642-5463
Technical Services: Voice 888-446-4226 / Fax 888-336-4226
MSDSCoordinator@NIBCO.com - <http://www.nibco.com>

1.4. Emergency telephone number

Emergency number : ChemTel: 800-255-3924; International: +01-813-248-0585

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

This product is classified as an "article" under the OSHA HAZCOM 2012, Subpart Z - Toxic & Hazardous Substances, and as such is exempt from the requirement for classification.

2.2. Label elements

GHS-US labelling

This product is classified as an "article" under the OSHA HAZCOM 2012, Subpart Z - Toxic & Hazardous Substances, and as such is exempt from the requirement for labeling.

2.3. Other hazards

No additional information available.

2.4. Unknown acute toxicity (GHS-US)

Not applicable.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable.

3.2. Mixture

Name	Product identifier	%	GHS-US classification
None required.			

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Not applicable for product in finished form.
First-aid measures after skin contact : Not applicable for product in finished form. If irritation occurs, flush skin with plenty of water. Get medical attention if irritation persists.
First-aid measures after eye contact : Not applicable for product in finished form. If irritation occurs, immediately flush eyes with plenty of water. Remove contact lenses, if worn. If irritation persists, get medical attention.
First-aid measures after ingestion : Not applicable for product in finished form.

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

Symptoms/injuries after inhalation : Not a normal route of exposure.
Symptoms/injuries after skin contact : No known adverse effects.
Symptoms/injuries after eye contact : No known adverse effects.
Symptoms/injuries after ingestion : Not a normal route of exposure.

Copper Fittings and Components (Cast, Wrought (Wrot) and Forged)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

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

Not applicable.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Treat for surrounding material.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.3. Advice for firefighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Not applicable.

6.2. Methods and material for containment and cleaning up

For containment : Not applicable for product in finished form.

Methods for cleaning up : Pick up large pieces, then place in a suitable container.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : No special precautions required.

Hygiene measures : Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : No special requirements.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available.

8.2. Exposure controls

Appropriate engineering controls : Ventilation is not normally required.

Hand protection : None necessary under normal conditions of use.

Eye protection : None necessary under normal conditions of use.

Skin and body protection : None necessary under normal conditions of use.

Respiratory protection : Not normally needed.

Environmental exposure controls : Handle in accordance with good industrial hygiene and safety practice.

Other information : Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Various metal articles

Colour : Copper

Odour : Odourless

Odour threshold : No data available

pH : No data available

Melting point : 1981 °F

Freezing point : No data available

Copper Fittings and Components (Cast, Wrought (Wrot) and Forged)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not flammable
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: No data available
Relative density	: 8.94
Relative vapour density at 20 °C	: No data available
Solubility	: Insoluble
Partition coefficient: n-octanol/water	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not applicable.
Skin corrosion/irritation	: Not applicable.
Serious eye damage/irritation	: Not applicable.
Respiratory or skin sensitisation	: Not applicable.
Germ cell mutagenicity	: Not applicable.
Carcinogenicity	: Not applicable.
Reproductive toxicity	: Not applicable.
Specific target organ toxicity (single exposure)	: Not applicable.
Specific target organ toxicity (repeated exposure)	: Not applicable.
Aspiration hazard	: Not applicable.
Symptoms/injuries after inhalation	: Not a normal route of exposure.
Symptoms/injuries after skin contact	: No known adverse effects.
Symptoms/injuries after eye contact	: No known adverse effects.
Symptoms/injuries after ingestion	: Not a normal route of exposure.

Copper Fittings and Components (Cast, Wrought (Wrot) and Forged)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

Copper Fittings and Components (Cast, Wrought (Wrot) and Forged)

Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Copper Fittings and Components (Cast, Wrought (Wrot) and Forged)

Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available.

12.5. Other adverse effects

No additional information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or exempt from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

15.2. US State regulations

Copper Fittings and Components (Cast, Wrought (Wrot) and Forged)

State or local regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 16: Other information

Date of issue : 06/01/2015

Other information : None.

Notice to Reader:

ALTHOUGH THE INFORMATION CONTAINED IN THIS DOCUMENT IS PRESENTED IN GOOD FAITH, BASED ON AVAILABLE INFORMATION BELIEVED TO BE RELIABLE AT THE TIME OF PREPARATION OF THIS DOCUMENT, NIBCO INC MAKES NO WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION OR THE PRODUCT/MATERIALS DESCRIBED HEREIN, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES AND CONDITIONS (INCLUDING ALL WARRANTIES AND CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE). NO FREEDOM FROM INFRINGEMENT OF ANY PATENT OWNED BY NIBCO INC OR OTHERS IS TO BE INFERRED. THIS INFORMATION IS SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CONTACT NIBCO INC FOR THE MOST CURRENT VERSION OF THIS SDS. NIBCO INC DOES NOT ASSUME RESPONSIBILITY FOR SDS OBTAINED FROM THIRD PARTY SOURCES. UNLESS SPECIFICALLY AGREED OTHERWISE, NIBCO INC DOES NOT TAKE RESPONSIBILITY FOR USE, TRANSPORTATION, STORAGE, HANDLING OR DISPOSAL OF THE PRODUCTS DESCRIBED HEREIN.

Nu-Calgon



SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	Evap Pow'R C (4168-08, 4168-05, 4168-01)
Other means of identification	Not available
Recommended use	Evaporator Coil Cleaner
Recommended restrictions	None known.
Manufacturer	Nu-Calgon 2008 Altom Court St. Louis, MO 63146 US Phone: 314-469-7000 / 800-554-5499 Emergency Phone: 1-800-424-9300 (CHEMTREC)

2. Hazards Identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, dermal	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	
Label elements		
Signal word	Warning	
Hazard statement	Harmful in contact with skin. Causes skin irritation. Causes serious eye irritation.	
Precautionary statement		
Prevention	Wash thoroughly after handling. Wear protective gloves/protective clothing. Wear eye/face protection.	
Response	If on skin: Wash with plenty of water. Call a poison center/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. Specific treatment (see this label). Take off contaminated clothing and wash it before reuse. 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.	
Storage	Store away from incompatible materials.	
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.	
Hazard(s) not otherwise classified (HNOC)	None known.	
Supplemental information	1% of the mixture consists of component(s) of unknown acute oral toxicity. 91% of the mixture consists of component(s) of unknown acute inhalation toxicity.	

3. Composition/Information on Ingredients

Mixture			
Chemical name	Common name and synonyms	CAS number	%
Ethanol, 2-butoxy-		111-76-2	3 - 7
Sodium xylene sulphonate		1300-72-7	3 - 7
Alcohols, C7-21, ethoxylated		68991-48-0	1 - 5

Composition comments	US GHS: The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

4. First Aid Measures

Inhalation	If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.

Skin contact	If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Specific treatment (see product label). Call a poison center/doctor if you feel unwell.
Eye contact	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.
Ingestion	Rinse mouth. Do not induce vomiting. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Treat patient symptomatically.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Wash contaminated clothing before reuse. Keep out of reach of children.

5. Fire Fighting Measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide.
Unsuitable extinguishing media	Not available.
Specific hazards arising from the chemical	Firefighters should wear a self-contained breathing apparatus.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Fire-fighting equipment/instructions	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	No unusual fire or explosion hazards noted.
Hazardous combustion products	May include and are not limited to: Oxides of carbon. Oxides of sulfur.
Explosion data	
Sensitivity to mechanical impact	Not available.
Sensitivity to static discharge	Not available.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Keep people away from and upwind of spill/leak. Keep out of low areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. 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	Stop leak if you can do so without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Never return spills to original containers for re-use. Clean surface thoroughly to remove residual contamination. Following product recovery, flush area with water. Prevent entry into waterways, sewer, basements or confined areas. For waste disposal, see section 13 of the SDS.
Environmental precautions	Do not discharge into lakes, streams, ponds or public waters.

7. Handling and Storage

Precautions for safe handling	Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists of this product. Wear appropriate personal protective equipment. Use only with adequate ventilation. Observe good industrial hygiene practices. Wash thoroughly after handling. When using do not eat or drink.
Conditions for safe storage, including any incompatibilities	Store in a closed container. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children.

8. Exposure Controls/Personal Protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Ethanol, 2-butoxy- (CAS 111-76-2)	PEL	240 mg/m3 50 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Ethanol, 2-butoxy- (CAS 111-76-2)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Ethanol, 2-butoxy- (CAS 111-76-2)	TWA	24 mg/m3 5 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Ethanol, 2-butoxy- (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines Chemicals listed in section 3 that are not listed here do not have established limit values for ACGIH or OSHA PEL.

Appropriate engineering controls Ensure adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields.

Skin protection

Hand protection Rubber gloves. Confirm with a reputable supplier first.

Other As required by employer code.

Respiratory protection Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.

Thermal hazards Not applicable.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using do not eat or drink.

9. Physical and Chemical Properties

Appearance	Clear
Physical state	Liquid.
Form	Liquid
Color	Green
Odor	butyl
Odor threshold	Not available.
pH	7.9 (Concentrate)
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Pour point	Not available.
Specific gravity	Not available.
Partition coefficient (n-octanol/water)	Not available
Flash point	Not available
Evaporation rate	Not available
Flammability (solid, gas)	Not applicable.

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	Not available
Vapor density	Not available
Relative density	Not available.
Solubility(ies)	Not available.
Auto-ignition temperature	Not available
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Percent volatile	Not available

10. Stability and Reactivity

Reactivity	May react with incompatible materials.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with other chemicals.
Incompatible materials	Strong oxidizing agents. Acids.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon. Oxides of sulfur.

11. Toxicological Information

Routes of exposure Eye, Skin contact, Skin absorption, Inhalation, Ingestion.

Information on likely routes of exposure

Ingestion	Expected to be a low ingestion hazard. May cause stomach distress, nausea or vomiting.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Harmful in contact with skin.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.

US. NIOSH: Pocket Guide to Chemical Hazards

Ethanol, 2-butoxy- (CAS 111-76-2)

Can be absorbed through the skin.

Eye contact Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Harmful in contact with skin.

Components	Species	Test Results
1-Dodecanamine, N,N-dimethyl-,N-oxide (CAS 1643-20-5)		
Acute		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Mouse	2700 mg/kg

Components	Species	Test Results
Alcohols, C7-21, ethoxylated (CAS 68991-48-0)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Not available	
Oral		
LD50	Rat	1410 mg/kg
Ethanol, 2-butoxy- (CAS 111-76-2)		
Acute		
Dermal		
LD50	Guinea pig	207 mg/kg
	Rabbit	400 mg/kg
		220 mg/kg
		99 mg/kg
	Rat	99 mg/kg
Inhalation		
LC50	Mouse	700 ppm, 7 Hours
	Rat	450 ppm, 4 Hours
		2.2 mg/L, 4 Hours
Oral		
LD50	Guinea pig	1200 mg/kg
	Mouse	1200 mg/kg
	Rabbit	320 mg/kg
	Rat	470 mg/kg
Sodium xylene sulphonate (CAS 1300-72-7)		
Acute		
Dermal		
LD50	Not available	
Inhalation		
LC50	Rat	557 mg/l/4h
Oral		
LD50	Rat	6500 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Exposure minutes	Not available.	
Erythema value	Not available.	
Oedema value	Not available.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Corneal opacity value	Not available.	
Iris lesion value	Not available.	
Conjunctival reddening value	Not available.	
Conjunctival oedema value	Not available.	
Recover days	Not available.	
Respiratory or skin sensitization		
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitization.	
US. NIOSH: Pocket Guide to Chemical Hazards		
Ethanol, 2-butoxy- (CAS 111-76-2)	Can be absorbed through the skin.	
US. NIOSH: Pocket Guide to Chemical Hazards		
Ethanol, 2-butoxy- (CAS 111-76-2)	Can be absorbed through the skin.	
Germ cell mutagenicity	Not classified.	

Mutagenicity	Not classified.
Carcinogenicity	See below.
ACGIH Carcinogens	
Ethanol, 2-butoxy- (CAS 111-76-2)	A3 Confirmed animal carcinogen with unknown relevance to humans.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Ethanol, 2-butoxy- (CAS 111-76-2)	Volume 88 - 3 Not classifiable as to carcinogenicity to humans.
Reproductive toxicity	Not classified.
Teratogenicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not classified.
Chronic effects	Prolonged inhalation may be harmful.
	2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.
Further information	Not available.
Name of Toxicologically Synergistic Products	Not available.

12. Ecological Information

Ecotoxicity	See below		
Components		Species	Test Results
Ethanol, 2-butoxy- (CAS 111-76-2)			
Crustacea	EC50	Daphnia	1819 mg/L, 48 Hours
Aquatic			
Fish	LC50	Inland silverside (Menidia beryllina)	1250 mg/L, 96 hours
Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Mobility in general	Not 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	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	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

General	Canada: TDG Proof of Classification: In accordance with Part 2.2.1 (SOR/2014-152) of the Transportation of Dangerous Goods Regulations, we certify that the classification of this product is correct as of the SDS date of issue. If applicable, the technical name and the classification of the product will appear below.
U.S. Department of Transportation (DOT)	
Not regulated as dangerous goods.	
Transportation of Dangerous Goods (TDG - Canada)	
Not regulated as dangerous goods.	

15. Regulatory Information

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

Canada CEPA Schedule I: Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Canada NPRI VOCs with Additional Reporting Requirements: Mass reporting threshold/Identification Number

Ethanol, 2-butoxy- (CAS 111-76-2) 1 TONNES

Canada Priority Substances List (Second List): Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Canada WHMIS Ingredient Disclosure: Threshold limits

1-Dodecanamine, N,N-dimethyl-,N-oxide (CAS 1643-20-5) 1 %

Ethanol, 2-butoxy- (CAS 111-76-2) 1 %

WHMIS status Controlled

WHMIS classification Class D - Division 2B

WHMIS labeling



US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Ethanol, 2-butoxy- (CAS 111-76-2) 1.0 % N230

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed. N230

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

US CAA Section 111 Volatile Organic Compounds: Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Ethanol, 2-butoxy-	111-76-2	3 - 7

Other federal regulations

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

US state regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - California Hazardous Substances (Director's): Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

US - Illinois Chemical Safety Act: Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

US - Louisiana Spill Reporting List: Reportable quantity (total mass into atmosphere)

Ethanol, 2-butoxy- (CAS 111-76-2) 100 LBS

US - Louisiana Spill Reporting: Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

US - Minnesota Haz Subs: Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

US - New Jersey RTK - Substances: Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

US - Texas Effects Screening Levels: Listed substance

1-Dodecanamine, N,N-dimethyl-,N-oxide (CAS 1643-20-5) Listed.

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Sodium xylene sulphonate (CAS 1300-72-7) Listed.

US. Massachusetts RTK - Substance List

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

US. Pennsylvania RTK - Hazardous Substances

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

US. Rhode Island RTK

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Inventory status

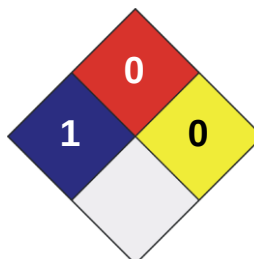
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	/ 1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

**Disclaimer**

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date 22-September-2015**Effective date** 22-September-2015**Expiry date** 22-September-2018**Further information** For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.**Prepared by** Nu-Calgon Technical Service Phone: (314) 469-7000

Other information This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard (HCS) adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).
This SDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.



SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	NU-BRITE (4291-01, 4291-05, 4291-08, 4891-08)
Other means of identification	Not available
Recommended use	Coil Cleaner / Degreaser
Recommended restrictions	None known.
Manufacturer information	Nu-Calgon 2008 Altom Court St. Louis, MO 63146 US Phone: 314-469-7000 / 800-554-5499 Emergency Phone: 1-800-424-9300 (CHEMTREC)
Supplier	See above.

2. Hazards Identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
Environmental hazards	Not classified.	
WHMIS 2015 defined hazards	Not classified	
Label elements		



Signal word Danger

Hazard statement
May be corrosive to metals.
Causes severe skin burns and eye damage.

Precautionary statement

Prevention

Keep only in original packaging.
Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response

Absorb spillage to prevent material-damage. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. 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. Immediately call a POISON CENTER/doctor. Specific treatment (see information on this label).

Storage

Store in a corrosion resistant container with a resistant inner liner.
Store locked up.

Disposal

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

WHMIS 2015: Health Hazard(s) not otherwise classified (HHNOC)

None known

WHMIS 2015: Physical Hazard(s) not otherwise classified (PHNOC)

None known

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

Not applicable.

3. Composition/Information on Ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Sodium hydroxide		1310-73-2	15-40
Alkyl polyglycoside		110615-47-9	1-5

Composition comments

US GHS: The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

4. First Aid Measures

Inhalation	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
Skin contact	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Specific treatment (see information on this label). Wash contaminated clothing before reuse. Immediately call a POISON CENTER/doctor.
Eye contact	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/doctor.
Ingestion	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance. Use of an impervious apron is recommended. Avoid contact with eyes and skin. Wear rubber gloves and chemical splash goggles. Keep out of reach of children.

5. Fire Fighting Measures

Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Firefighters should wear a self-contained breathing apparatus.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Fire-fighting equipment/instructions	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.
Hazardous combustion products	May include and are not limited to: Oxides of carbon.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep out of low areas. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. 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	Large Spills: Stop leak if you can do so without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Small Spills: 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.
Environmental precautions	Never return spills to original containers for re-use. Avoid discharge into drains, water courses or onto the ground. Do not discharge into lakes, streams, ponds or public waters.

7. Handling and Storage

Precautions for safe handling	Avoid prolonged exposure. Wear appropriate personal protective equipment. Wash thoroughly after handling. Ensure adequate ventilation. Do not get in eyes, on skin or on clothing. Use good industrial hygiene practices in handling this material. Keep container tightly closed. Avoid breathing vapors or mists of this product.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in a corrosion resistant container with a resistant inner liner. Store in a closed container away from incompatible materials. Keep only in the original container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure Controls/Personal Protection

Occupational exposure limits

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Chemicals listed in section 3 that are not listed here do not have established limit values for ACGIH.

Appropriate engineering controls

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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear chemical goggles.

Skin protection

Hand protection

Rubber gloves. Confirm with a reputable supplier first.

Other

Wear appropriate chemical resistant clothing. As required by employer code. Rubber apron recommended.

Respiratory protection

Avoid breathing mists or vapors.
Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator 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), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).

Thermal hazards

Not applicable.

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 to remove contaminants. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance	Liquid
Physical state	Liquid.
Form	Liquid.
Color	Blue
Odor	Characteristic, Mild
Odor threshold	Not available.
pH	12.7 (1%) 14 (Concentrate)
Melting point/freezing point	32 °F (0 °C)
Initial boiling point and boiling range	212 °F (100 °C)
Pour point	Not available.
Specific gravity	1.24
Partition coefficient (n-octanol/water)	Not available
Flash point	None to boiling
Evaporation rate	Equal to water
Flammability (solid, gas)	Not applicable.
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	Not available
Vapor density	Not available
Relative density	Not available.
Solubility(ies)	Complete
Auto-ignition temperature	Not available
Decomposition temperature	Not available.
Viscosity	Water thin
Other information	
Bulk density	10.36 lb/gal
VOC (Weight %)	None

10. Stability and Reactivity

Reactivity	Reacts violently with acids. This product may react with oxidizing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with other chemicals. Hazardous vapours may be produced when mixed with chlorinated detergents or sanitizers.
Incompatible materials	Oxidizing agents. Acids.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon.

11. Toxicological Information

Routes of exposure	Eye, Skin contact, Inhalation, Ingestion.
Information on likely routes of exposure	
Ingestion	Causes digestive tract burns.

Inhalation	Prolonged inhalation may be harmful. May cause irritation to the respiratory system.	
Skin contact	Causes severe skin burns.	
Eye contact	Causes serious eye damage.	
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.	
Information on toxicological effects		
Acute toxicity		
Components	Species	Test Results
Alkyl polyglycoside (CAS 110615-47-9)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg
Sodium hydroxide (CAS 1310-73-2)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1350 mg/kg
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Not available	
Skin corrosion/irritation	Causes severe skin burns and eye damage.	
Exposure minutes	Not available.	
Erythema value	Not available.	
Oedema value	Not available.	
Serious eye damage/eye irritation	Causes serious eye damage.	
Corneal opacity value	Not available.	
Iris lesion value	Not available.	
Conjunctival reddening value	Not available.	
Conjunctival oedema value	Not available.	
Recover days	Not available.	
Respiratory or skin sensitization		
Canada - Alberta OELs: Irritant		
Sodium hydroxide (CAS 1310-73-2)	Irritant	
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.	
Carcinogenicity	Non-hazardous by WHMIS/OSHA criteria.	
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Not listed.		
Reproductive toxicity	Non-hazardous by WHMIS/OSHA criteria.	
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not available.	
Chronic effects	Prolonged inhalation may be harmful. Non-hazardous by WHMIS/OSHA criteria.	

12. Ecological Information

Ecotoxicity	Components of this product have been identified as having potential environmental concerns. See below		
Ecotoxicological data			
Components		Species	Test Results
Sodium hydroxide (CAS 1310-73-2)			
Aquatic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	34.59 - 47.13 mg/L, 48 hours
Fish	LC50	Western mosquitofish (Gambusia affinis)	125 mg/L, 96 hours
Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Mobility in general	Not 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

Transport of Dangerous Goods (TDG) Proof of Classification	In accordance with Part 2.2.1 (SOR/2014-152) of the Transportation of Dangerous Goods Regulations, we certify that the classification of this product is correct as of the SDS date of issue.
U.S. Department of Transportation (DOT)	
Basic shipping requirements:	
UN number	UN3266
Proper shipping name	Corrosive liquid, basic, inorganic, n.o.s.
Technical name	Sodium hydroxide
Hazard class	8
Packing group	II
Special provisions	386, B2, IB2, T11, TP2, TP27
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242
Transportation of Dangerous Goods (TDG - Canada)	
Basic shipping requirements:	
UN number	UN3266
Proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
Technical name	SODIUM HYDROXIDE
Hazard class	8
Packing group	II
Special provisions	16
Packaging exceptions	<1L - Limited Quantity
IATA/ICAO (Air)	
Basic shipping requirements:	
UN number	UN3266
Proper shipping name	Corrosive liquid, basic, inorganic, n.o.s.
Technical name	Sodium hydroxide
Hazard class	8
Packing group	II

IMDG (Marine Transport)**Basic shipping requirements:**

UN number	UN3266
Proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
Technical name	Sodium hydroxide
Hazard class	8
Packing group	II

DOT**IATA; IMDG; TDG**

15. Regulatory Information

Canadian federal regulations This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (SOR/2015-17) and the SDS contains all the information required by the HPR.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

WHMIS 2015 Exemptions

Not applicable

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) Listed.

US. 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 - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

No

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.

**Clean Water Act (CWA)
Section 112(r) (40 CFR
68.130)**

Hazardous substance

US state regulations**US - California Hazardous Substances (Director's): Listed substance**

Sodium hydroxide (CAS 1310-73-2) Listed.

US - Illinois Chemical Safety Act: Listed substance

Sodium hydroxide (CAS 1310-73-2)

US - Louisiana Spill Reporting: Listed substance

Sodium hydroxide (CAS 1310-73-2) Listed.

US - Minnesota Haz Subs: Listed substance

Sodium hydroxide (CAS 1310-73-2) Listed.

US - New Jersey RTK - Substances: Listed substance

Sodium hydroxide (CAS 1310-73-2)

US - Texas Effects Screening Levels: Listed substance

Sodium hydroxide (CAS 1310-73-2) Listed.

US. Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)

US. Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

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.

Inventory status

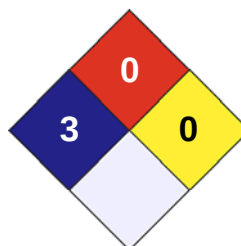
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	/ 3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date

31-October-2016

Version #

01

Effective date

31-October-2016

Prepared by

Nu-Calgon Technical Service Phone: (314) 469-7000

Other information

For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.



SAFETY DATA SHEET

Sid Harvery item #'s 4182-08, 4182-24 & 4182-53

SDS # Z0402

1. Product and Company Identification

Product identifier	Cal-Blue Plus Gas Leak Detector (4182-01, 4182-08, 4182-24, 4182-53)
Other means of identification	Not available
Recommended use	Gas Leak Detector
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer	
Company name	Nu-Calgon
Address	2008 Altom Court St. Louis, MO 63146 United States
Telephone	314-469-7000 / 800-554-5499
E-mail	info@nucalgon.com
Emergency phone number	1-800-424-9300 (CHEMTREC)

2. Hazards Identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Not applicable.

3. Composition/Information on Ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
1,2-Propanediol		57-55-6	25

4. First Aid Measures

Inhalation	Not a normal route of exposure. If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
Skin contact	Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.
Eye contact	Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists.
Ingestion	Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.
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

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Suitable extinguishing media

Alcohol resistant foam. 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

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

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

No unusual fire or explosion hazards noted.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Keep out of low areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Stop the flow of material, if this is without risk.

Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and Storage

Precautions for safe handling

Ensure adequate ventilation. Avoid prolonged exposure. Use care in handling/storage. Avoid contact with eyes, skin and clothing.

Conditions for safe storage, including any incompatibilities

Keep away from heat, open flames or other sources of ignition. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure Controls/Personal Protection

Occupational exposure limits

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components

Type

Value

Form

1,2-Propanediol (CAS 57-55-6)

TWA

10 mg/m³

Aerosol.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

See above

Appropriate engineering controls

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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Safety goggles or glasses.

Skin protection

Hand protection

Rubber gloves. Confirm with a reputable supplier first.

Other

As required by employer code. Wear suitable protective clothing.

Respiratory protection

Not normally required if good ventilation is maintained. Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.

Thermal hazards

Not applicable.

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 to remove contaminants.

9. Physical and Chemical Properties

Appearance	Clear
Physical state	Liquid.
Form	Liquid.
Color	Blue
Odor	Neutral
Odor threshold	Not available.
pH	8.1 - 8.5 (Concentrate)
Melting point/freezing point	15 °F (-9.44 °C)
Initial boiling point and boiling range	Not available.
Pour point	Not available.
Specific gravity	Not available.
Partition coefficient (n-octanol/water)	Not available
Flash point	Not available.
Evaporation rate	Not available
Flammability (solid, gas)	Not applicable.
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	Not available
Vapor density	Not available
Relative density	Not available.
Solubility(ies)	Not available.
Auto-ignition temperature	Not available
Decomposition temperature	Not available.
Viscosity	325 - 425 cPs

10. Stability and Reactivity

Reactivity	This product may react with strong oxidizing agents.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Do not mix with other chemicals.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon. Oxides of nitrogen.

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		
Components	Species	Test Results
1,2-Propanediol (CAS 57-55-6)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20800 mg/kg
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Dog	19000 mg/kg
	Guinea pig	184000 mg/kg
	Mouse	23900 mg/kg
	Rabbit	14800 mg/kg
	Rat	20000 mg/kg
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Exposure minutes	Not available.	
Erythema value	Not available.	
Oedema value	Not available.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	
Corneal opacity value	Not available.	
Iris lesion value	Not available.	
Conjunctival reddening value	Not available.	
Conjunctival oedema value	Not available.	
Recover days	Not available.	
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	This product is not considered to be a carcinogen by IARC, NTP, or OSHA.	
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not available.	
Chronic effects	Prolonged inhalation may be harmful.	
Further information	This product has no known adverse effect on human health.	

12. Ecological Information

Ecotoxicity	See below		
Components		Species	Test Results
1,2-Propanediol (CAS 57-55-6)			
Crustacea	EC50	Daphnia	10000 mg/L, 48 Hours
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	710 mg/l, 96 hours
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)	
1,2-Propanediol	-0.92
Mobility in soil	No data available.
Mobility in general	Not 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.
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

U.S. Department of Transportation (DOT)	Not regulated as dangerous goods.
Transportation of Dangerous Goods (TDG - Canada)	Not regulated as dangerous goods.
IATA/ICAO (Air)	Not regulated as dangerous goods.
IMDG (Marine Transport)	Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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 No

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.

Food and Drug Administration (FDA) Not regulated.

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

1,4-Dioxane (CAS 123-91-1) Listed.
Formaldehyde (CAS 50-00-0) Listed.

US - Minnesota Haz Subs: Listed substance

1,2-Propanediol (CAS 57-55-6) Listed.

US - New Jersey RTK - Substances: Listed substance

1,2-Propanediol (CAS 57-55-6) Listed.

US. Massachusetts RTK - Substance List

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

1,2-Propanediol (CAS 57-55-6) Listed.

US. Rhode Island RTK

Not regulated.

Country(s) or region

United States & Puerto Rico

Inventory name

Toxic Substances Control Act (TSCA) Inventory

On inventory (yes/no)*

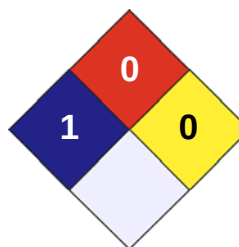
Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	/ 1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date

22-September-2014

Further information

For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.

Other information

This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard (HCS) adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Prepared by

Nu-Calgon Technical Service Phone: (314) 469-7000



MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<u>Company Name</u> Nu-Calgon Wholesaler, Inc.	<u>Phone Number</u> (314) 469-7000 / (800) 554-5499		<u>CHEMTREC</u> (800) 424-9300	
<u>Street Address</u> 2008 Altom Court	<u>City</u> St. Louis	<u>State</u> MO	<u>Postal Code</u> 63146-4151	<u>Last Update</u> 1/25/07
<u>Product Name</u> Cal-Blue Plus Gas Leak Detector	<u>Product Number</u> 4182	<u>Product Use</u> Gas Leak Detector		<u>EPA Registration #</u> N/A

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	% By Wt.	CAS Number	TLV	PEL
Ethylene Glycol	15-25%	107-21-1	50ppm (ACGIH Ceiling)	50ppm
Surfactant Mixture	1-5%	Proprietary	None Established	None Established
Water	60-80%	7732-18-5	None Established	None Established
Other ingredients are present at less than 1% or are trade secrets.				

SECTION 3 – HAZARD IDENTIFICATION

Emergency Overview: Contains Ethylene Glycol - do not use in food, drug, cosmetic or potable water applications. Harmful or fatal if swallowed - aspiration hazard if swallowed - can enter lungs and cause damage. Can cause kidney and liver damage if swallowed. Do not get in eyes, on skin or clothing. Avoid breathing spray or mist. Use only with adequate personal protection equipment.

Potential Health Effects

Eyes: Prolonged or repeated contact with eyes may cause irritation, reddening and drying.

Skin: Prolonged or repeated contact with skin may cause irritation, reddening, drying and cracking of skin. Absorption through skin possible. See warnings for chronic or long term skin exposure.

Ingestion: Material is toxic. Harmful or fatal if swallowed - may cause nausea, central nervous system damage, headache, weakness, confusion, slurred speech, loss of coordination, cardiopulmonary effects, cardiac failure, coma and convulsions. Aspiration hazard if swallowed - can enter lungs and cause damage. Can cause kidney and liver damage if swallowed. Lethal dose is approximately 20 ounces based on toxicity of ethylene glycol.

Inhalation: Vapors or mists in excess of permissible concentrations, or in unusually high concentrations as from exposure in poorly ventilated areas or confined spaces may cause irritation of nose and throat, headache, nausea, and drowsiness. Prolonged or repeated overexposure may cause ingestion effects.

Chronic Exposure: Repeated ingestion or overexposure to ethylene glycol may cause birth defects based on animal data as well as kidney and liver damage, and nervous system damage. Repeated contact with skin may result in absorption of harmful amounts.

Carcinogenicity: None

Medical Conditions Aggravated by Exposure: Preexisting kidney disorders, lung disorders, and dermatitis.

SECTION 4 – FIRST AID MEASURES

Eyes: Immediately flush with water for at least 15 minutes and call a physician. Hold eyelids apart while flushing to rinse entire surface.

Skin: Remove contaminated clothing. Wash with large amounts of soap and water for several minutes. Consult a physician in the case of any prolonged irritation.

Ingestion: If person is conscious and can swallow, immediately give 2 glasses of water and induce vomiting. After vomiting occurs, give fluids again. Contact a physician IMMEDIATELY!

Inhalation: Remove to fresh air. Start artificial respiration if necessary. Oxygen may be administered. Call a physician.

SECTION 5 – FIREFIGHTING MEASURES

Flash Point: >220°F

Autoignition Temp: N/A°C/N/A°F

Hazardous Products of Combustion: Burning can produce oxides of carbon and other substances.

Flammable Limits in Air: N/A

Extinguishing Media: This product is not combustible. Water spray, foam, CO2 or dry chemicals may be used in areas where this product is stored.

Fire and Explosion Hazards: Do not enter confined fire-spaces without protective clothing and self-contained air supply.

Special Firefighting Procedures: Do not enter confined fire-spaces without protective clothing and self-contained air supply.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill or Leak: Safely stop spill at source. Contain spill by diking with soil or other inert material. Mop, pump or absorb with inert material and reclaim into sound container for proper disposal. Prevent entry into sewers and waterways.

SECTION 7 – HANDLING AND STORAGE

Handling Procedures and Equipment: Minimum feasible handling temperatures should be maintained. Wash thoroughly after handling. Avoid contact with eyes, skin and clothing. Avoid breathing mists or vapors. Harmful or fatal if swallowed.

Storage Requirements: Keep container closed when not in use. For industrial use only.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: Use with adequate ventilation. Specific use conditions (spraying/confined spaces) where regulatory limits for ethylene glycol are exceeded, may require local exhaust ventilation to prevent release of mist &/or vapors into work environment. If ventilation is not adequate, use NIOSH/MSHA approved respirator.

Eye Protection: Safety Glasses/Goggles

Protective Clothing: Chemical resistant gloves recommended. No special requirements - work clothing appropriate to minimize contact/reduce exposed skin area.

Exposure Guidelines: Ethylene Glycol TLV = 50ppm. Eye wash station and safety shower in handling area.

Specific Engineering Controls (such as ventilation, enclosed process): Insure adequate ventilation to control ethylene glycol airborne concentration below TLV of 50ppm. Eye wash station and safety shower in handling area.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Viscous Liquid	Freezing Point: -9°C/15°F	% Volatile by Weight: ~78%
Color: Clear, Blue	Vapor Density [air =1]: Not Determined	Evaporation Rate: vs. H2O: about the same
Odor: Characteristic Mild Odor	Vapor Pressure: Not Determined	Specific Gravity: (H2O=1): 1.0 (+/- 0.05)
Boiling Point: 100°C/212 (IBP)°F	Solubility in Water: Complete	pH (concentrate): 8.3 (+/- 0.5)

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: Stable

Hazardous Polymerization: None

Incompatibilities: Strong acids/oxidizers. Do not mix with chlorinated detergents (bleach).

Reactive Conditions to avoid: N/A

Decomposition Products: Burning can produce oxides of carbon, as well as aldehydes, Ketones, and other substances.

SECTION 11 – TOXICOLOGICAL INFORMATION

Hazardous Ingredients	CAS #	EINECS #	LD 50 of Ingredient (Specify Species)	LC50 of Ingredient (Specify Species)
Ethylene Glycol	107-21-1	203-473-3	1000mg/kg (human)	130mg/m3 (mouse, 2hr)

SECTION 12 – ECOLOGICAL INFORMATION

<u>Hazardous Ingredients</u>	<u>Aquatic Toxicity Data</u>
Ethylene Glycol	LC50 (96hr) Rainbow Trout = 41,000 mg/l

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of in an approved waste facility according to Federal, State and local regulations.

SECTION 14 – TRANSPORTATION INFORMATION

Special Shipping Information: No Data.

<u>Purview</u>	<u>Proper Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
DOT (Land)	Not Regulated in containers 55 gal or less			
IMO (Water)	No Data.			
ICAO (Air)	No Data.			

SECTION 15 – REGULATORY INFORMATION

WHMIS Classification: (Workplace Hazardous Material Information System)	Class D - Division 2A - Teratogen
SARA Title III: (Superfund Amendments & Reauthorization Act)	Contains Ethylene Glycol at 15-25% by weight.
OSHA: (Occupational Safety & Health Administration)	OSHA Hazardous - Acute & Chronic hazard
TSCA: (Toxic Substance Control Act)	All ingredients are TSCA registered.
VOC: (volatile Organic Compounds)	Less than 1%
CPR: (Canadian Controlled Products Regulations)	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations
EINECS: (European Inventory of Existing Commercial Chemical Substances)	No Data.
DSL / NDSL: (Canadian Domestic Substance List)(Non-Domestic Substance List)	Not all ingredients within this product are on the DSL and/or NDSL.
CERCLA: (Comprehensive Response Compensation & Liability Act)	>5,000 lbs
IDL: (Canadian Ingredient Disclosure List)	Ethylene glycol is listed. Other ingredients are below disclosure.
NFPA (HMIS) Rating: (Hazardous Materials Identification System)	Health = 2* Flammability = 0 Reactivity = 0

SECTION 16 – OTHER INFORMATION

The antidotes for ethylene glycol poisoning are ethanol or fomepizole; antidotal treatment forms the mainstay of management following ingestion. Ethanol (usually given IV as a 5 or 10% solution in 5% dextrose and water, but, also sometimes given in the form of a strong spirit such as whisky, vodka or gin) acts by competing with ethylene glycol for the enzyme alcohol dehydrogenase thus limiting the formation of toxic metabolites.

The information contained herein is based on the data available to us and is believed to be correct. However, Nu-Calgon Wholesaler Inc. makes no warranty, expressed, or implied, regarding the accuracy of this data or the results to be obtained from the use thereof. Nu-Calgon Wholesaler Inc. assumes no liability for injury from the use of the product described herein.

Oatey



SAFETY DATA SHEET

1. Identification

Product identifier Oatey No. 5 Paste Flux

Other means of identification

SDS number 1610E

Synonyms Part Numbers: No 5- 30011, 30013, 30014, 30038, 30041, 48307, 48420, 48421, 48422, 48423, 53017, 53060, 53200, Hot Weather- 30062

Recommended use Joining Copper Pipes. Joining Copper Tubing.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Oatey Co.

Address 4700 West 160th St.
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 Not classified.

Health hazards Skin corrosion/irritation Category 1B
Serious eye damage/eye irritation Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes severe skin burns and eye damage.

Precautionary statement

Prevention Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dusts or mists.

Response If swallowed: Rinse mouth. Do not induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage Store locked up.

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Petrolatum	8009-03-8	60-100

Zinc chloride	7646-85-7	10-30
Water	7732-18-5	3-7
Ammonium chloride	12125-02-9	1-5

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Call a physician or poison control center immediately. Remove contact lenses, if present and easy to do.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical 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. 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.

5. Fire-fighting measures

Suitable extinguishing media	Water spray. Water fog. Foam. 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	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	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
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. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. 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	Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike far ahead of spill for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. 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 get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in original tightly closed container. 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	Form
Petrolatum (CAS 8009-03-8)	PEL	5 mg/m3	Mist.
Zinc chloride (CAS 7646-85-7)	PEL	1 mg/m3	Fume.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m3	Fume.
	TWA	10 mg/m3	Fume.
Petrolatum (CAS 8009-03-8)	TWA	5 mg/m3	Inhalable fraction.
Zinc chloride (CAS 7646-85-7)	STEL	2 mg/m3	Fume.
	TWA	1 mg/m3	Fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m3	Fume.
	TWA	10 mg/m3	Fume.
Petrolatum (CAS 8009-03-8)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Zinc chloride (CAS 7646-85-7)	STEL	2 mg/m3	Fume.
	TWA	1 mg/m3	Fume.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Occupational Exposure Limits are not relevant to the current physical form of the product.

Appropriate engineering controls

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

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

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 to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Solid.

Form

Solid. Paste.

Color

Not available.

Odor

Not available.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point	Not available.
Initial boiling point and boiling range	638 °F (336.67 °C)
Flash point	540.0 °F (282.2 °C)
Evaporation rate	Not available.
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	Not available.
Vapor density	> 1
Relative density	1.1
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	20000 - 40000 cP
Other information	
VOC (Weight %)	29 g/l 3% by weight

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	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
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 None known.

IARC Monographs. Overall Evaluation of Carcinogenicity

Petrolatum (CAS 8009-03-8)

3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not available.

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.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

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

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.

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)

Ammonium chloride (CAS 12125-02-9)	LISTED
Zinc chloride (CAS 7646-85-7)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes
	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)

Chemical name	CAS number	% by wt.
Zinc chloride	7646-85-7	10-30
Ammonium chloride	12125-02-9	1-5

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**

Ammonium chloride (CAS 12125-02-9)
 Petrolatum (CAS 8009-03-8)
 Zinc chloride (CAS 7646-85-7)

US. New Jersey Worker and Community Right-to-Know Act

Ammonium chloride (CAS 12125-02-9)
 Petrolatum (CAS 8009-03-8)
 Zinc chloride (CAS 7646-85-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Ammonium chloride (CAS 12125-02-9)
 Petrolatum (CAS 8009-03-8)
 Zinc chloride (CAS 7646-85-7)

US. Rhode Island RTK

Ammonium chloride (CAS 12125-02-9)
 Zinc chloride (CAS 7646-85-7)

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)	No
Korea	Existing Chemicals List (ECL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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 26-October-2014

Revision date 19-February-2015

Version # 03

HMIS® ratings
Health: 3
Flammability: 0
Physical hazard: 0

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. 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 use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.



SAFETY DATA SHEET

1. Identification

Product identifier	Oatey Clear Primer - NSF Listed for CPVC and PVC
Other means of identification	
SDS number	1402E
Synonyms	Part Numbers: 30749, 30750, 30751, 30752, 30753, 30754, 31652, 31653
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Oatey Co.
Address	4700 West 160th St. 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.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

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 (CO ₂).
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. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

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
	TWA	50 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm
	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m ³ 250 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m ³ 25 ppm
Furan, Tetrahydro- (CAS 109-99-9)	STEL	735 mg/m ³ 250 ppm
	TWA	590 mg/m ³ 200 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	885 mg/m ³ 300 ppm
	TWA	590 mg/m ³ 200 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	*
	8 mg/l	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).

Skin protection**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.
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.
Hazardous decomposition products	No hazardous decomposition products are known.

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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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.
Aspiration 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.

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.**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
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 14-August-2014
Revision date 17-December-2014
Version # 02
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. Oatey Co. 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.



SAFETY DATA SHEET

1. Identification

Product identifier	Oatey Purple Primer- NSF Listed for PVC and CPVC
Other means of identification	
Product code	1402E
Synonyms	Part Numbers: 30755(TV), 30756(TV), 30757(TV), 30758, 30759, 30927
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Oatey Co.
Address	4700 West 160th St. 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.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	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	25-40
Cyclohexanone	108-94-1	25-40
Furan, Tetrahydro-	109-99-9	15-30
Methyl ethyl ketone	78-93-3	15-30

*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. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

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	*
	8 mg/l	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).

Skin protection	
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

Physical state	Liquid.
Form	Translucent liquid.
Color	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 (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.84 +/- 0.02 @20°C
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	7 lb/gal
VOC (Weight %)	505 g/l SQACMD Method 24

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.

Hazardous decomposition products

No hazardous decomposition products are known.

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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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.
Aspiration 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 = 26274 LBS, Acetone RQ = 13130 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 Not available.

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.

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.

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)*
Canada	Domestic Substances List (DSL)	Yes
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	27-May-2015
Revision date	-
Version #	01
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0

NFPA ratings**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. 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.



SAFETY DATA SHEET

1. Identification

Product identifier	Oatey Clear or Purple Primer Cleaner	
Other means of identification		
SDS number	1401E	
Synonyms	Part Numbers: 30780, 30783, 30796, 30806, 30768	
Recommended use	Joining PVC Pipes	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Company name	Oatey Co.	
Address	4700 West 160th Street	
Telephone	216-267-7100	Outside US 703-527-3887
E-mail	info@oatey.com	
Contact person	MSDS Coordinator	
Emergency phone number	First Aid 877-740-5015	Chemtrec 800-424-9300

2. Hazard(s) identification

Physical hazards	Flammable Liquids	Category 2
Health Hazards	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. May be fatal if swallowed and enters airways. 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. 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. Use only outdoors or in a well-ventilated area. Wear protective gloves/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. Do NOT induce vomiting. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Acetone	67-64-1	60-100
Cyclohexanone	108-94-1	1-5

*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. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
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. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	May cause drowsiness and dizziness. Headache. Nausea, vomiting. 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.
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. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible). 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.

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.

Large Spills: Stop the flow of material, if this is without risk. 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. 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. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions**7. Handling and storage****Precautions for safe handling**

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. 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. Avoid prolonged exposure. 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

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

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

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	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
	8 mg/l	Cyclohexanol, with hydrolysis	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.

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. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eyeface protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear suitable protective clothing.

Respiratory protection

Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate 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 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. Purple

Odor

Solvent.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

133 °F (56.11 °C)

Flash point

-4.0 °F (-20.0 °C)

Evaporation rate

Not available.

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	0.79
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	< 10 cP
Other information	
VOC (Weight %)	20 g/l SQACMD Method 24

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.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause drowsiness and dizziness. May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness and dizziness. Headache. Nausea, vomiting. 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.

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

Components	Species	Test Results
<i>Inhalation</i> LC50	Rat	8000 ppm, 4 hours > 6.2 mg/l, 4 Hours
<i>Oral</i> LD50	Rat	1620 mg/kg 1540 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

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 This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause respiratory irritation. May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration 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

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. 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.

US RCRA Hazardous Waste U List: Reference

Acetone (CAS 67-64-1)	U002
Cyclohexanone (CAS 108-94-1)	U057

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	UN1090
UN proper shipping name	Acetone Solution
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, T4, TP1
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1090
UN proper shipping name	Acetone Solution
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	UN1090
UN proper shipping name	ACETONE (ACETONE SOLUTIONS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D
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 Not established.

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

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.

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.

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

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1)	6532

US state regulations**US. Massachusetts RTK - Substance List**

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)

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.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

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

Country(s) or region	Inventory name	On inventory (yes/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
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 22-September-2014

Revision date -

Version # 01

HMIS® ratings Health: 2
Flammability: 3
Physical hazard: 0

Disclaimer Oatey Co. 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. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier	Oatey All Purpose Clear Cement
Other means of identification	
Product code	1403E
Synonyms	Part Numbers: 30818(TV), 30821(TV), 30834 (TV), 30847, 30847L, 30848, 31650, 31651, 32208, 32209
Recommended use	Joining PVC, CPVC, or ABS Pipe
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Oatey Co.
Address	4700 West 160th St. 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.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	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	%
Furan, Tetrahydro-	109-99-9	30-45
Acetone	67-64-1	10-20
Cyclohexanone	108-94-1	10-20
Methyl ethyl ketone	78-93-3	8-18
Polyvinyl chloride	9002-86-2	10.98
Ethene, chloro-homopolymer, chlorinated	68648-82-8	3-7
Silica, amorphous, fumed	112945-52-5	1-5

*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 Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Polyvinyl chloride (CAS 9002-86-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm	
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3	
Furan, Tetrahydro- (CAS 109-99-9)	PEL	50 ppm 590 mg/m3	

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Methyl ethyl ketone (CAS 78-93-3)	PEL	200 ppm	
		590 mg/m3	
Polyvinyl chloride (CAS 9002-86-2)	PEL	200 ppm	Respirable fraction.
		5 mg/m3	
		15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value
Silica, amorphous, fumed (CAS 112945-52-5)	TWA	0.8 mg/m3
		20 mppcf

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
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	
	TWA	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	TWA	1 mg/m3	Respirable fraction.

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
	TWA	250 ppm
		590 mg/m3
Methyl ethyl ketone (CAS 78-93-3)	STEL	200 ppm
		885 mg/m3
	TWA	300 ppm
		590 mg/m3
Silica, amorphous, fumed (CAS 112945-52-5)	TWA	200 ppm
		6 mg/m3

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	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).

Skin protection

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

Physical state

Liquid.

Form

Liquid.

Color

Clear. Milky.

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 (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.94 +/- 0.02
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	7.8 lb/gal
VOC (Weight %)	380 g/l SCAQMD 1168/M316A

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.
Hazardous decomposition products	No hazardous decomposition products are known.

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

Components	Species	Test Results
<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.
Polyvinyl chloride (CAS 9002-86-2)	3 Not classifiable as to carcinogenicity to humans.
Silica, amorphous, fumed (CAS 112945-52-5)	3 Not classifiable as to carcinogenicity to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Polyvinyl chloride (CAS 9002-86-2)	Cancer
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.
Aspiration 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 (<i>Pimephales promelas</i>) > 100 mg/l, 96 hours

Components	Species	Test Results
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	UN1133	
UN proper shipping name	Adhesives	
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	149, B52, IB2, T4, TP1, TP8	
Packaging exceptions	150	
Packaging non bulk	173	
Packaging bulk	242	
IATA		
UN number	UN1133	
UN proper shipping name	Adhesives	
Transport hazard class(es)		
Class	3	
Subsidiary risk	-	
Packing group	II	
Environmental hazards	No.	
ERG Code	3L	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.	
IMDG		
UN number	UN1133	
UN proper shipping name	ADHESIVES	

Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D
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	Not available.

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)

Polyvinyl chloride (CAS 9002-86-2)	Cancer
	Central nervous system
	Liver
	Blood
	Flammability

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.

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.

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

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)
 Silica, amorphous, fumed (CAS 112945-52-5)

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)
 Polyvinyl chloride (CAS 9002-86-2)

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)
 Silica, amorphous, fumed (CAS 112945-52-5)

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)*
Canada	Domestic Substances List (DSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*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 05-27-2015
Revision date -
Version # 01
HMIS® ratings Health: 2
 Flammability: 3
 Physical hazard: 0

NFPA ratings**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. 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.



SAFETY DATA SHEET

1. Identification

Product identifier	PVC All Weather Clear Cement
Other means of identification	
Product code	1105E
Synonyms	Part Numbers: 31132, 31133, 31135, 31136
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Oatey Co.
Address	4700 West 160th St. 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.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	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	%
Furan, Tetrahydro-	109-99-9	35-55
Acetone	67-64-1	10-25
Polyvinyl chloride	9002-86-2	12-20
Cyclohexanone	108-94-1	10-20
Silica, amorphous, fumed	112945-52-5	1-5

*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. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

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 Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Polyvinyl chloride (CAS 9002-86-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m ³	
		1000 ppm	
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m ³	
		50 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	PEL	590 mg/m ³	
		200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value
Silica, amorphous, fumed (CAS 112945-52-5)	TWA	0.8 mg/m3
		20 mppcf

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
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	
	TWA	50 ppm	
Polyvinyl chloride (CAS 9002-86-2)	TWA	1 mg/m3	Respirable fraction.

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
	TWA	590 mg/m3
		200 ppm
Silica, amorphous, fumed (CAS 112945-52-5)	TWA	6 mg/m3

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	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Furan, Tetrahydro- (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	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).

Skin protection

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

Physical state

Liquid.

Form

Translucent liquid.

Color

Gray.

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

-4.0 °F (-20.0 °C)

Evaporation rate

5.5 - 8

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

1.8

Flammability limit - upper (%)

11.8

Explosive limit - lower (%)

Not available.

Explosive limit - upper (%)

Not available.

Vapor pressure

145 mm Hg @ 20 °C

Vapor density

2.5

Relative density

0.95 +/- 0.02

Solubility(ies)

Solubility (water)

Negligible

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

Not available.

Decomposition temperature

Not available.

Viscosity

600 - 1500 cP

Other information

VOC (Weight %)

423 g/l SCAQMD 1168/M316A

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.
Hazardous decomposition products	No hazardous decomposition products are known.

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.
Polyvinyl chloride (CAS 9002-86-2)	3 Not classifiable as to carcinogenicity to humans.
Silica, amorphous, fumed (CAS 112945-52-5)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer

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.
Aspiration 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

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. (Acetone RQ = 25934 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. (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. (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

Not available.

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)

Polyvinyl chloride (CAS 9002-86-2)	Cancer
	Central nervous system
	Liver
	Blood
	Flammability

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

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.

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.

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

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1) 6532

US state regulations

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Silica, amorphous, fumed (CAS 112945-52-5)

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)
Polyvinyl chloride (CAS 9002-86-2)

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)
Silica, amorphous, fumed (CAS 112945-52-5)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)

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)*
Canada	Domestic Substances List (DSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*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 27-May-2015
Revision date -
Version # 01
HMIS® ratings Health: 2
Flammability: 3
Physical hazard: 0

NFPA ratings



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. 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.



SAFETY DATA SHEET

1. Identification

Product identifier	PVC Medium Clear Cement
Other means of identification	
SDS number	1101E
Synonyms	Part Numbers: Clear - 30350, 31017, 31018, 31019, 31020, 31021, 31550, 31551, 31552, 31553, 31946, 31947, 31948, 31949, 32222, 32223, 32224, 32225
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Oatey Co.
Address	4700 West 160th St. 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. Use only outdoors or in a well-ventilated area. 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. Wear protective gloves/protective clothing/eye protection/face protection.
Response	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.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

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	%
Furan, Tetrahydro-	109-99-9	30-50
Acetone	67-64-1	10-25
Methyl ethyl ketone	78-93-3	10-25
Polyvinyl chloride	9002-86-2	12-20
Cyclohexanone	108-94-1	10-20
Fumed Silica	112945-52-5	1-5

*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. Take off contaminated clothing and wash before reuse.

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

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. 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. IF exposed or concerned: Get medical advice/attention. 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 inhalation of vapors or mists. 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.

Large Spills: Stop the flow of material, if this is without risk. 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. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: 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. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not taste or swallow. Avoid breathing mist or vapor. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.

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 original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep in an area equipped with sprinklers.

8. Exposure controls/personal protection

Occupational exposure limits

U.S. - OSHA

Components	Type	Value	Form
Fumed Silica (CAS 112945-52-5)	TWA	0.8 mg/m3	Unspecified.
		20 mppcf	Unspecified.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Polyvinyl chloride (CAS 9002-86-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
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	

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m3	
Polyvinyl chloride (CAS 9002-86-2)	PEL	200 ppm 5 mg/m3 15 mg/m3	Respirable fraction. Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value
Fumed Silica (CAS 112945-52-5)	TWA	0.8 mg/m3 20 mppcf

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL TWA	750 ppm 500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL TWA	50 ppm 20 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	STEL TWA	100 ppm 50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL TWA	300 ppm 200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	TWA	1 mg/m3	Respirable fraction.

U.S. - NIOSH

Components	Type	Value	Form
Fumed Silica (CAS 112945-52-5)	REL	6 mg/m3	Unspecified.

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
Fumed Silica (CAS 112945-52-5)	TWA	6 mg/m3
Furan, Tetrahydro- (CAS 109-99-9)	STEL TWA	735 mg/m3 250 ppm 590 mg/m3 200 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL TWA	885 mg/m3 300 ppm 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	*
	8 mg/l	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

Wear safety glasses with side shields (or goggles).

Skin protection

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. Wash hands after handling and before eating.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Translucent liquid.

Color

Clear.

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 (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.93 +/- 0.02
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	1200 - 2500 cP
Viscosity temperature	77 °F (25 °C)
Other information	
Bulk density	7.7 lbs/gal
VOC (Weight %)	484 g/l SCAQMD 1168/M316A

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.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. 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
Cyclohexanone (CAS 108-94-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	948 mg/kg

Components	Species	Test Results
<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	Suspected of causing cancer. 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. This product contains polyvinyl chloride (PVC) that is not a fabricated product, and is therefore, defined and regulated as a toxic and hazardous substance under 29 C.F.R. § 1910.1017 due to the presumed presence of residual vinyl chloride monomer. The concentrations of residual vinyl chloride calculated to be contained in this product are well below the threshold for classification in accordance with 29 C.F.R. § 1910.1200.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1)	3 Not classifiable as to carcinogenicity to humans.
Fumed Silica (CAS 112945-52-5)	3 Not classifiable as to carcinogenicity to humans.
Polyvinyl chloride (CAS 9002-86-2)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Respiratory tract irritation. Narcotic effects.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration 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
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	UN1133
UN proper shipping name	Adhesives
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	T11, TP1, TP8, TP27
Packaging exceptions	150
Packaging non bulk	201
Packaging bulk	243

IATA

UN number	UN1133
UN proper shipping name	Adhesives
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1133
UN proper shipping name	ADHESIVES
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D
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	Not available.

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)

Polyvinyl chloride (CAS 9002-86-2)

Cancer
Central nervous system
Liver
Blood
Flammability

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.

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.

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)

Fumed Silica (CAS 112945-52-5)

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)

Polyvinyl chloride (CAS 9002-86-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Fumed Silica (CAS 112945-52-5)

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. This product contains trace amounts of chemicals known to the state of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure levels to these chemicals.

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)	No
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
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 27-May-2015

Revision date -

Version # 01

HMIS® ratings Health: 2
Flammability: 3
Physical hazard: 0

NFPA ratings



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier	Regular Clear Advanced PVC Cement
Other means of identification	
Product code	1107E
Synonyms	Part Numbers: 30881, 31925, 31926, 31927, 31928, 31929, 31958, 31959, 31960, 31961
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Oatey Co.
Address	4700 West 160th St. 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.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	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	%
Methyl ethyl ketone	78-93-3	30-45
Cyclohexanone	108-94-1	10-25
Furan, Tetrahydro-	109-99-9	10-25
Acetone	67-64-1	5-15
Polyvinyl chloride	9002-86-2	5-15

*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. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

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 Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Polyvinyl chloride (CAS 9002-86-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
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	
Polyvinyl chloride (CAS 9002-86-2)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	Respirable fraction.
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm	
	TWA	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	TWA	1 mg/m3	

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
	TWA	590 mg/m3 200 ppm
Methyl ethyl ketone (CAS 78-93-3)	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	*
	8 mg/l	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	
Eyeface protection	Face shield is recommended. Wear safety glasses with side shields (or goggles).
Skin protection	
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

Physical state	Liquid.
Form	Translucent liquid.
Color	Clear.
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	-4.0 °F (-20.0 °C)
Evaporation rate	5.5 - 8
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.9 +/- 0.02
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	80 - 500 cP
Other information	
VOC (Weight %)	488 g/l SCAQMD 1168/M316A

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.
Hazardous decomposition products	No hazardous decomposition products are known.

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.

Polyvinyl chloride (CAS 9002-86-2)

3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)

Cancer

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.

Aspiration 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 = 12788 LBS, Acetone RQ = 50505 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

Not available.

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)

Polyvinyl chloride (CAS 9002-86-2)	Cancer
	Central nervous system
	Liver
	Blood
	Flammability

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.

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.

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)

Polyvinyl chloride (CAS 9002-86-2)

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)*
Canada	Domestic Substances List (DSL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*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	05-28-2015
Revision date	-
Version #	01
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0

NFPA ratings



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. 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.

Owens-Corning



SAFE USE INSTRUCTION SHEET

Creation Date 12-Apr-2005

Revision Date 29-Sep-2016

Version 3

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	Duct Liner
Synonyms	QuietR® AcousticR® Duct Liner, Duraflex® II, QuietR® AcustiTEX™ Duct Liner, QuietR® Rotary Duct Liner, QuietR® Duct Liner Board
Product Code	OCIS00037
Recommended Use	No information available
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	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 90-99
Binder - PUF 1-10

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 plenty of 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 creating dust • Avoid dry sweeping • Pick up and transfer to properly labeled containers • Use personal protective equipment as required

- Clean contaminated surface thoroughly

7. HANDLING AND STORAGE

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 particulate matter	-	-	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 concentrations above the exposure limit they must use appropriate certified respirators in accordance with their company's respiratory protection program, local regulations or 29 CFR 1910.134
- 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 @20°C

Solid

Appearance

Fibrous

Odor

Organic

Color

Black

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	12-Apr-2005
Revision Date	29-Sep-2016
Revision Note	SUIS Section Updated 1,

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

Radnor



SAFETY DATA SHEET

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

Section 1: Product and Company Identification

Product Name: **Radnor Solvent Based Anti-Spatter (Aerosol)**
Product Identifier: Anti-Spatter
Product Use: Prevents Spatter Build Up in Welding Operations
Item Code(s): 64000100, 64000102
SDS Code: 001R
Supplier: Radnor
Physical Address: 259 North Radnor - Chester Road - Suite 100
Radnor, PA, 19087-5283
Emergency Phone: 866-734-3438
Date of Preparation: August 24, 2007 (Revised May 10, 2015)
OSHA Regulatory Status: Regulated
WHMIS Classification: D1B, D2A, D2B, A

Section 2: Hazards Identification

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

CLP/GHS Classification (1272/2008):

Physical	Health	Environmental
None	Eye Irritation Category 2A Skin Irritation Category 2 Specific Target Organ Toxicity - Single Exposure Category 3 (H335, H336) Carcinogen Category 2	None

EU CLASSIFICATION (67/548/EEC): Xn R40 (Carcinogen Category 2)

Label Elements

WARNING! Contains methylene chloride



Hazard Phrases

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.

Precautionary Phrases

P201	Obtain special instructions before use.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
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 advice/attention.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P332 + P313	IF SKIN IRRITATION OCCURS: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P308 + P313	IF EXPOSED OR CONCERNED: Get medical advice/attention.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local or national regulations.

OTHER IMPORTANT HAZARDS: N/A

SUGGESTED HMIS RATING: Health | 2 | Flammability | 1 | Reactivity | 1 | Personal Protection | C |

SUGGESTED NATIONAL FIRE PROTECTION ASSOCIATION: Health | 2 | Flammability | 1 | Reactivity | 1 |

Section 3: Composition and Information on Ingredients

SUBSTANCES:

Chemical Name	CAS#	EINECS#	EU Classification (67/548/EEC)	GHS Classification Regulation (EC) No 1272/2008	%
Methylene Chloride (Dichloromethane)	75-09-2	200-838-9	Xn (Carc Cat 2) R40	Eye Irritation Category 2A (H319), Skin Irritation Category 2 (H315), Specific Target Organ Toxicity Single Exposure Category 3 (H335, H336), Carcinogen Category 2 (H351)	>90
Carbon Dioxide	124-38-9				

See Section 16 for further information on EU and GHS Classification.

Section 4: First Aid Measures

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if symptoms persist or if unconscious.

INGESTION: Unlikely due to being in aerosol form. Should actual ingestion occur, do not induce vomiting! Drink a glass of water or milk to dilute. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

EYE CONTACT: Immediately flush with plenty of clear water for at least 15 minutes. Make sure to flush under the eyelids. Consult a physician for definitive treatment.

SKIN CONTACT: Remove with soap and water. Continue flushing with water for several minutes. Use skin cream to counter resulting dryness. Consult a physician if irritation continues or if large skin area is affected.

Section 5: Fire Fighting Measures

MEANS OF EXTINCTION: For warehouse and storage conditions, use NFPA Class B extinguishers (CO₂, dry chemical or universal aqueous film forming foam).

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus pressure demand. Use water spray to cool fire exposed aerosol containers for containers can rupture violently from heat developed pressure.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Contents under pressure. In addition, when liquid or vapor comes into contact with flames or red hot metal, products of combustion will be created. Firemen should wear self-contained breathing apparatus.

FLASH POINT / DETERMINATION: None to boiling

UPPER FLAMMABLE LIMIT: N/Av

LOWER FLAMMABLE LIMIT: N/Av

AUTO-IGNITION TEMPERATURE: N/Av

HAZARDOUS COMBUSTION PRODUCTS: N/Av

EXPLOSION DATA - SENSITIVITY TO MECHANICAL IMPACT: N/Av

EXPLOSION DATA - SENSITIVITY TO STATIC DISCHARGE: N/Av

Section 6: Accidental Release Measures

LEAK / SPILL RESPONSE: Product is an aerosol, therefore spills and leaks are unlikely. In case of rupture, released content should be contained as any other solvent spill. Spills from aerosol cans are unlikely and are generally of small volume. Large spills are therefore not normally considered a problem. In case of actual rupture, avoid breathing vapors and ventilate area well. Remove all sources of ignition and use non-sparking equipment. Soak up material with inert absorbent. Flush area with water. All rinsate should be placed in safety containers and labeled for proper disposal.

SPECIAL INSTRUCTIONS: Aerosol products represent a limited hazard and will not spill or leak unless ruptured. In case of rupture contents are generally evacuated from the can rapidly. Area should be ventilated immediately and continuous ventilation provided until all fumes and vapors have been removed. Aerosol cans should never be incinerated or burned. See Section 13 for disposal considerations.

Section 7: Handling and Storage

HANDLING PROCEDURES / EQUIPMENT: Avoid prolonged or repeated skin contact. Avoid breathing vapors.

STORAGE REQUIREMENTS: Store in area below 120°F (49°C). Do not incinerate (burn) containers. Assure can is in a secure place to prevent knocking over and accidental rupture. Always replace overcap when not in use. For store of pallet quantities, compliance with ANSI/NFPA 30B is recommended.

Section 8: Exposure Controls / Personal Protection

EYE PROTECTION: Safety glasses with side shields are recommended as a minimum for any type of industrial chemical handling. Where eye contact could occur, chemical splash proof goggles are recommended.

SKIN PROTECTION: For brief contact, no precautions other than clean body-covering clothing should be needed. When prolonged or repeated contact could occur, use protective clothing such as Sol-Vex® gloves or other clothing impervious to the ingredient listed in Section 2.

ENGINEERING CONTROLS: General ventilation (typically 10 air changes for hour) should be used. Ventilation rates should be matched to conditions. Local exhaust ventilation or an enclosed handling system, may be needed to control air contamination below that of the lowest TLV/PEL rated ingredient from Section 2.

EXPOSURE GUIDELINE LEVELS: Since this product is a mixture, an OSHA or ACGIH exposure value is not available. In determination of any exposure procedures, protection or testing use the lowest rated ingredient in Section 2.

Control Parameters

Chemical Name	Exposure Limits
Methylene Chloride (Dichloromethane)	25ppm TWA OSHA PEL, 125 ppm STEL 50 ppm TWA ACGIH TLV 100 ppm TWA UK OEL, 300 ppm STEL 75 ppm TWA Germany AGS, 300 ppm STEL
Soya Lecithin	None Established
Carbon Dioxide	5000 ppm TWA OSHA PEL 5000 ppm TWA ACGIH TLV, 30,000 ppm STEL

In the United States, 29 CFR 1910.1052 is the OSHA regulation on Occupational Exposure to Methylene Chloride. Assure compliance with these regulations.

Section 9: Physical and Chemical Properties

PHYSICAL STATE:	Liquid / Gas
ODOR and APPEARANCE:	Clear to white liquid with a chloroform-like odor
ODOR THRESHOLD:	N/Av
SPECIFIC GRAVITY (H ₂ O=1):	1.32
VAPOR PRESSURE (mm HG):	390
VAPOR DENSITY (AIR=1):	2.9
EVAPORATION RATE (BA=1):	14.50
BOILING POINT (°F):	104°F
FREEZE POINT (°F):	N/Av
pH:	N/Av
COEFFICIENT OF WATER/OIL DISTRIBUTION:	N/Av
DENSITY:	N/Av
SOLUBILITY IN WATER (% by weight):	1.3
% VOLATILE BY VOLUME:	20.0% Wt. Max
VOC'S:	N/Av

Section 10: Stability and Reactivity

STABILITY: Stable

CONDITIONS TO AVOID: Heat, sparks, open flame, red hot metal, electrical arcs, high pressure in aluminum systems.

MATERIALS TO AVOID (INCOMPATIBILITIES): Strong oxidizing materials (i.e. oxygen, nitrogen, peroxide, oxidizers) and reactive metals (i.e. aluminum, potassium, sodium, etc).

CONDITIONS OF REACTIVITY: N/Av

HAZARDOUS DECOMPOSITION BY-PRODUCTS: CO, CO₂, phosgene and /or HCl

HAZARDOUS POLYMERIZATION: Will not occur.

Section 11: Toxicological Information

LD50 (oral, rat) = 1600 mg/Kg

LC50 (inhalation, rat) = 88,000 mg/m³/30 min

ROUTES OF ENTRY: Inhalation [Y] Eye Contact [Y] Skin Contact [Y] Skin Absorption [Y] Ingestion [N]

EXPOSURE LIMITS: Since this product is a mixture, an OSHA or ACGIH exposure value is not available. In determination of any exposure procedures, protection or testing use the lowest rated ingredient in Section 2.

IRRITANCY OF PRODUCT: N/Av

SENSITIZATION TO PRODUCT / MEDICAL CONDITIONS AGGRAVATED: Prolonged contact with high concentrations can lead to serious kidney and liver damage.

CARCINOGENICITY:

This product contains Methylene Chloride which has been shown to cause cancer in certain laboratory animals when exposed to high vapor concentration over an extended period of time. While not proven to be carcinogenic to humans, if it should be found to be so, risk to health would depend on level and duration of exposure. Exposure to vapor should be minimized until risk to humans has been determined.

TERATOGENICITY / MUTAGENICITY / REPRODUCTIVE TOXICITY: Negative or equivocal results have been obtained in mutagenicity test using mammalian cells or animals. Results of AMES bacterial tests have generally been positive suggesting that genotoxic potential does not appear to be a significant factor in the toxicity of methylene chloride.

TOXICOLOGICAL DATA: N/Av

Section 12: Ecological Information

ENVIRONMENTAL EFFECTS: This product has not been tested for environmental effects.

IMPORTANT ENVIRONMENTAL CHARACTERISTICS: N/Av

AQUATIC TOXICITY: N/Av

Section 13: Disposal Considerations

An aerosol container that does not contain a significant amount of liquid would meet the definition of scrap metal (40 CFR 261.1(c)(6), and would be exempt from RCRA regulation under 40 CFR 261.6(a)(3)(iv) if it is to be recycled. If containers are to be disposed of (not recycled) it must be managed under all applicable RCRA and state regulations. Collected rinsate materials from spills may be hazardous wastes, and therefore subject to local, state and federal regulations.

Section 14: Transportation Information

THIS MATERIAL IS **HAZARDOUS** (Per 49 CFR 172.101) BY THE U.S. DEPARTMENT OF TRANSPORTATION.

NON-BULK SHIPMENTS:

PROPER SHIPPING NAME:	Aerosols
HAZARD CLASS NUMBER and DESCRIPTION:	2.2 (Nonflammable Gas)
UN IDENTIFICATION NUMBER:	UN 1950
PACKING GROUP:	Not Applicable
DOT LABEL(S) REQUIRED:	Nonflammable Gas
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER, 1996:	126

SHIPMENTS:

MARINE POLLUTANT: This product does not contain any component designated by the DOT to be a Marine Pollutant (49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This material is considered as **DANGEROUS GOODS**. Use the above information for the preparation of Canadian shipments.

Section 15: Regulatory Information

US FEDERAL REGULATIONS

OSHA CLASSIFICATION: This product is classified as a "Hazardous Chemical" by definition of Hazard Communication Standard (29 CFR 1910.1200) Occupational exposures to methylene chloride are specifically regulated under 29 CFR 1910.1052

CARCINOGEN STATUS: Methylene chloride is listed by NTP as 'reasonably anticipated to be a human carcinogen' and by IARC as a Group 2B carcinogen.

TOXIC SUBSTANCES CONTROL ACT (TSCA): The product on this SDS, or all of its components, is listed under TSCA.

SARA TITLE III, SECTION 313: The following ingredients are subject to the reporting requirements of Section 313 of Title III of the Superfund and Reauthorization Act of 1986 and 40 CFR Part 372: Methylene Chloride (90.5%).

CLEAN AIR ACT (CAA): The following ingredients appear on the List of Hazardous Air Pollutants (HAP - 42 USC 7412, Title I, Part A, p112): None

CLEAN WATER ACT (CWA): The following ingredients appear on the CWA List of Hazardous Substances (40 CFR 116.4): None

CALIFORNIA PROPOSITION 65: The following ingredients appear of the Proposition 65 list(s): Methylene Chloride (C)

NEW JERSEY RIGHT TO KNOW INFORMATION: (5 most predominant ingredients / hazardous & non-hazardous)

Methylene Chloride CAS# 75-09-2

Carbon Dioxide CAS# 124-38-9

Soy Lecithin CAS# 8002-43-5)

CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS): This SDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR.

DOMESTIC SUBSTANCES LIST (DSL): The product on this SDS, or all of its components, is included in the DSL.

Section 16: Other Information

GHS Phrases for Reference (See Sections 2 and 3):

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.

EU Classes and Risk Phrases for References (See Sections 2 and 3):

Xi	Irritant
Xn	Harmful
Carc Cat 2	Carcinogen Category 2
R36	Irritating to eyes.
R40	Possible risk of cancer.

Other:

N/E	Not Established
N/Av	Not Available
N/Ap	Not Applicable
IARC	International Agency for Research on Cancer
ACGIH	American Conference of Governmental Industrial Hygienists
NIOSH	National Institute for Occupational Health and Safety
TLV-TWA	Threshold Limit, Time Weighted Average
NAERG	North American Emergency Response Guidebook
WHMIS	Workplace Hazardous Materials Information System

This SDS format meets ANSI Z400.1-1998, OSHA 1910.1200 and WHMIS requirements. KCI provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Product use and conditions of use are beyond the control of KCI. Warranty of materials is limited to test results of product performance as detailed in certificates of compliance. Interpretation of test results is the responsibility of end-user. No other warranties, expressed or implied, are made.



SAFETY DATA SHEET

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

Section 1: Product and Company Identification

Product Name: **Radnor Water Based Anti-Spatter (Aerosol)**
Product Identifier: Anti-Spatter
Product Use: Prevents Spatter Build Up in Welding Operations
Item Code(s): 64000110
SDS Code: 027R
Supplier: Radnor
Physical Address: 259 North Radnor - Chester Road - Suite 100
Radnor, PA 19087-5283
Emergency Phone: 866-734-3438
Date of Preparation: June 13, 2003 (Revised April 1, 2015)
OSHA Regulatory Status: Not Regulated
WHMIS Classification: Not Regulated

Section 2: Composition and Information on Ingredients

HAZARDOUS INGREDIENTS	CAS #	OSHA PEL	ACGIH TLV	LD50 (oral, rat)	LC50 (inhal, rat)	%	OTHER

None

See Section 16 for Definitions of Terms Used.

Section 3: Hazard Identification

EMERGENCY OVERVIEW

THIS MATERIAL IS SUBJECT TO NO HAZARDOUS DECOMPOSITION OR HAZARDOUS POLYMERIZATION. CONTENTS UNDER PRESSURE. STORE BELOW 120°F (49°C), OUT OF SUNLIGHT AND AWAY FROM HEAT SOURCES. STORE ABOVE FREEZING TEMPERATURES DUE TO HIGH WATER CONTENT. DO NOT PUNCTURE OR INCINERATE.

EYE: Liquid or vapors may cause redness, burning, tearing, swelling and/or pain.

SKIN: Frequent or prolonged contact can result in drying of the skin which may result in skin irritation and dermatitis (rash).

INGESTION: Do not induce vomiting. Get medical attention immediately.

INHALATION: No health effects anticipated from vapor inhalation.

EFFECTS OF ACUTE EXPOSURE: There are no acute health effects associated by this product.

EFFECTS OF CHRONIC EXPOSURE: There are no chronic health effects associated by this product.

OTHER IMPORTANT HAZARDS: N/A

SUGGESTED HMIS RATING: Health | 1 | Flammability | 0 | Reactivity | 0 | Personal Protection | N |

SUGGESTED NATIONAL FIRE PROTECTION ASSOCIATION: Health | 0 | Flammability | 1 | Reactivity | 0 |

Section 4: First Aid Measures

INHALATION: If difficulty in breathing occurs, remove to fresh air. If problem persists, contact a physician.

INGESTION: If swallowed, do not induce vomiting. Get medical attention right away.

EYE CONTACT: Immediately flush with plenty of clear water for at least 15 minutes. Make sure to flush under the eyelids. Consult a physician for definitive treatment.

SKIN CONTACT: Remove with soap and water. Continue flushing with water for several minutes. Use skin cream to counter resulting dryness. Consult a physician if irritation continues.

Section 5: Fire Fighting Measures

CONDITIONS OF FLAMMABILITY: Not flammable under normal conditions. Product is water based.

MEANS OF EXTINCTION: For warehouse and storage conditions, use NFPA Class B extinguishers (CO₂, dry chemical or universal aqueous film forming foam).

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus pressure demand. Use water spray to cool fire exposed aerosol containers for containers can rupture violently from heat developed pressure.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Contents under pressure. Firemen should wear self-contained breathing apparatus.

FLASH POINT / DETERMINATION: None.

UPPER FLAMMABLE LIMIT: None.

LOWER FLAMMABLE LIMIT: None.

AUTO-IGNITION TEMPERATURE: Not known

HAZARDOUS COMBUSTION PRODUCTS: If water component is driven off, and residue ignited, product may release CO₂, CO and oxides of nitrogen and sulfur.

EXPLOSION DATA - SENSITIVITY TO MECHANICAL IMPACT: Not sensitive.

EXPLOSION DATA - SENSITIVITY TO STATIC DISCHARGE: Will not be ignited by exposure to static.

Section 6: Accidental Release Measures

LEAK / SPILL RESPONSE: Ensure that all spilled material is promptly cleaned up. Absorb with inert material such as vermiculite or paper towels, place in a chemical waste container for eventual disposal. Seal and label the container as waste. Dispose of in accordance with all federal, state, provincial and local regulations.

SPECIAL INSTRUCTIONS: Avoid contact with eyes, or prolonged contact with skin. Wash thoroughly after handling. Keep away from food, and out of reach of small children.

Section 7: Handling and Storage

HANDLING PROCEDURES / EQUIPMENT: Safety goggles and rubber gloves recommended.

STORAGE REQUIREMENTS: Store in area below 120°F (49°C) and above freezing due to large water content. Do not incinerate (burn) containers. Assure can is in a secure place to prevent knocking over and accidental rupture. Always replace overcap when not in use. For store of pallet quantities, compliance with ANSI/NFPA 30B is recommended.

Section 8: Exposure Controls / Personal Protection

EYE PROTECTION: Safety glasses with side shields are recommended as a minimum for any type of industrial chemical handling. Where eye contact could occur, chemical splash proof goggles are recommended.

SKIN PROTECTION: For brief contact, no precautions other than clean body-covering clothing should be needed. When prolonged or repeated contact could occur, use protective clothing such as rubber gloves..

ENGINEERING CONTROLS: General ventilation (typically 10 air changes for hour) should be used.

EXPOSURE GUIDELINE LEVELS: N/Ap

Section 9: Physical and Chemical Properties

PHYSICAL STATE:	Liquid / Gas
ODOR and APPEARANCE:	Viscous, brown liquid with bland odor
ODOR THRESHOLD:	N/Av
SPECIFIC GRAVITY (H ₂ O=1):	1.07
VAPOR PRESSURE (mm HG):	18
VAPOR DENSITY (AIR=1):	< 1
EVAPORATION RATE (BA=1):	< 1
BOILING POINT (°F):	Approx. 200°F
FREEZE POINT (°F):	Approx. 27°F
pH:	7
COEFFICIENT OF WATER/OIL DISTRIBUTION:	N/Av
DENSITY:	1.001
SOLUBILITY IN WATER (% by weight):	completely soluble
% VOLATILE BY VOLUME:	N/Av
VOC'S:	< 1

Section 10: Stability and Reactivity

STABILITY: Normally stable.

CONDITIONS TO AVOID: Excessive heating.

MATERIALS TO AVOID (INCOMPATIBILITIES): Water-reactive chemicals such as sodium or potassium.

CONDITIONS OF REACTIVITY: N/Av

HAZARDOUS DECOMPOSITION BY-PRODUCTS: If heated until water is driven off and decomposition begins, this product may release carbon dioxide, carbon monoxide, and oxides of nitrogen and sulphur.

HAZARDOUS POLYMERIZATION: Will not occur.

Section 11: Toxicological Information

LD50 (oral, rat) = N/Av

LC50 (inhalation, rat) = N/Av

ROUTES OF ENTRY: Inhalation [N] Eye Contact [Y] Skin Contact [Y] Skin Absorption [N] Ingestion [N]

EXPOSURE LIMITS: N/Av

IRRITANCY OF PRODUCT: Not known to be irritating.

SENSITIZATION TO PRODUCT / MEDICAL CONDITIONS AGGRAVATED: Not known to cause allergies.

CARCINOGENICITY: No ingredients known to be carcinogens.

TERATOGENICITY / MUTAGENICITY / REPRODUCTIVE TOXICITY: No effects determined.

TOXICOLOGICAL DATA: N/Av

Section 12: Ecological Information

ENVIRONMENTAL EFFECTS: This product has not been tested for environmental effects.

IMPORTANT ENVIRONMENTAL CHARACTERISTICS: N/Av

AQUATIC TOXICITY: N/Av

Section 13: Disposal Considerations

An aerosol container that does not contain a significant amount of liquid would meet the definition of scrap metal (40 CFR 261.1(c)(6), and would be exempt from RCRA regulation under 40 CFR 261.6(a)(3)(iv) if it is to be recycled. If containers are to be disposed of (not recycled) it must be managed under all applicable RCRA and state regulations.

Section 14: Transportation Information

THIS MATERIAL IS NON-**HAZARDOUS** (Per 49 CFR 172.101) BY THE U.S. DEPARTMENT OF TRANSPORTATION.

NON-BULK SHIPMENTS:

PROPER SHIPPING NAME:	Aerosols
HAZARD CLASS NUMBER and DESCRIPTION:	2.2 (Non Flammable Gas)
UN IDENTIFICATION NUMBER:	UN 1950
PACKING GROUP:	N/Ap
DOT LABEL(S) REQUIRED:	N/Ap
NORTH AMERICAN EMERGENCY RESPONSE	N/Ap
GUIDEBOOK NUMBER, 1996:	126

SHIPMENTS:

MARINE POLLUTANT: This product does not contain any component designated by the DOT to be a Marine Pollutant (49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

Section 15: Regulatory Information

TOXIC SUBSTANCES CONTROL ACT (TSCA): The product on this SDS, or all of its components, is listed under TSCA.

SARA TITLE III, SECTION 313: The following ingredients are subject to the reporting requirements of Section 313 of Title III of the Superfund and Reauthorization Act of 1986 and 40 CFR Part 372: None

CLEAN AIR ACT (CAA): The following ingredients appear on the List of Hazardous Air Pollutants (HAP - 42 USC 7412, Title I, Part A, p112): None

CLEAN WATER ACT (CWA): The following ingredients appear on the CWA List of Hazardous Substances (40 CFR 116.4): None

CALIFORNIA PROPOSITION 65: The following ingredients appear of the Proposition 65 list(s): None

NEW JERSEY RIGHT TO KNOW INFORMATION: (5 most predominant ingredients / hazardous & non-hazardous)

Water CAS# 7732-18-5

Lecithin CAS# 8002-43-5

Polysorbate 80 CAS# 9005-65-6

Nitrogen CAS# 7727-37-9

CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS): This SDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR.

DOMESTIC SUBSTANCES LIST (DSL): The product on this SDS, or all of its components, is included in the DSL.

Section 16: Other Information

N/E	Not Established
N/Av	Not Available
N/Ap	Not Applicable
IARC	International Agency for Research on Cancer
ACGIH	American Conference of Governmental Industrial Hygienists
NIOSH	National Institute for Occupational Health and Safety
TLV-TWA	Threshold Limit, Time Weighted Average
NAERG	North American Emergency Response Guidebook
WHMIS	Workplace Hazardous Materials Information System

This SDS format meets ANSI Z400.1-1998, OSHA 1910.1200 and WHMIS requirements. KCI provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Product use and conditions of use are beyond the control of KCI. Warranty of materials is limited to test results of product performance as detailed in certificates of compliance. Interpretation of test results is the responsibility of end-user. No other warranties, expressed or implied, are made.

Warren



SAFETY DATA SHEET

NAPA DOT 3 BRAKE FLUID

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Issue Date: March 5, 2014

Revised: April 2, 2015

Product Name: NAPA DUTY DOT 3 BRAKE FLUID

Synonyms: Brake Fluid

CAS Number: Mixture, see Section 3

Chemical Formula: Mixture

General Use: Brake Fluid

Manufacturer: Warren Unilube, Inc., 915 E. Jefferson, West Memphis, AR 72301

24-HOUR EMERGENCY NUMBER – CHEMTREC: 1-800-424-9300

WARREN UNILUBE PHONE: (800) 428-9284

FAX: (870) 400-3070

Restrictions on Use:

FOR LABELS FOR THE GENERAL PUBLIC: If medical advice is needed, have product container or label at hand.

Keep out of reach of children and animals.

Read label before use.

FOR THE INDUSTRIAL WORKER: Industrial use only.

SECTION 2: HAZARD(S) IDENTIFICATION

Hazard Classification:

OSHA Hazards: Target Organ Effect, Harmful by ingestion, Irritant, Teratogen, Reproductive hazard

Target Organs: Kidney, Liver, Central nervous system, Female reproductive system, Male reproductive system, Blood.

GHS Classification:

Acute toxicity, dermal (Category 5)
Acute toxicity, oral (Category 4)
Skin Irritation (Category 3)
Serious eye damage (Category 1)
Reproductive toxicity (Category 2)



Signal Word: WARNING

Hazard Statements:

H302	Harmful if swallowed
H313	May be harmful in contact with skin
H316	Causes mild skin irritation
H318	Causes serious eye damage
H361	Suspected of damaging fertility or the unborn child

Precautionary Statements:

P201	Obtain special instructions before use.
P202	Do not handle until all safety instructions have been read and Understood.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear eye protection / face protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor / physician immediately.
P330	IF SWALLOWED: Rinse mouth.
P312	IF ON SKIN: Call a POISON CENTER or doctor / physician if you feel unwell.
P332 + P313	If skin irritation occurs: Get medical advice / 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.
P310	IF IN EYES: Immediately call a POISON CENTER or doctor / physician.
P308 + P313	If exposed or concerned: Get medical advice / attention.

20-80% of the mixture consists of ingredients of unknown acute toxicity.

HMIS Classification

Health hazard:	1
Chronic Health Hazard	
Flammability	1
Physical hazards	0

NFPA Rating

Health hazard:	1
Fire:	1
Reactivity	0

Description of Any Other Hazards Not Otherwise Classified: none known.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<u>INGREDIENT Name:</u>	<u>CAS NUMBER</u>	<u>%wt. or %V</u>
Triethylene Glycol Monomethyl Ether	112-35-6	5-50
Triethylene Glycol Monoethyl Ether	112-50-5	5-50
Triethylene Glycol Monobutyl Ether	143-22-6	5-50
Tetrathylene Glycol Monobutyl Ether	1559-34-8	5-20
Polyethylene Glycol	25322-68-3	5-20
Diethylene Glycol Monobutyl Ether	112-34-5	5-20
Diethylene Glycol	111-46-6	5-15
Diethylene Glycol Monomethyl Ether	111-77-3	<5
Diethylene Glycol Monoethyl Ether	111-90-0	<5
Polyalkylene Glycol Monobutyl Ether	9004-77-7	5-20
Polyalkylene Glycol Monomethyl Ether	23783-42-8	5-20
Polyalkylene Glycols	9038-95-3	5-20
Trade Secret Inhibitor Package	Trade Secret	3

3% of the composition of this material has been withheld as a trade secret.

SECTION 4: FIRST AID MEASURE

EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation continues or persists, get medical advice / attention.

SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice / attention.

INGESTION: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

INHALATION: Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Treatment should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Dry chemical, foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak, and disperse vapors.

UNSUITABLE EXTINGUISHING MEDIA: Direct water stream.

SPECIAL FIRE FIGHTING PROCEDURES: Evacuate area. Do not use direct water stream to extinguish fires. Do not release runoff from fire control methods to sewers or waterways.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, carbon dioxide, and unidentified organic compounds.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS: Wear full protective clothing and NIOSH – approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive breathing mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use appropriate personal protective equipment. Avoid breathing vapors, mist or gas. Avoid contact with spilled material. Insure adequate ventilation. Remove all sources of ignition. Use non-sparking tools and equipment.

PROTECTIVE CLOTHING: Standard work uniform. Impervious gloves. Safety glasses. Personnel should increase PPE level as deemed appropriate in any given situation.

EMERGENCY PROCEDURES:

SMALL SPILLS: Contain and recover liquid when possible. Collect liquid in appropriate container or absorb with an inert material (such as vermiculite or dry sand) and place in chemical waste container. Do not use combustible materials such as sawdust for the cleanup.

LARGE SPILLS:

Containment: Shut off source of leak if safe to do so. Dike far ahead of liquid spill for later disposal. Do not allow material to enter sewers or waterways.

Cleanup: Contain and recover liquid when possible. Collect liquid in appropriate container. Absorb residue with an inert material (such as vermiculite or dry sand) and place in chemical waste container. Do not use combustible materials such as sawdust for the cleanup.

SECTION 7: HANDLING AND STORAGE

HANDLING PRECAUTIONS: May be harmful or fatal if swallowed.

STORAGE REQUIREMENTS: Store in a cool dry, ventilated area.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Controls should be such that adequate ventilation is provided.

VENTILATION: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work place by controlling it at its source.

RESPIRATORY PROTECTION: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA / NIOSH approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (e.g. cleaning spills, reactor vessels, or storage tanks), wear an SCBA. **Warning!** *Air purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

EYE PROTECTION: Wear protective eyeglasses or chemical safety goggles, per OSHA eye-and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with, contact lenses.

SKIN PROTECTION: Wear chemically protective gloves, boots, aprons and gauntlets to prevent prolonged or repeated skin contact.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Make emergency eyewash stations, safety / quick drench showers and washing facilities available in work areas.

WORK HYGIENIC PRACTICES: Never eat, drink or smoke in work areas. Practice good personal hygiene after using this material especially before eating, drinking or smoking, using the toilet, or applying cosmetics. Separate contaminate work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment. Discard belts and shoes that cannot be cleaned.

EXPOSURE GUIDELINES:

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		USA WEEL
	TWA	STEL	TWA	STEL	TWA	STEL	
Triethylene Glycol Monomethyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.

Triethylene Glycol Monoethyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Triethylene Glycol Monobutyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Tetraethylene Glycol Monobutyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Polyethylene Glycol	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	10 mg/m3
Diethylene Glycol Monobutyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Diethylene Glycol	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	10 mg/m3
Diethylene Glycol Monomethyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	25 ppm
Diethylene Glycol Monoethyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Diethylene Glycol Monobutyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Polyalkylene Glycol Monobutyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Polyalkylene Glycol Monomethyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Polyalkylene Glycols	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Inhibitor Package	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE AND COLOR: Yellow to amber

ODOR: Mild

FLASH POINT: >275°F (>135°C)

UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: not available

AUTO IGNITION TEMPERATURE: not available

DECOMPOSITION TEMPERATURE: not available

VAPOR PRESSURE: not available

ODOR THRESHOLD: not available

VAPOR DENSITY (air = 1): >1

pH: 10.0 – 11.5

RELATIVE DENSITY: 8.33 – 9.02 lb/gal

SPECIFIC GRAVITY (H₂O = 1 AT 4 C): 1.000 – 1.070

MELTING POINT / FREEZING POINT: not available

WATER SOLUBILITY: soluble

OTHER SOLUBILITIES: not available

INITIAL BOILING POINT AND BOILING RANGE: 480°F (248.9°C), boiling range not available

EVAPORATION RATE (BuAc = 1): <0.01

PARTITION COEFFICIENT: n-OCTANOL/WATER: not available

VISCOSITY: not available

REFRACTIVE INDEX: not available

FORMULA WEIGHT: mixture

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: none under normal handling.

STABILITY: stable at room temperature in closed containers under normal storage and handling conditions.

CONDITIONS TO AVOID (STABILITY): none known.

INCOMPATIBILITY (MATERIAL TO AVOID): none known.

HAZARDOUS DECOMPOSITION BY-PRODUCTS: Thermal oxidative decomposition can produce carbon monoxide, carbon dioxide and unknown organic compounds.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

CONDITIONS TO AVOID (POLYMERIZATION): Hazardous polymerization will not occur.

HAZARDOUS POLYMERICATION BY-PRODUCTS: Hazardous polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Swallowing larger amounts may cause nausea and vomiting, abdominal discomfort or diarrhea. May cause dizziness and drowsiness.

ACUTE EFFECTS:

EYE CONTACT: May cause slight eye irritation. May cause slight corneal injury.

SKIN CONTACT: Brief contact is essentially nonirritating to skin.

INHALATION: At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of the upper respiratory tract.

INGESTION: Toxic or fatal if ingested. For diethylene glycol, a component of this mixture, a lethal dose can be as little as two ounces. Symptoms of diethylene glycol poisoning include severe abdominal cramping, diarrhea, vomiting, sweating, confusion, cardiac abnormalities, neurological abnormalities, infrequent urination, intoxication or CNS depression. If left untreated, product will metabolize to cause metabolic acidosis, renal failure, hyperkalemia, hyponatremia, paralysis, cardiac failure or death. Seek medical attention immediately for poisoning. If ingested, DO NOT wait for symptoms to develop before getting treatment.

TARGET ORGAN EFFECTS: Product is toxic to kidneys, liver, central nervous system and heart. Metabolic products of diethylene glycol produce acidosis and organ toxicity effects.

CHRONIC EFFECTS: May cause dryness or defatting of the skin, dermatitis, or may aggravate existing skin conditions.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Various skin conditions.

ACUTE TOXICITY VALUES

Triethylene Glycol Monomethyl Ether

ORAL LD50 (rat): 11,842 mg/kg

DERMAL LD50 (rabbit): 7,441 mg/kg

INHALATION LC50 (state animal): data unavailable

Triethylene Glycol Monoethyl Ether

ORAL LD50 (state animal): data unavailable

DERMAL LD50 (state animal): data unavailable

INHALATION LC50 (state animal): data unavailable

Tetraethylene Glycol Monobutyl Ether

ORAL LD50 (rat): 5,300 mg/kg

DERMAL LD50 (rabbit): 3,505 mg/kg

INHALATION LC50 (state animal): data unavailable

Polyethylene Glycol

ORAL LD50 (state animal): data unavailable

DERMAL LD50 (state animal): data unavailable

INHALATION LC50 (state animal): data unavailable

Diethylene Glycol Monobutyl Ether

ORAL LD50 (rat): 5,660 mg/kg

DERMAL LD50 (rabbit): 2,700 mg/kg

INHALATION LC50 (state animal): data unavailable

Diethylene Glycol

ORAL LD50 (rat): 12,565 mg/kg

DERMAL LD50 (rabbit): 11,890 mg/kg

INHALATION LC50 (state animal): data unavailable

Diethylene Glycol Monomethyl Ether**ORAL LD50 (rat):** >7,000 mg/kg**DERMAL LD50 (rabbit):** >20,400 mg/kg**INHALATION LC50 (state animal):** data unavailable**Diethylene Glycol Monoethyl Ether****ORAL LD50 (rat):** 10,502 mg/kg**DERMAL LD50 (rabbit):** 9,143 mg/kg**INHALATION LC50 (state animal):** data unavailable**Polyalkylene Glycol Monobutyl Ether****ORAL LD50 (rat):** >2,000 mg/kg**DERMAL LD50 (rat):** >2,000 mg/kg**INHALATION LC50 (state animal):** data unavailable**Polyalkylene Glycol Monomethyl Ether****ORAL LD50 (state animal):** data unavailable**DERMAL LD50 (state animal):** data unavailable**INHALATION LC50 (state animal):** data unavailable**Polyalkylene Glycols****ORAL LD50 (state animal):** data unavailable**DERMAL LD50 (state animal):** data unavailable**INHALATION LC50 (state animal):** data unavailable**LISTED CARCINOGEN:**

NATIONAL TOXICOLOGY PROGRAM REPORT ON CARCINOGENS: 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.

IARC LISTED AS POTENTIAL CARCINOGEN: 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 LISTED AS POTENTIAL CARCINOGEN: 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.

SECTION 12: ECOLOGICAL INFORMATION**DATA FROM TOXICITY TESTS ON AQUATIC AND/OR TERRESTRIAL ORGANISMS:****Triethylene Glycol Monoethyl Ether:** data unavailable**Triethylene Glycol Monobutyl Ether:** data unavailable**Tetraethylene Glycol Monobutyl Ether:** data unavailable

Polyethylene Glycol

Fish: LC50 – Leuciscus idus (Golden orfe) <500 mg/l

Daphnia: data unavailable

Diethylene Glycol Monobutyl Ether

Fish: LC50 – Lepomis macrochirus – 1,300 mg/l – 96h

LC50 – Leuciscus idus (Golden orfe) – >1,000 mg/l – 48h

Daphnia: data unavailable

Diethylene Glycol

Fish: LC50 – Pimephales promelas (fathead minnow) – 75,200 mg/l – 96h

LC50 – Carassius auratus (goldfish) – 5,000 mg/l – 24h

Daphnia: EC50 – Daphnia magna (Water flea) - >10,000 mg/l – 24h

Diethylene Glycol Monomethyl Ether

Fish: LC50 – Lepomis macrochirus – 7,500 mg/l – 96h

Daphnia: data unavailable

Diethylene Glycol Monoethyl Ether

Fish: LC50 – Pimephales promelas (fathead minnow) – 9,650 mg/l – 96h

Daphnia: EC50 – Daphnia magna (Water flea) - >3,340 mg/l – 24h

Polyalkylene Glycol Monobutyl Ether: data unavailable

Polyalkylene Glycol Monomethyl Ether: data unavailable

Polyalkylene Glycols: data unavailable

ENVIRONMENTAL FATE: data unavailable for mixture

BIOACCUMULATION POTENTIAL: data unavailable for mixture

POTENTIAL TO MOVE FROM SOIL TO GROUNDWATER: data unavailable for mixture

OTHER ADVERS ENVIRONMENTAL EFFECTS: data unavailable for mixture

SECTION 13: DISPOSAL CONSIDERATIONS

CONTAINERS TO USE: No specific recommendations

RECOMMENDED DISPOSAL METHODS: Whatever cannot be saved for recovery or recycling should be disposed of in an approved waste facility in accordance with Federal, State/Provincial and Local requirements.

PHYSICAL AND CHEMICAL PROPERTIES THAT MAY AFFECT DISPOSAL ACTIVITIES:
No specific information available.

WHENEVER POSSIBLE, MATERIAL SHOULD NOT BE ALLOWED TO ENTER SEWAGE DISPOSAL SYSTEMS.

SPECIAL PRECAUTIONS FOR LANDFILL OR INCINERATION ACTIVITIES: No specific information available.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (49 CFR 172.101)

PROPER SHIPPING NAME: DOT 3 Brake Fluid

DOT Non-Bulk: Not Regulated

DOT Bulk: Not Regulated

IATA

Not Dangerous Goods

IMDG

Not Dangerous Goods

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): all components are listed on the TSCA Inventory

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): None. However, this product contains various ethylene glycols and glycol ethers which are each included as a broad category on the CERCLA Hazardous Substances list.

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

311/312 HAZARD CATEGORIES:

Immediate Hazard: yes / no

Delayed Hazard: yes / no

Fire Hazard: yes / no

Pressure Hazard: yes / no

Reactivity Hazard: yes / no

313 REPORTABLE INGREDIENTS: The following components are subject to reporting levels established by SARA Title III, Section 313:

2-(2-Ethoxyethoxy) ethanol

CAS Number: 111-90-0

2-(2-methoxyethoxy) ethanol

CAS Number: 111-77-3

2-(2-Butoxyethoxy) ethanol

CAS Number: 112-34-5

CLEAN WATER ACT (CWA): None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

CLEAN AIR ACT (CAA): None of the chemicals in the product are listed as Hazardous Air Pollutants.

STATE REGULATIONS:

California: This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts:

2-(2-Methoxyethoxy) ethanol	CAS Number: 111-77-3

New Jersey:

Triethylene glycol monobutyl ether	CAS Number: 143-22-6
Polyethylene glycol	CAS Number: 25322-68-3
2-(2-Butoxyethoxy) ethanol	CAS Number: 112-34-5
Diethylene glycol	CAS Number: 111-46-6
2-(2-Methoxyethoxy) ethanol	CAS Number: 111-77-3
2-(2-Ethoxyethoxy) ethanol	CAS Number: 111-90-0

Pennsylvania:

Triethylene glycol monobutyl ether	CAS Number: 143-22-6
Polyethylene glycol	CAS Number: 25322-68-3
2-(2-Butoxyethoxy) ethanol	CAS Number: 112-34-5
Diethylene glycol	CAS Number: 111-46-6
2-(2-Methoxyethoxy) ethanol	CAS Number: 111-77-3
2-(2-Ethoxyethoxy) ethanol	CAS Number: 111-90-0

INTERNAL REGULATIONS:

Persistent Organic Pollutants (United Nations): not listed

Initial List of Prior Informed Consent Chemicals (United Nations): not listed

Ozone Depleting Substances (Montreal Protocol): not listed

Greenhouse Gases (Intergovernmental Panel on Climate Change): not listed

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES: All components are listed.

CANADA: DOMESTIC SUBSTANCES LIST: All components are listed.

CANADA WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS):
D2B - Toxic Material at >1%.

CANADIAN ENVIRONMENTAL PROTECTION AGENCY TOXICS LIST: None of the components of this mixture are listed.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES: This material contains components not listed on the EINECS Inventory: Polyalkylene glycols, CAS Number 9038-95-3.

NEW ZEALAND: All components are listed.

PHILLIPPINE INVENTORY OF CHEMICALS AND CHEMICAL SUBSTANCES: All components are listed.

SECTION 16: REGULATORY INFORMATION

Disclaimer: This product is **FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH CHILDREN AND ANIMALS. DO NOT TAKE INTERNALLY.**

Warren Unilube, Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. No warranty of fitness for any particular purpose, warranty of merchantability, or any other warranty expressed or implied, is made concerning the information provided herein. The information provided herein relates only to the specific product designated and may not be valid where such products is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and of the information referred to herein are beyond the control of Warren Unilube, Warren Unilube expressly disclaims any and all liability as to any results obtained or arising from any of the product or reliance on such information.

For additional product information, please contact Warren Unilube, Inc. at (800) 428-9284.

WD-40



SAFETY DATA SHEET WD40 AEROSOL

According to Regulation (EC) No 1907/2006

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME WD40 AEROSOL
APPLICATION Anti-squeak. Moisture repellant. Releasing agent
SUPPLIER WD40 Company Limited
PO Box 440
Kiln Farm
Milton Keynes
MK11 3LF
Tel: 01908 555400
Fax: 01908 266900
info@wd40.co.uk
EMERGENCY TELEPHONE 00 44 1908 555 400 (08.00 - 16.30)

2 HAZARDS IDENTIFICATION

Flammable. Repeated exposure may cause skin dryness or cracking.

CLASSIFICATION R10, R66.

ENVIRONMENT

The product is not expected to be hazardous to the environment.

PHYSICAL AND CHEMICAL HAZARDS

Aerosol containers can explode when heated, due to excessive pressure build-up. When sprayed on a naked flame or any incandescent material the aerosol vapours can be ignited.

HUMAN HEALTH

See section 11 for additional information on health hazards. This substance has no evidence of carcinogenic properties.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
CARBON DIOXIDE	204-696-9	124-38-9	1-5%	-
PETROLEUM DISTILLATE	265-150-3	64742-48-9	60-80%	Xn;R65. R10,R66.

The Full Text for all R-Phrases are Displayed in Section 16

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Keep the affected person warm and at rest. Get prompt medical attention.

INGESTION

DO NOT INDUCE VOMITING! NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Immediately rinse mouth and drink plenty of water (200-300 ml). Get medical attention.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Use: Foam. Water spray, fog or mist. Dry chemicals, sand, dolomite etc.

SPECIAL FIRE FIGHTING PROCEDURES

Containers close to fire should be removed or cooled with water. Avoid water in straight hose stream; will scatter and spread fire.

WD40 AEROSOL**UNUSUAL FIRE & EXPLOSION HAZARDS**

Aerosol cans may explode in a fire.

SPECIFIC HAZARDS

Fire or high temperatures create: Carbon monoxide (CO). Carbon dioxide (CO₂).

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES**PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

SPILL CLEAN UP METHODS

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Absorb with inert, damp, non-combustible material, then flush area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Read and follow manufacturer's recommendations. Keep away from heat, sparks and open flame. Avoid inhalation of vapours/spray and contact with skin and eyes. Wash hands after handling.

STORAGE PRECAUTIONS

Aerosol cans: Must not be exposed to direct sunlight or temperatures above 50°C.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m ³	ST - ppm	ST - mg/m ³
CARBON DIOXIDE			Asphyxiating		Asphyxiating

PROTECTIVE EQUIPMENT**ENGINEERING MEASURES**

Provide adequate ventilation.

HAND PROTECTION

Use suitable protective gloves if risk of skin contact. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

EYE PROTECTION

Wear approved chemical safety goggles where eye exposure is reasonably probable.

HYGIENE MEASURES

DO NOT SMOKE IN WORK AREA! Promptly remove any clothing that becomes contaminated. Wash promptly if skin becomes contaminated. When using do not eat, drink or smoke.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Liquid Aerosol		
COLOUR	Light (or pale) Amber		
ODOUR	Characteristic		
SOLUBILITY	Insoluble in water		
RELATIVE DENSITY	0.817 @ 21°C	VAPOUR DENSITY (air=1)	> 1
VAPOUR PRESSURE	95-105 psi @ 21°C	VOLATILE BY VOL. (%)	57%
FLASH POINT (°C)	44°C TOC (Tag open cup).	FLAMMABILITY LIMIT - LOWER(%)	0.6%
FLAMMABILITY LIMIT - UPPER(%)	8.0%		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions and recommended use.

WD40 AEROSOL**CONDITIONS TO AVOID**

Aerosol cans: Must not be exposed to direct sunlight or temperatures above 50°C.

HAZARDOUS DECOMPOSITION PRODUCTS

During fire, toxic gases (CO, CO₂) are formed.

11 TOXICOLOGICAL INFORMATION**INHALATION**

Vapours may cause headache, fatigue, dizziness and nausea.

SKIN CONTACT

Repeated exposure may cause skin dryness or cracking.

EYE CONTACT

Spray and vapour in the eyes may cause irritation and smarting.

Other Health Effects

This substance has no evidence of carcinogenic properties.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

The product contains substances which contribute to global warming (greenhouse effect).

BIOACCUMULATION

The product contains potentially bioaccumulating substances.

DEGRADABILITY

The product is easily biodegradable.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Dispose of waste and residues in accordance with local authority requirements. Make sure containers are empty before discarding (explosion risk). Recover and reclaim or recycle, if practical.

14 TRANSPORT INFORMATION

UK ROAD CLASS	2.1		
PROPER SHIPPING NAME	AEROSOLS		
UN NO. ROAD	1950	UK ROAD PACK GR.	#
ADR CLASS NO.	2.1	ADR CLASS	Class 2: Gases
ADR PACK GROUP	#	ADR LABEL NO.	2.1
CEPIC TEC(R) NO.	20G5F	RID CLASS NO.	2.1
RID PACK GROUP	#	UN NO. SEA	1950
IMDG CLASS	2.1	IMDG PACK GR.	#
EMS	F-D, S-U	MFAG	See Guide
MARINE POLLUTANT	No.	UN NO. AIR	1950
AIR CLASS	2.1	AIR PACK GR.	#

15 REGULATORY INFORMATION

CONTAINS PETROLEUM DISTILLATE

RISK PHRASES

R10	Flammable.
R66	Repeated exposure may cause skin dryness or cracking.

WD40 AEROSOL**SAFETY PHRASES**

S2	Keep out of the reach of children
S16	Keep away from sources of ignition - No smoking.
S23	Do not breathe vapour/spray.
S37	Wear suitable gloves.
S51	Use only in well-ventilated areas.
A1	Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
A2	Do not spray on a naked flame or any incandescent material.

EU DIRECTIVES

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

STATUTORY INSTRUMENTS

Chemicals (Hazard Information and Packaging) Regulations.

APPROVED CODE OF PRACTICE

Classification and Labelling of Substances and Preparations Dangerous for Supply.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION**REVISION COMMENTS**

Re-issued in accordance with Regulation (EC) No. 1907/2006 Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

REVISION DATE 09-2007

REV. NO./REPL. SDS GENERATED 3 / 02-2007

RISK PHRASES IN FULL

NC	Not classified.
R10	Flammable.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.

DISCLAIMER

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use. ,



SAFETY DATA SHEET

WD40 BULK

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME WD40 BULK
SUPPLIER WD-40 Company Limited
PO Box 440
Kiln Farm
Milton Keynes
MK11 3LF
Tel: 01908 555400
Fax: 01908 266900

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
NAPHTHA (PETROLEUM) HYDROTREATED HEAVY	265-150-3	64742-48-9	60-100%	Xn;R65. R10,R66.

The Full Text for all R-Phrases are Displayed in Section 16

3 HAZARDS IDENTIFICATION

Flammable. Repeated exposure may cause skin dryness or cracking. Harmful: may cause lung damage if swallowed.

CLASSIFICATION Xn;R65. R10, R66.

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Perform artificial respiration if breathing has stopped. Get medical attention immediately!

INGESTION

DO NOT INDUCE VOMITING! NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Rinse mouth thoroughly. Get medical attention. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention immediately!

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Extinguish with foam, carbon dioxide or dry powder.

SPECIAL FIRE FIGHTING PROCEDURES

Containers close to fire should be removed immediately or cooled with water. Avoid water in straight hose stream; will scatter and spread fire. Keep run-off water out of sewers and water sources. Dike for water control.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Avoid discharge to the aquatic environment.

SPILL CLEAN UP METHODS

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Stop leak if possible without risk. Absorb in vermiculite, dry sand or earth and place into containers. Flush with plenty of water to clean spillage area. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

WD40 BULK**7 HANDLING AND STORAGE****USAGE PRECAUTIONS**

Keep away from heat, sparks and open flame. Avoid inhalation of vapours/spray and contact with skin and eyes.

STORAGE PRECAUTIONS

Keep in original container.

STORAGE CLASS

Flammable liquid storage.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**HAND PROTECTION**

Rubber gloves are recommended. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

EYE PROTECTION

Wear approved, tight fitting safety glasses where splashing is probable.

HYGIENE MEASURES

DO NOT SMOKE IN WORK AREA! Promptly remove any clothing that becomes contaminated. Wash promptly if skin becomes contaminated. When using do not eat, drink or smoke.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Liquid		
COLOUR	Light (or pale) Amber		
ODOUR	Characteristic		
SOLUBILITY	Insoluble in water		
BOILING POINT (°C)	148°C (minimum) 760 mm Hg	RELATIVE DENSITY	0.817 @ 21°C
VAPOUR DENSITY (air=1)	> 1	VOLATILE BY VOL. (%)	78%
FLASH POINT (°C)	44°C TOC (Tag open cup).	FLAMMABILITY LIMIT - LOWER(%)	0.6%
FLAMMABILITY LIMIT - UPPER(%)	8.0%		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID

Avoid heat, flames and other sources of ignition. Avoid contact with strong oxidisers.

HAZARDOUS POLYMERISATION

Will not polymerise.

HAZARDOUS DECOMPOSITION PRODUCTS

During fire, toxic gases (CO, CO₂, NO_x) are formed.

11 TOXICOLOGICAL INFORMATION**INGESTION**

Harmful: may cause lung damage if swallowed. May cause discomfort if swallowed. May cause stomach pain or vomiting.

SKIN CONTACT

Repeated exposure may cause skin dryness or cracking.

EYE CONTACT

Splashes may irritate.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

The product is not expected to be hazardous to the environment.

BIOACCUMULATION

The product contains potentially bioaccumulating substances.

DEGRADABILITY

The product is easily biodegradable.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Dispose of waste and residues in accordance with local authority requirements.

WD40 BULK

14 TRANSPORT INFORMATION



UK ROAD CLASS	3		
PROPER SHIPPING NAME	PETROLEUM DISTILLATES, N.O.S., or PETROLEUM PRODUCTS, N.O.S.		
UN NO. ROAD	1268	UK ROAD PACK GR.	III
ADR CLASS NO.	3	ADR CLASS	Class 3: Flammable liquids.
ADR PACK GROUP	III	HAZARD No. (ADR)	30
ADR LABEL NO.	3	HAZCHEM CODE	3Y
CEPIC TEC(R) NO.	30GF1-III	RID CLASS NO.	3
RID PACK GROUP	III	UN NO. SEA	1268
IMDG CLASS	3	IMDG PACK GR.	III
EMS	F-E, S-E	MFAG	See Guide
MARINE POLLUTANT	No.	UN NO. AIR	1268
AIR CLASS	3	AIR PACK GR.	III

15 REGULATORY INFORMATION

LABELLING



Harmful

CONTAINS NAPHTHA (PETROLEUM) HYDROTREATED HEAVY

RISK PHRASES

R10	Flammable.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.

SAFETY PHRASES

S2	Keep out of the reach of children
S24	Avoid contact with skin.
S46	If swallowed, seek medical advice immediately and show this container or label.

STATUTORY INSTRUMENTS

Control of Substances Hazardous to Health. Chemicals (Hazard Information and Packaging) Regulations.

APPROVED CODE OF PRACTICE

Classification and Labelling of Substances and Preparations Dangerous for Supply. Safety Data Sheets for Substances and Preparations.

GUIDANCE NOTES

CHIP for everyone HSG(108). Workplace Exposure Limits EH40.

16 OTHER INFORMATION

REVISION DATE 01-2006
 REV. NO./REPL. SDS GENERATED 1 / 03-2002

RISK PHRASES IN FULL

R10	Flammable.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.

DISCLAIMER

The information and recommendations contained in this safety data sheet represent, to the best of our knowledge and belief, an accurate and reliable representation as to the known data for this preparation at the date of issue. The information is intended only as a guide for safe handling, use, processing, storage and release and is not to be considered a warranty or quality specification. It is the responsibility of the user to evaluate this information in a prudent manner and to use it in a manner that is consistent for his/her particular purpose.