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## **HVAC SERVICE**

### **MSDS**

## **MATERIAL SAFETY DATA SHEETS**

*Some contractors talk customer satisfaction.....we guarantee it!*

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1125 W. Amity Rd.  
Boise, ID 83705  
208-336-1643

Emergency Telephone Number: Chemtrec (800) 424-9300  
Or Norco (208) 336-1643

## PRODUCT NAME: ACETYLENE

### MATERIAL SAFETY DATA SHEET

#### Identification

Product Name: Acetylene  
CAS Number: 74-86-2  
Chemical Family: Alkyne  
Chemical Formula: C<sub>2</sub>H<sub>2</sub>  
Common Names/Synonyms: Ethyne, Acetylen, Welding Gas  
MSDS Identification Number: 1001  
Prepared By: Quality Dept.

Revision Date: 08/13/04  
Last Review Date: 08/13/04

#### Composition/Information on Ingredients

##### Exposure Limits<sup>1</sup>:

INGREDIENT	% VOLUME	PEL-OSHA <sup>2</sup>	TLV-ACGIH <sup>3</sup>	LD <sub>50</sub> or LC <sub>50</sub> Route/Species
Acetylene Formula: C <sub>2</sub> H <sub>2</sub> CAS #: 74-86-2 RTECS #: AO9600000	95.0% to 99.6%	Not Available	Simple Asphyxiant	Not Available
Acetone Formula: C <sub>3</sub> H <sub>6</sub> O CAS #: 67-64-1 RTECS #: AL3150000	Not Available	1000 ppm TWA	500 ppm TWA 750 ppm STEL	LD <sub>50</sub> : 1297 mg/kg ingestion/mouse

<sup>1</sup> Refer to individual state or provincial regulations, as applicable, for limits which may be more stringent than those listed here.

<sup>2</sup> As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993).

<sup>3</sup> As stated in the ACGIH 2004 Threshold Limit Values for Chemical Substances and Physical Agents

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

#### Hazards Identification

##### Emergency Overview:

Flammable colorless gas with slight garlic odor. Dangerous fire and explosion hazard. Avoid heat, sparks and flames. Simple Asphyxiant – This product does not contain oxygen and may cause asphyxia if released in a confined area. Maintain oxygen levels above 19.5%. May cause anesthetic effects. Highly flammable under pressure. Spontaneously combustible in air at pressures above 15 psig. Acetylene liquid is shock sensitive. Contents under pressure. Use and store below 125°F, (52°C).

##### Route of Entry:

Skin Contact	Skin Absorption	Eye contact	Inhalation	Ingestion
No	No	No	Yes	No

##### Health Effects:

Exposure Limits	Irritant	Sensitization
Yes	Yes	No
Teratogen	Reproductive Hazard	Mutagen
No	No	No

##### Synergistic Effects:

None Reported

Carcinogenicity: NTP: No IARC: No OSHA: No

## Hazards Identification Continued

**Eye Effects:**

May cause irritation.

**Skin Effects:**

Skin effects are not likely. Contact with liquid acetylene may cause irritation and dermatitis upon repeated exposures.

**Ingestion Effects:**

Ingestion is unlikely.

**Inhalation Effects:**

Acetylene is an asphyxiant and may cause anesthetic effects at high concentrations. High concentrations may exclude an adequate supply of oxygen to the lungs. Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgment, depression of all sensations, emotional instability and fatigue. As asphyxiation progresses, nausea, vomiting, prostration and loss of consciousness may result, eventually leading to convulsions, coma and death.

Under normal operating conditions, acetone is not released from the cylinder. However, if the cylinder is overcharged with acetone or acetylene, acetone may occasionally "spit" out. Acetone is primarily an irritant and CNS depressant. High concentrations may have central nervous system effects causing headache, nausea, dizziness, vomiting and fatigue.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

**Medical Conditions Aggravated by Exposure:**

May aggravate pre-existing skin disorders.

**NFPA Hazard Codes**

Health: 0  
Flammability: 4  
Instability: 2

**HMIS Hazard Codes**

Health: 2  
Flammability: 4  
Physical Hazards: 2

**Ratings System**

0 = No Hazard  
1 = Slight Hazard  
2 = Moderate Hazard  
3 = Serious Hazard  
4 = Severe Hazard

Hazard codes based on recommendations in CGA P-19 2004, *CGA Recommended Hazard Ratings for Compressed Gases*.

## First Aid Measures

**Eyes:**

None normally required. Consult a physician if direct contact with pressurized material occurs. Immediately flush with low pressure, cool water for at least 15 minutes, opening eyelids to ensure flushing. Get medical attention.

**Skin:**

Contaminated clothing presents a fire hazard and should be immediately removed. Wash affected areas with soap and warm water. If irritation develops, seek medical attention.

**Ingestion:**

Not normally required.

**Inhalation:**

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO PRODUCT. RESCUE PERSONNEL SHOULD BE EQUIPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted (artificial) respiration and supplemental oxygen. Further treatment should be symptomatic and supportive. Keep victim warm and quiet.

<b>Fire Fighting Measures</b>
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Conditions of Flammability: Flammable		
Flash point: Not Available	Method: Not Applicable	Autoignition Temperature: 565°F (296°C)
LEL (%): 2.3	UEL (%): 100	
Hazardous combustion products: Carbon monoxide, Carbon dioxide		
Sensitivity to mechanical shock: May decompose		
Sensitivity to static discharge: May ignite		

**Fire and Explosion Hazards:**

Fire will produce carbon monoxide and carbon dioxide. Pure acetylene can ignite by decomposition above 15 psig; therefore, the UEL is 100% if the ignition source is of sufficient intensity. Pure acetylene is shock sensitive. Do not allow smoking in storage areas or when handling. Cylinders may rupture violently from pressure when involved in a fire situation.

GASEOUS ACETYLENE IS SPONTANEOUSLY COMBUSTIBLE IN AIR AT PRESSURE ABOVE 15 PSI (270 kPa.). It requires a very low ignition energy so that fires which have been extinguished without stopping the flow of gas can easily reignite with possible explosive force. Acetylene has a density very similar to that of air so when leaking it does not readily dissipate. Gas may travel to a source of ignition and flash back.

Fires involving acetylene occur occasionally at fusible metal pressure relief plugs at the tops and bottoms of cylinders, commonly due to hot metal or slag being dropped on the fusible plugs. When the fusible plug releases, a large volume of acetylene will rush out creating a "roaring" sound. The flame may extend a foot or two away from the cylinder until the pressure is reduced. In some cases, the other end of the cylinder may develop a coating of frost.

**Extinguishing Media:**

Water, carbon dioxide or dry chemical.

**Fire Fighting Instructions:**

**WARNING: ALWAYS EXTINGUISH A FIRE BEFORE CLOSING THE CYLINDER VALVE.** If the flame is small from the fusible plug or valve stem, try to put it out. Use non-sparking tools to close container valves. Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear. If fire is allowed to keep burning it is likely that the fusible plug will melt and result in a large release of acetylene. A glove or heavy cloth or any wet material slapped on the flame will frequently extinguish it.

If the flame is large, burning from a fusible plug, **DO NOT** try to put it out unless the cylinder is outdoors or in a very well ventilated area free from sources of ignition. Usually it is very difficult to extinguish large fires because escaping acetylene may be reignited by adjacent ignition sources, thereby possibly creating a confined space explosion. Continue to cool fire-exposed cylinders until well after flames are extinguished. Cylinders should not be moved until they have reached ambient temperature in case internal decomposition is taking place. Be cautious of a Boiling Liquid Evaporating Vapor Explosion, BLEVE, if flame is impinging on surrounding containers. Direct 500 GPM water stream onto containers above liquid level with remote monitors. Limit the number of personnel in proximity of fire and evacuate surrounding areas in all directions

<b>Accidental Release Measures</b>
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Extinguish all ignition sources. No smoking, flares, flames or sparks in hazard area. Evacuate all personnel from affected areas and provide maximum explosion proof ventilation. Never enter a confined space or other area where the concentration is greater than 10% of the LEL (0.23%). Isolate the area for over ½ mile in all directions in the event of leakage of an acetylene trailer. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve contact the appropriate emergency telephone number listed in Section I or call your closest Norco/NorLab location.

If possible to do so safely, shut off ignition sources and stop the leak by closing the valve. For small leaks, cylinders may be moved to an area outdoors and away from any source of ignition. Circumstances which it is advisable to attempt removal of the cylinder are when cylinders are in close proximity to other compressed gases, when highly flammable materials or hazardous materials are in the vicinity of the acetylene cylinder(s), or where protection of the building is unusually difficult and spreading of a fire may produce a major loss of life or property. **DO NOT ATTEMPT TO REMOVE CYLINDERS THAT HAVE BEEN EXPOSED TO HEAT.** When the cylinder is removed, it may be hosed down with water to keep it cool. Open the valve slowly to let the acetylene escape. Tag the cylinder with "WARNING – Leaking Flammable Gas". Close valve when empty.

## Handling and Storage

**Electrical Classification:**

Class I, Group A.

All acetylene piped systems and associated equipment must be grounded. Never use copper piping for acetylene service. Only steel or wrought iron pipe should be used. Open cylinder valve minimum amount required (no more than 1- 1.5 turns) to deliver acceptable flow to enable the cylinder to be closed quickly in an emergency situation. Acetylene is shipped in a cylinder packed with a porous mass material, and a liquid solvent, commonly acetone. Acetylene is dissolved in the acetone solution and dispersed throughout the porous medium. When the valve of a charged acetylene cylinder is opened, the acetylene comes out of solution and passes out in gaseous form. **IT IS CRUCIAL THAT FUSE PLUGS IN THE TOPS AND BOTTOMS OF ALL ACETYLENE CYLINDERS BE THOROUGHLY INSPECTED WHENEVER HANDLED. REMOVE AND QUARANTINE IN A SAFE LOCATION ANY DEFECTIVE CYLINDER.**

Post "NO SMOKING OR OPEN FLAMES" signs in use and storage areas. There should be no sources of ignition in areas where this product is being used or stored. . Never leak check with open flame. Use only in well-ventilated areas.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavy traffic areas and emergency exits. Outside or detached storage is preferred. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time.

Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Close valve after each use and when the container is empty. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure regulator when connecting cylinder to piping or systems. Do not use gas directly from cylinder. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

Never attempt to repair or alter cylinders. Never tamper with pressure relief devices or fusible plugs. Under no circumstances allow a torch or flame to contact the fusible plug. While welding, avoid contact of the cylinder, welding equipment or electrical circuits.

If rough handling or other circumstances should cause any fusible plug to leak, move the cylinder to an open space well away from a possible source of ignition. Place a sign on the cylinder warning of "Leaking Flammable Gas". Call you supplier.

Unless oxygen and acetylene are separated, there should be a non-combustible partition of at least 5 ft high with a fire resistance rating of one-half hour between cylinders. In the U.S. cylinders stored inside a building near user locations must be limited to a total capacity of 2500 ft<sup>3</sup> of gas, exclusive of in-use or attached for use cylinders.

Do not store cylinders on their side. This makes the acetylene less stable and less safe and increases the likelihood of solvent loss and resultant decomposition.

For additional recommendations consult Compressed Gas Association Pamphlet P-1, G-1, G-1.1, AV-9, C-13, SB-4, and NFPA 51.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

## Exposure Controls, Personal Protection

**Engineering Controls:**

Use local exhaust and general ventilation systems to prevent build up of flammable concentrations. May use hood with forced ventilation when handling small quantities. If product is handled routinely where the potential for leaks exists, all electrical equipment must be rated for use in potentially flammable atmospheres. Consult the National Electrical Code of details.

**Eye/Face Protection:**

Safety goggles or glasses.

**Skin Protection:**

Protective gloves suitable for the job.

### Exposure Controls, Personal Protection Continued

**Respiratory Protection:**

For emergency release use a positive pressure NIOSH approved air-supplying respirator system (SCBA or airline/escape bottle) using at a minimum Grade D air.

**Other/General Protection:**

Safety shoes. Cotton clothing is recommended to prevent static build-up.

### Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure at 70°F	: 650	psia
Vapor density at STP (Air=1)	: Not Available	
Evaporation point	: Not Available	
Boiling Point	: -118.8	°F
	: -83.8	°C
Freezing point	: -113	°F
	: -80.6	°C
pH	: Not Available	
Specific gravity (H <sub>2</sub> O = 1 at 77°F and 1 atm.)	: 0.906	
Oil/water partition coefficient	: Not Available	
Solubility (H <sub>2</sub> O)	: Soluble	
Odor threshold	: Not Available	
Odor and appearance	: Colorless gas. Acetylene of 100% purity is odorless but commercial purity has a distinctive garlic-like odor.	

### Stability and Reactivity

**Stability:**

Unstable. Stable as shipped. Shock sensitive in the liquid state. Do not allow free gas (outside of cylinder) to exceed 15 psig. Do not expose cylinders to sudden shock or heat. Acetylene will decompose violently with cylinder failure.

**Incompatible Materials/Conditions:**

Oxygen and other oxidizers including all halogens and halogen compounds. Forms explosive acetylide compounds with copper, mercury, silver, brasses containing > 66% copper and brazing materials containing silver or copper. The use of acetylene and these metals, or their salts, compounds, and high concentration alloys should be avoided. Moisture, certain acids and alkaline materials may enhance the formation of copper acetylides. Keep away from heat, sparks, flames and other ignition sources.

**Hazardous Decomposition Products:**

Acetylene decomposes at high pressure to its constituent elements of carbon and hydrogen. Burning may produce carbon monoxide and carbon dioxide.

**Hazardous Polymerization:**

Temperatures as low as 250 °F (121 °C) at high pressure, or at low pressure in the presence of a catalyst are sufficient to initiate a polymerization reaction. The hazard here is that the polymerization normally liberates heat and may, therefore, lead to ignition and decomposition of acetylene if conditions permit.

### Toxicological Information

**Skin and Eye:**

Adverse effects are not expected. Repeated contact may cause minor irritation.

**Inhalation:**

High concentrations (10-20% in air) cause symptoms similar to that of being intoxicated. As a narcotic gas or intoxicant, it causes hypercapnia (an excessive amount of carbon dioxide in the blood). Repeated exposures to tolerable levels have not shown deleterious effects. TC<sub>Lo</sub>, human – inhalation of 20 ppm inhaled has been shown to cause headache and dyspnea. Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

### Ecological Information

No adverse ecological effects expected. Product does not contain any Class I or Class II ozone-depleting chemicals. Not toxic. Will not bioconcentrate.

### Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities in returnable containers. Return in shipping container, *properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place* to Norco for proper disposal.

### Transport Information

Parameter	United States DOT	Canada TDG
<b>Proper Shipping Name:</b>	Acetylene, dissolved	Acetylene, dissolved
<b>Hazard Class:</b>	2.1	2.1
<b>Identification Number:</b>	UN 1001	UN 1001
<b>Shipping Label:</b>	Flammable Gas	Flammable Gas

### Regulatory Information

**SARA Title III Notifications and Information:**

**SARA Title III – Section 313 Supplier Notification:**

This product does not contain toxic chemicals subject to reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and 40 CFR 372.

**SARA Title III – Hazard Classes:**

Acute Health Hazard

Fire Hazard

Sudden Release of Pressure Hazard

### Other Information

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

**Disclaimer of Expressed and Implied Warranties:**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

ITEM: 1ANG9 - Alkaline Based Coil Cleaner 1 Gal

PICK REQ: 1080137057

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: B2447

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - B2447

Associated Grainger Item: 1AN39 - Alkaline Based Coil Cleaner 1 Gal

NU-CALGON WHOLESALER, INC.

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY NAME: NU-CALGON WHOLESALER, INC.

STREET ADDRESS: 2008 ALTON COURT

CITY: ST. LOUIS

STATE: MO

POSTAL CODE: 63146-4151

PHONE NUMBER:  
(314) 469-7000  
(800) 554-5499

CHEMIREC: (800) 424-9300

PRODUCT NAME: NU-BRITE

PRODUCT NUMBER: 4291

PRODUCT USE: COIL CLEANER/DEGREASER

LAST UPDATE: 1/25/07

EPA REGISTRATION #: N/A

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS	% BY WT.	CAS NUMBER	TLV	PEL
SODIUM HYDROXIDE (CAUSTIC SODA)	20-30%	1310-73-2	2 MG/M3 (TWA/STEL)	2 MG/M3
NONIONIC SURFACTANT	1-10%	PROPRIETARY	NONE ESTABLISHED	NONE ESTABLISHED

SECTION 3 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:  
CORROSIVE LIQUID. CONTAINS SODIUM HYDROXIDE. 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 CONTACT WITH EYES WILL CAUSE SEVERE IRRITATION, POSSIBLY BURNS AND PERMANENT DAMAGE.

SKIN:  
CONTACT WITH SKIN CAN CAUSE SEVERE IRRITATION WITH PAIN, POSSIBLY PRODUCE SEVERE CHEMICAL BURNS AND DESTROY TISSUES; IRRITATION MAY BE DELAYED.

INGESTION:  
HARMFUL OR FATAL IF SWALLOWED - CAUSES SEVERE BURNS OF THE MOUTH, THROAT AND STOMACH IF INGESTED.

INHALATION:  
INHALATION OF GENERATED MISTS OR SPRAY MAY CAUSE RESPIRATORY IRRITATION OR CHEMICAL BURNS OF MOUTH, THROAT, AND STOMACH.

CHRONIC EXPOSURE:  
CHRONIC LOCAL EFFECT MAY CONSIST OF MULTIPLE AREAS OF SUPERFICIAL DESTRUCTION OF THE SKIN OR OF PRIMARY IRRITANT DERMATITIS.

CARCINOGENICITY: NONE

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:  
AN EXISTING DERMATITIS AND RESPIRATORY ILLNESSES.

SECTION 4 - FIRST AID MEASURES

EYES:  
FLUSH EYES WITH WATER FOR AT LEAST 30 MINUTES AND CALL A PHYSICIAN IMMEDIATELY. SPEED OF ACTION IS ESSENTIAL.

SKIN:  
REMOVE CONTAMINATED CLOTHING. WASH WITH LARGE AMOUNTS OF SOAP AND WATER. IF SKIN STILL FEELS SLIPPERY OR IF IRRITATION PERSISTS, CONTINUE WASHING. CONSULT A PHYSICIAN IN THE CASE OF ANY PROLONGED IRRITATION..

INGESTION:  
DO NOT INDUCE VOMITING. IMMEDIATELY GIVE LARGE QUANTITIES OF WATER OR (PREFERABLY) MILK AND CALL A PHYSICIAN. SPEED OF ACTION IS ESSENTIAL.

INHALATION:  
REMOVE TO FRESH AIR. START ARTIFICIAL RESPIRATION IF NECESSARY. OXYGEN MAY BE ADMINISTERED. CALL A PHYSICIAN.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: NONE TO BOILING DEG. F

AUTOIGNITION TEMP:  
N/A DEG. C

N/A DEG. F

HAZARDOUS PRODUCTS OF COMBUSTION:  
BURNING MAY 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: NONE

SPECIAL FIREFIGHTING PROCEDURES:  
DO NOT EVER CONFINED FIRE SPACES WITHOUT PROTECTIVE CLOTHING AND A SELF-CONTAINED AIR SUPPLY.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK:  
CORROSIVE LIQUID. BEFORE ATTEMPTING CLEAN UP, REFER TO PERSONAL PROTECTION INFORMATION. DO NOT TOUCH OR WALK THROUGH SPILLED MATERIAL. STOP LEAK IF YOU CAN WITHOUT RISK. DIKE AHEAD OF LARGE SPILLS TO PREVENT RUN-OFF. MOP, PUMP OR TAKE UP WITH SAND OR OTHER INERT ABSORBENT AND RECLAIM INTO CONTAINERS FOR REUSE, RECYCLE OR PROPER DISPOSAL.

SECTION 7 - HANDLING AND STORAGE

HANDLING PROCEDURES AND EQUIPMENT:  
CORROSIVE MATERIAL. AVOID CONTACT WITH CORROSION SENSITIVE METALS, LEATHER AND WOOD. DO NOT GET IN EYES, ON SKIN OR CLOTHING. SPRAYS AND GENERATED MISTS CAN BE DANGEROUS. USE ONLY ACCORDING TO DILUTION INSTRUCTIONS AND WITH ADEQUATE PROTECTIVE CLOTHING.

STORAGE REQUIREMENTS:  
CORROSIVE MATERIAL. KEEP CONTAINER CLOSED WHEN NOT IN USE.

DOT CLASS:  
CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (CONTAINS SODIUM HYDROXIDE), 8, UN3266. PG-II. KEEP OUT OF REACH OF CHILDREN. STORE AWAY FROM ACIDS AND OXIDIZING MATERIALS.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:  
SPECIFIC USE CONDITIONS (SPRAYING/CONFINED SPACES) WHERE REGULATORY LIMITS FOR NaOH 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 A APPROVED RESPIRATOR WITH ALKALINE MIST/GAS CARTRIDGE & FULL FACE PIECE.

EYE PROTECTION:  
CLOSE FITTING SAFETY GLASSES/GOGGLES/ FACE SHIELD DEPENDING UPON CONDITIONS OF USE.

PROTECTIVE CLOTHING:  
IMPERVIOUS PROTECTIVE CLOTHING APPROPRIATE TO MINIMIZE CONTACT (IE: RUBBER BOOTS, APRON, FACESHIELD) ESPECIALLY WHERE SPRAY BACK/MISTING CONDITIONS EXIST. RUBBER PROTECTIVE GLOVES.

EXPOSURE GUIDELINES:  
NaOH TLV = 2MG/M3. EYE WASH STATION AND SAFETY SHOWER IN HANDLING AREA.

SPECIFIC ENGINEERING CONTROLS (SUCH AS VENTILATION, ENCLOSED PROCESS):  
INSURE ADEQUATE VENTILATION TO CONTROL NaOH AIRBORNE CONCENTRATION BELOW TLV OF 2MG/M3. EYE WASH STATION AND SAFETY SHOWER IN HANDLING AREA.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: LIQUID

FREEZING POINT: APPROX. 0 DEG. C/APPROX. 32 APPROX.0 DEG. F

% VOLATILE BY WEIGHT: APPROX. 76%

COLOR: BLUE

VAPOR DENSITY (AIR = 1): NOT DETERMINED

EVAPORATION RATE (VS. H2O): ABOUT THE SAME.

ODOR: NO DISTINCT ODOR

VAPOR PRESSURE: NOT DETERMINED

SPECIFIC GRAVITY (H2O = 1.0): 1.252 (+/- 0.005)

BOILING POINT: 100 DEG. C/212 DEG. F

SOLUBILITY IN WATER: COMPLETE

pH (CONCENTRATE): 10%  
Ph: 13.3 (+/- 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:  
DO NOT MIX WITH CHLORINATED DETERGENTS (BLEACH) OR ANY OTHER CHEMICALS.

DECOMPOSITION PRODUCTS:  
BURNING MAY PRODUCE OXIDES OF CARBON AND OTHER SUBSTANCES.

SECTION 11 - TOXICOLOGICAL INFORMATION

HAZARDOUS INGREDIENTS	CAS #	EINECS #	LD50 OF INGREDIENT (SPECIFY SPECIES)	LD50 OF INGREDIENT (SPECIFY SPECIES)
SODIUM HYDROXIDE	1310-73-2	NO DATA.	1350 MG/KG (ORAL; RAT)	358 MG/L (FATHEAD MINNOW)
NONIONIC SURFACTANT	PROPRIETARY	NO DATA.	>5.0 G/KG (ORAL; RAT)	NOT DETERMINED

SECTION 12 - ECOLOGICAL INFORMATION

HAZARDOUS INGREDIENTS	AQUATIC TOXICITY DATA
SODIUM HYDROXIDE	LC50 (96 HR.) (FATHEAD MINNOW): 358 MG/L
NONIONIC SURFACTANT	NOT DETERMINED

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.

FURVIEW	PROPER SHIPPING NAME	UN NUMBER	PACKING GROUP	HAZARD CLASS
DOT (LAND)	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (CONTAINS SODIUM HYDROXIDE)	UN3266	II	8
IMO (WATER)	NO DATA.	NO DATA.	NO DATA.	NO DATA.
ICAO (AIR)	NO DATA.	NO DATA.	NO DATA.	NO DATA.

SECTION 15 - REGULATORY INFORMATION

WHMIS CLASSIFICATION (WORKPLACE HAZARDOUS MATERIAL INFORMATION SYSTEM):  
CLASS E - CORROSIVE MATERIAL

SARA TITLE III (SUPERFUND AMENDMENTS & REAUTHORIZATION ACT):  
CONTAINS NO SECTION 313 LISTED SUBSTANCES SUBJECT TO REPORTING REQUIREMENTS.

OSHA (OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION):  
OSHA HAZARDOUS - CORROSIVE LIQUID. 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):  
RQ: >5,000 LBS (NaOH)

IDL (CANADIAN INGREDIENT DISCLOSURE LIST):  
SODIUM HYDROXIDE IS LISTED ON THE IDL.

NFPA (HMIS) RATING (HAZARDOUS MATERIALS IDENTIFICATION SYSTEM):  
HEALTH 3  
FLAMMABILITY 0  
REACTIVITY 1

SECTION 16 - OTHER INFORMATION

NO DATA.

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.

ITEM: 2YMW6 - Disposable Fuel Cylinder MAP-Pro 1

PICK REQ: 1080137057

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: B2575

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - B2575

Associated Grainger Item: 2Y5W6 - Disposable Fuel Cylinder MAP-Pro 1

WORTHINGTON CYLINDERS

A WORTHINGTON INDUSTRIES COMPANY

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: MAP-PRO(TM) PREMIUM HAND TORCH FUEL

DESCRIPTION: PROPYLENE

COMPANY: WORTHINGTON CYLINDER CORPORATION

ADDRESS:  
200 OLD WILSON BRIDGE ROAD  
COLUMBUS, OHIO 43085

INFORMATION: 614-438-7960

EMERGENCY CHEMTREC: (800) 424-9300

DATE ISSUED: FEBRUARY 26, 2008

LAST REVISED: ORIGINAL

SECTION 2: HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS

INGREDIENT	CAS NUMBER	WEIGHT %	OSHA PEL (PPM)	ACGIH TLV (PPM)
PROPYLENE	115-07-1	99.5-100	NOT ESTABLISHED	500
PROPANE	74-98-6	0-0.5	1000	1000

SECTION 3: PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: -54 DEG. F  
 VAPOR PRESSURE: 109.73 PSIG @ 70 DEG. F  
 MELTING POINT: -301 DEG. F  
 VAPOR DENSITY (AIR=1): 1.5 @ 32 DEG. F  
 SPECIFIC GRAVITY: 0.52 (LIQUID)  
 SOLUBILITY IN WATER: SLIGHT  
 MOLECULAR WEIGHT: 42  
 PERCENT VOLATILE BY WEIGHT: 100  
 APPEARANCE: COLORLESS GAS  
 ODOR: HYDROCARBON

SECTION 4: FIRE AND EXPLOSION DATA

FLASH POINT: -162 DEG. F  
 AUTO IGNITION: 927 DEG. F  
 LOWER EXPLOSION LIMIT: 2.0% BY VOLUME IN AIR  
 UPPER EXPLOSION LIMIT: 11.0% BY VOLUME IN AIR

GENERAL FIRE HAZARDS:  
 LIQUID RELEASES VAPORS THAT READILY FORM A FLAMMABLE MIXTURE WITH AIR.  
 DANGEROUS FIRE AND EXPLOSION HAZARD WHEN EXPOSED TO HEAT, SPARKS OR FLAME.  
 VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL LONG DISTANCES TO A POINT OF  
 IGNITION. CONTAINER MAY EXPLODE IN HEAT OR FLAME.

HAZARDOUS COMBUSTION PRODUCTS:  
 CARBON MONOXIDE, CARBON DIOXIDE AND VARIOUS NON-COMBUSTED HYDROCARBONS.

EXTINGUISHING MEDIA: DRY CHEMICAL, FOAM, CARBON DIOXIDE, HALON OR WATER.

UNUSUAL FIRE HAZARDS:  
 USE EXTREME CAUTION WHEN FIGHTING LIQUEFIED PETROLEUM GAS FIRES. HEATED  
 CONTAINERS MAY RUPTURE VIOLENTLY AND SUDDENLY WITHOUT WARNING DUE TO VESSEL  
 OVERPRESSURE (BLEVE-BOILING LIQUID EXPANDING VAPOR EXPLOSIONS). IF SAFE TO  
 DO SO STOP THE FLOW OF GAS AND ALLOW THE FLAME TO BURN OUT. EXTINGUISHING  
 THE FLAME BEFORE SHUTTING OFF THE SUPPLY CAN CAUSE FORMATION OF EXPLOSIVE  
 MIXTURES. IN SOME CASES IT MAY BE PREFERRED TO ALLOW THE FLAME TO CONTINUE  
 TO BURN. USE WATER TO COOL EQUIPMENT, SURFACES AND CONTAINERS EXPOSED TO  
 FIRE AND EXCESSIVE HEAT.

SECTION 5: REACTIVITY DATA

CHEMICAL STABILITY: STABLE

HAZARDOUS DECOMPOSITION PRODUCTS:  
 CARBON OXIDES AND VARIOUS HYDROCARBONS FORMED WHEN BURNED.

INCOMPATIBILITY:  
 STRONG OXIDIZERS SUCH AS NITRATES, PERCHLORATES, CHLORINE AND FLUORINE.

HAZARDOUS POLYMERIZATION:  
 DOES NOT POLYMERIZE EXCEPT UNDER SPECIAL CONDITIONS (EXTREME TEMPERATURE,  
 PRESSURE, OXIDIZERS).

CONDITIONS TO AVOID: SOURCES OF HEAT, SPARKS OR FLAME.

SECTION 6: HAZARDS IDENTIFICATION

OVERVIEW:

THIS PRODUCT CONTAINS PROPYLENE A COLORLESS LIQUID THAT RAPIDLY TURNS INTO  
 A GAS AT STANDARD ATMOSPHERIC TEMPERATURES AND PRESSURE. PROPYLENE HAS A  
 SLIGHT HYDROCARBON ODOR. IN COMMERCE PROPYLENE IS PACKAGED AS A LIQUEFIED  
 GAS UNDER PRESSURE. PROPYLENE IS EXTREMELY FLAMMABLE AND EXPLOSIVE. AT HIGH  
 CONCENTRATIONS IT ACTS AS A SIMPLE ASPHIXIANT BY DILUTING AND DISPLACING  
 OXYGEN, PARTICULARLY IN CONFINED SPACES. DIRECT CONTACT WITH LIQUEFIED  
 PRODUCT MAY CAUSE FROSTBURNS AND FROSTBITES. USE THIS PRODUCT ONLY IN WELL  
 VENTILATED AREAS AND, WHERE APPROPRIATE, PROPER RESPIRATORY PROTECTION AND  
 PERSONAL PROTECTIVE EQUIPMENT SHOULD BE WORN.

PRIMARY ENTRY ROUTES: INHALATION

TARGET ORGANS: RESPIRATORY SYSTEM

POTENTIAL HEALTH EFFECTS:

INHALATION:

PRODUCT IS AN ANESTHETIC AT HIGH CONCENTRATIONS. INHALATION MAY CAUSE  
 CENTRAL NERVOUS SYSTEM DEPRESSION PRODUCING DIZZINESS, DROWSINESS,  
 HEADACHE, AND SIMILAR NARCOTIC SYMPTOMS. EXTREMELY HIGH CONCENTRATIONS CAN  
 CAUSE ASPHYXIATION AND DEATH BY DISPLACING OXYGEN FROM THE BREATHING  
 ATMOSPHERE.

EYES:

VAPOR IS GENERALLY NON-IRRITATING TO THE EYES. CONTACT WITH LIQUEFIED GAS  
 OR RAPIDLY EXPANDING GASES MAY CAUSE FREEZE BURNS AND FROSTBITES.

SKIN:

VAPOR IS GENERALLY NON-IRRITATING TO THE SKIN. CONTACT WITH LIQUEFIED GAS  
 OR RAPIDLY EXPANDING GASES MAY CAUSE FREEZE BURNS AND FROSTBITES.

INGESTION: INGESTION IS NOT LIKELY.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:  
 CHRONIC DISEASES OR DISORDERS OF THE RESPIRATORY SYSTEM.

TOXICOLOGICAL INFORMATION:

PROPYLENE IS AN ANESTHETIC AND IS MILDLY IRRITATING TO THE MUCOUS  
 MEMBRANES. AT HIGH CONCENTRATIONS PROPYLENE ACTS AS A SIMPLE ASPHIXIANT  
 WITHOUT SIGNIFICANT POTENTIAL FOR SYSTEMIC TOXICITY. HIGH CONCENTRATIONS  
 CAN CAUSE DEATH DUE TO OXYGEN DEPLETION. TOXICITY DATA CAN BE FOUND IN THE  
 REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES AVAILABLE ON-LINE FROM THE  
 NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH).

CARCINOGENIC EFFECTS:

PROPYLENE IS NOT IDENTIFIED AS BEING CARCINOGENIC BY THE INTERNATIONAL  
 AGENCY FOR RESEARCH ON CANCER (IARC), THE NATIONAL TOXICOLOGY PROGRAM  
 (NTP), ACGIH OR OSHA.

SECTION 7: FIRST AID MEASURES

EYE CONTACT:

FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE OCCASIONALLY  
 LIFTING THE EYELIDS. SEEK MEDICAL ATTENTION.

SKIN CONTACT:

REMOVE CONTAMINATED CLOTHING. WASH WITH SOAP AND WATER. GET MEDICAL  
 ATTENTION IF IRRITATION OR REDNESS DEVELOPS. IN CASE OF FROSTBITE, PLACE  
 AFFECTED AREA IN WARM WATER OR WRAP IN BLANKETS IF WARM WATER IS NOT  
 AVAILABLE. DO NOT USE HOT WATER. SEEK IMMEDIATE MEDICAL ATTENTION.

INHALATION:

REMOVE TO FRESH AIR. ADMINISTER OXYGEN OR ARTIFICIAL RESPIRATION IF  
 NECESSARY. SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION:

RISK OF INGESTION IS EXTREMELY LOW. SEEK IMMEDIATE MEDICAL ATTENTION IN  
 CASES OF INGESTION OR ORAL EXPOSURE.

SECTION 8: PERSONAL PROTECTIVE EQUIPMENT

ENGINEERING CONTROLS:

GOOD INDUSTRIAL HYGIENE PRACTICE REQUIRES THAT ENGINEERING CONTROLS BE USED  
 WHERE FEASIBLE TO REDUCE WORKPLACE CONCENTRATIONS OF HAZARDOUS MATERIALS.

VENTILATION:

USE ADEQUATE VENTILATION TO KEEP GAS AND VAPOR CONCENTRATIONS OF THIS  
 PRODUCT BELOW THE OCCUPATIONAL EXPOSURE AND FLAMMABILITY LIMITS,  
 PARTICULARLY IN CONFINED SPACES. USE MECHANICAL VENTILATION THAT IS  
 EXPLOSION PROOF.

RESPIRATORY PROTECTION:

MAINTAIN OXYGEN LEVELS ABOVE 19.5% IN THE WORKPLACE. RESPIRATORS MUST BE  
 WORN IF AMBIENT CONCENTRATIONS OF CONTAMINANTS EXCEED PRESCRIBED EXPOSURE  
 LIMITS. SEEK PROFESSIONAL ADVICE PRIOR TO RESPIRATOR SELECTION AND USE.  
 FOLLOW OSHA RESPIRATOR REGULATIONS (29 CFR 1910.134). SELECT RESPIRATOR  
 BASED ON ITS SUITABILITY TO PROVIDE ADEQUATE WORKER PROTECTION FOR GIVEN  
 WORK CONDITIONS, LEVEL OF AIRBORNE CONTAMINATION, AND PRESENCE OF  
 SUFFICIENT OXYGEN. WHEN REQUIRED, ONLY NIOSH APPROVED RESPIRATORS SHOULD BE  
 USED.

PROTECTIVE CLOTHING:

PROTECTIVE CLOTHING SHOULD BE WORN TO PREVENT SKIN CONTACT. PROTECTIVE  
 GLOVES SHOULD BE WORN AS REQUIRED FOR WELDING OR BURNING. USE INSULATED  
 GLOVES WHERE THERE IS THE POSSIBILITY OF LIQUID CONTACT.

EYE PROTECTION:

USE SAFETY GLASSES OR GOGGLES AS REQUIRED FOR WELDING OR BURNING. USE  
 SPLASH-PROOF GOGGLES OR FACESHIELD WHERE THERE IS THE POSSIBILITY OF LIQUID  
 CONTACT.

SECTION 9: HANDLING AND STORAGE

HANDLING PRECAUTIONS:  
KEEP AWAY FROM FLAME, SPARKS AND EXCESSIVE TEMPERATURES. USE ONLY IN WELL-VENTILATED AREAS.

STORAGE REQUIREMENTS:  
STORE IN A COOL, DRY, WELL-VENTILATED AREA AWAY FROM SOURCES OF IGNITION, STRONG OXIDIZERS OR OTHER INCOMPATIBLE MATERIALS. POST "NO SMOKING OR OPEN FLAME" SIGNS IN THE STORAGE AND USE AREAS. PROTECT CYLINDERS AGAINST PHYSICAL DAMAGE. DO NOT CUT, DRILL, GRIND OR WELD ON EMPTY CYLINDERS SINCE THEY MAY CONTAIN EXPLOSIVE RESIDUES. DO NOT ATTEMPT TO REFILL CYLINDERS.

SPILL RESPONSE PROCEDURES:  
EVACUATE AREA OF ALL UNNECESSARY PERSONNEL. REMOVE OR SHUT OFF ALL SOURCES OF IGNITION. VENTILATE THE AREA THOROUGHLY.

DISPOSAL:  
WASTE DISPOSAL MUST BE IN ACCORDANCE WITH APPROPRIATE FEDERAL, STATE AND LOCAL REGULATIONS.

DOT REQUIREMENTS:  
PRODUCT IS CLASSIFIED AS A HAZARDOUS SUBSTANCE UNDER 49 CFR 172.101.

SHIPPING NAME: PROPYLENE

HAZARD CLASS: 2.1 (FLAMMABLE GAS)

ID NUMBER: UN 1077

PACKING GROUP: NOT APPLICABLE

MARKING: PROPYLENE, UN 1077

LABEL: FLAMMABLE GAS

PLACARD: FLAMMABLE GAS / UN1077

HAZARDOUS SUBSTANCE/RQ: NOT APPLICABLE

SHIPPING DESCRIPTION: PROPYLENE, 2.1 (FLAMMABLE GAS), UN 1077

PACKAGING REFERENCES: 49 CFR 173.304, 173.306, 173.314 AND 173.315

#### SECTION 10: REGULATORY INFORMATION

##### US FEDERAL REGULATIONS:

OSHA HAZARDOUS COMMUNICATION (29 CFR PART 1910.1200):  
THIS PRODUCT IS HAZARDOUS AS DEFINED IN OSHA'S HAZARD COMMUNICATION STANDARD.

OSHA PROCESS SAFETY MANAGEMENT (29 CFR PART 1910.119):  
THIS PRODUCT MAY BE SUBJECT TO OSHA'S PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS STANDARD.

RCRA REPORTABLE QUANTITIES (40 CFR PART 302.4):  
THIS PRODUCT IS NOT REPORTABLE UNDER 40 CFR PART 302.4.

EXTREMELY HAZARDOUS SUBSTANCES (40 CFR PART 355):  
THIS PRODUCT IS NOT REGULATED UNDER 40 CFR PART 355.

RCRA 311/312 HAZARD CLASS (40 CFR PART 370):

THE FOLLOWING HAZARD CATEGORIES APPLY TO THIS PRODUCT:

ACUTE HEALTH HAZARD:

FIRE HAZARD:

RUDDEN RELEASE OF PRESSURE:

RCRA 313 (40 CFR PART 372):

PROPYLENE IS SUBJECT TO THE TOXIC RELEASE REPORTING REQUIREMENTS OF 40 CFR PART 372.

TSCA INVENTORY STATUS: PROPYLENE IS LISTED ON THE TSCA INVENTORY.

CHEMICAL ACCIDENT PREVENTION PROVISIONS (40 CFR PART 68):  
PROPYLENE IS SUBJECT TO THE REPORTING REQUIREMENTS OF 40 CFR PART 68.

##### STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

PROPYLENE IS NOT ON THE CALIFORNIA PROPOSITION 65 LISTS.

THE FOLLOWING STATES ARE KNOWN TO HAVE SPECIFIC REGULATIONS APPLICABLE TO INGREDIENTS IN THIS PRODUCT:

MASSACHUSETTS

MINNESOTA

NEW JERSEY

PENNSYLVANIA

RHODE ISLAND

##### OTHER REGULATIONS:

CANADA DSL/NDL INVENTORY:

PROPYLENE IS LISTED ON THE DOMESTIC SUBSTANCES LIST.

#### SECTION 11: OTHER INFORMATION

##### HAZARD RATINGS:

NFPA:

H 1

F 4

R 1

HMIS (R\*):

H 1

F 4

R 1

HMIS: A, B1

THE HMIS RATINGS DISPLAYED ON THIS MSDS ARE FROM THE HMIS THIRD EDITION. THERE HAVE BEEN SIGNIFICANT CHANGES MADE TO THE SYSTEM. "PH" STANDS FOR "PHYSICAL HAZARD" AS DEFINED IN THE OSHA HAZARDOUS COMMUNICATION STANDARD AND REPLACES THE FORMER CODE "R" FOR "REACTIVITY."

##### DISCLAIMER:

ALL INFORMATION IN THIS MATERIAL SAFETY DATA SHEET IS BELIEVED TO BE

ACCURATE AND RELIABLE. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND IS MADE WITH REGARD TO THE ACCURACY OF INFORMATION OR THE SUITABILITY OF THE RECOMMENDATIONS CONTAINED HEREIN. IT IS THE USER'S RESPONSIBILITY TO ASSESS THE SAFETY AND TOXICITY OF THIS PRODUCT UNDER THEIR OWN CONDITIONS OF USE AND TO COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS.

REVISION NUMBER: ORIGINAL

MSDS CODE: WC001

**DURO DYNE CORPORATION**  
130 RT. 110  
FARMINGDALE, N.Y. 11735  
EMERGENCY PHONE NO. 800-424-9300  
INFORMATION PHONE NO. 800-899-3876

<b>H.M.I.S.</b>	
<b>HEALTH</b>	0
<b>FLAMMABILITY</b>	0
<b>REACTIVITY</b>	0
<b>PERSONAL PROTECTION</b>	A
These ratings should be used only as part of fully implemented H.M.I.S. program.	

# MATERIAL SAFETY DATA SHEET

DATE OF PREPARATION 6/2000

## SECTION I

**TRADE NAME:** DURO DYNE WATER BASED ADHESIVE  
**MANUFACTURER CODE I.D.:** WSA

## SECTION II - HAZARDOUS INGREDIENTS

**NONE HAZARDOUS**

## SECTION III - HEALTH INFORMATION

### EFFECTS OF SHORT TERM OVEREXPOSURE

**EYE:** No hazard in normal industrial use.

**INHALATION:** No hazard in normal industrial use.

**SKIN:** No hazard in normal industrial use.

**SWALLOWING:** No hazard in normal industrial use.

**EFFECTS OF REPEATED EXPOSURE:** This product should be considered non-hazardous and has no known chronic effects.

**TARGET ORGANS:** N.E

**CARCINOGENICITY:** N.E

### TOXICOLOGY INFORMATION

**ORAL LD%, SPECIES TESTED:** Greater than 5000 mg/kg

**NOTES ON ORAL TOXICITY:** Non toxic

**NOTES ON DERMAL TOXICITY:** Non toxic

**NOTES ON INHALATION TOXICITY:** Product contains less than 0.2% by weight residual vinyl acetate. Vinyl acetate vapors have caused tumors in the respiratory tract of laboratory animals exposed to 600 ppm over a lifetime. 200 ppm caused irritation, and 50 ppm produced no observable effects. There is no evidence of adverse effects on humans exposed to levels at or below the ACGIH TWA of 10 ppm.

**NOTES ON EYE IRRITATION:** May be mildly irritating, as with any foreign material in the eye.

## SECTION IV - FIRST AID AND EMERGENCY PROCEDURES

**SWALLOWING:** None required.

**INHALATION:** Not normally required.

**EYES:** Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

**SKIN:** None required.

## SECTION V - PHYSICAL DATA

**BOILING RANGE:** >212°F

**VAPOR DENSITY:** (AIR = 1) 0.62

**VAPOR PRESSURE(mmHg) :** 17.5 at 20c

**VOC:**<2 g/l

**SPECIFIC GRAVITY (WATER = 1):** 1.180

**SOLUBILITY IN WATER:** Miscible

**PURE MATERIAL OR MIXTURE:** Mixture

**APPEARANCE/PHYSICAL DESCRIPTION:** Gray liquid, typical slight, sweet odor.

**MELTING POINT:** <40°F

**% VOLATILE BY VOLUME:** 44

**EVAPORATION RATE:**1

**WEIGHT LB./GAL.:** 9.0

**WEIGHT LB./GAL:** 9.8

**PH:** AS IS 4.8

**PHYSICAL FORM:** Liquid

## SECTION VI - FIRE AND EXPLOSION DATA

**NFPA FLAMMABILITY CLASSIFICATION:** 0

**EXTINGUISHING MEDIA:** CO2, dry chemical, foam.

**SPECIAL FIRE FIGHTING PROCEDURES:** N.E.

**LOWER EXPLOSIVE LIMIT (%):** N.E.

**FLASHPOINT:** N.E.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** N.E.

**UPPER EXPLOSIVE LIMIT (%):** N.E.

**AUTOIGNITION:** Unknown

## SECTION VII - REACTIVITY DATA

### STABILITY:

Stable

### COMPATIBILITY (MATERIALS TO AVOID)

Materials that react with water.

### HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide, carbon dioxide.

### HAZARDOUS POLYMERIZATION

Will not occur.

## SECTION VIII - ENVIRONMENTAL INFORMATION

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Spills should be taken up with suitable absorbent and placed in containers. Spill areas can be washed with water. Collect wash water for approved disposal. Do not flush to sewer or waterway.

### WASTE DISPOSAL

Waste disposal should be in accordance with existing Federal, State, and Local Environmental Regulations.

### EMPTY CONTAINER WARNINGS

Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

## SECTION IX - PERSONAL PROTECTION INFORMATION

**PERSONAL PROTECTIVE EQUIPMENT REQUIRED:** Normal work conditions; Maintenance/Repair.

**RESPIRATORY PROTECTION:** None required under normal handling conditions.

**VENTILATION:** General.

**HAND PROTECTION:** Gloves are not normally required for foreseeable conditions of use.

**EYE PROTECTION:** Wear safety glasses with side shields.

**CLOTHING REQUIREMENTS:** Protective clothing is normally not necessary for foreseeable conditions of use.

**CHANGE/REMOVAL OF CLOTHING:** None required.

**WASH REQUIREMENTS:** None.

## SECTION X - SPECIAL PRECAUTIONS

### HANDLING AND STORAGE

**STORAGE TEMPERATURE:** 40°F - 100°F

Protect from freezing

## SECTION XI - OTHER INFORMATION

### SHIPPING INFORMATION

**DOT SHIPPING INFORMATION:** N.E.

**DOT HAZARD CLASS:** N.E.

**DOT REPORTABLE QUANTITY:** None

### UNITED NATION INFORMATION

**UN NUMBER:** None

**UN CLASS:** None

### OTHER REGULATORY

**TSCA:** All components are on the TSCA inventory.

**SARA/TITLE III:** This product contains no substances at or above the reporting threshold under Section 313, based on data available.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS 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.**

## MATERIAL SAFETY DATA SHEET

MSDS 0022

 =====  
 Section 1 -- PRODUCT AND COMPANY IDENTIFICATION  
 -----

	HMIS CODES	
PRODUCT NAME	Health	3
Jim PR-1 or Clear PR-2	Flammability	3
	Reactivity	1
PRODUCT CODES	PPI	B
55711, 55713, 55715, 55717, 55719, 55735, 55737, 55739		
CHEMICAL FAMILY		
Organic		
USE		
PVC & CPVC Primer		
MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.	
The RectorSeal Corporation	Chemtrec 24 Hours	
2601 Spenwick Drive	(800) 424-9300	
Houston, Texas 77055 USA		
VALIDATION DATE	TECHNICAL SERVICE TELEPHONE NO.	
September 14, 2006	(800) 231-3345	
REVISION DATE		
September 14, 2006		

 =====  
 Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS  
 -----

% by WT	CAS No.	INGREDIENT	UNITS
70-90	78-93-3	Methyl Ethyl Ketone	
		ACGIH TLV	200 ppm
		OSHA PEL	200 ppm
		STEL	300 ppm
5-15	109-99-9	Tetrahydrofuran	
		ACGIH TLV	50 ppm
		OSHA PEL	200 ppm
		STEL	250 ppm
5-15	108-94-1	Cyclohexanone	
		ACGIH TLV	20 ppm (skin)
		OSHA PEL	50 ppm

 =====  
 Section 3 -- HAZARDS IDENTIFICATION  
 -----

## SUMMARY OF ACUTE HAZARDS

Overexposure may cause coughing, shortness of breath, dizziness, central nervous system depression, intoxication and collapse. It may cause irritation to the respiratory tract and to other mucous membranes.

## ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

## INHALATION

Overexposure may cause coughing, shortness of breath, dizziness, central nervous system depression, intoxication and collapse. It may cause irritation to the respiratory tract and to other mucous membranes.

## EYE CONTACT

Severely irritating. If not removed promptly, will injure eye tissue, which can result in permanent damage.

## SKIN CONTACT

Frequent or prolonged contact may irritate and cause dermatitis. Low order of toxicity.

## INGESTION

Low order of toxicity. Small amounts of the liquid aspirated into the respiratory system during ingestion, or from vomiting, may cause

bronchiopneumonia or pulmonary edema.

SUMMARY OF CHRONIC HAZARDS

Repeated or prolonged exposure may cause signs of central nervous system depression and respiratory irritation. This material has been shown to induce tumors in laboratory animals.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver, or kidneys may have increased susceptibility to excessive exposure.

=====  
Section 4 -- FIRST AID MEASURES  
=====

- If INHALED: If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
- If on SKIN: Immediately flush with large amounts of water; use soap if available. Remove contaminated clothing.
- If in EYES: Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.
- If SWALLOWED: If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

=====  
Section 5 -- FIRE FIGHTING MEASURES  
=====

FLASH POINT	LEL	UEL
17 F (-8 C) SETA CC	2%	11.8%

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: Extremely flammable - very low flash point. Vapors are heavier than air and may travel along ground or to low spots at considerable distance to a source of ignition resulting in potential flashback. Burning liquid may float on water. Heat may build up pressure and rupture closed containers.

=====  
Section 6 -- ACCIDENTAL RELEASE MEASURES  
=====

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove all sources of ignition. Use absorbent materials to prevent footing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and soil. Wear protective clothing and respiratory protection during cleanup.

=====  
Section 7 -- HANDLING AND STORAGE  
=====

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Do not store near heat, sparks, or open flames. If transferring this material to other containers, ground all containers to avoid static electricity buildup and discharge which may ignite flammable vapors.

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 products precautions. Do not reuse empty containers. KEEP OUT OF REACH OF CHILDREN.

=====  
Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION  
=====

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.

VENTILATION - LOCAL EXHAUST: Acceptable

SPECIAL: Explosion-proof equipment.

MECHANICAL (GENERAL): Preferable

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Chemical splash goggles (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

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.

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#### Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

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BOILING POINT:	151 F (66 C) @ 760mm Hg
SPECIFIC GRAVITY (H2O = 1):	0.91
VAPOR PRESSURE (mm Hg):	140 @ 68 F (20 C)
MELTING POINT:	N/A
VAPOR DENSITY (AIR = 1):	2.5
EVAPORATION RATE (ETHYL ACETATE = 1):	6
APPEARANCE/ODOR:	Clear or Purple Liquid/Pungent Odor
SOLUBILITY IN WATER:	Soluble

---

#### Section 10 -- STABILITY AND REACTIVITY

---

STABILITY: Can form potentially explosive peroxides upon long standing in air.

CONDITIONS TO AVOID: Heat, sparks, open flames, and strong oxidizing, acidic and basic conditions.

INCOMPATIBILITY (MATERIALS TO AVOID): Oxidizers, acids and bases.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO<sub>2</sub>, HCl and fragmented hydrocarbons.

HAZARDOUS POLYMERIZATION: Will not occur.

---

#### Section 11 -- TOXICOLOGY INFORMATION

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##### CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen. Tetrahydrofuran - The National Toxicology Program has reported that exposures of mice and rats to THF vapor levels up to 1800 ppm 6hr/day, 5 days/week for their lifetime caused an incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health are unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF.

---

##### TOXICOLOGY DATA

###### Ingredient Name

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###### Methyl Ethyl Ketone

Oral-Rat LD50:2737 mg/kg

Inhalation-Rat LC50:23,500 mg/m<sup>3</sup>/8H

###### Tetrahydrofuran

Oral-Rat LD50:1650 mg/kg

Inhalation-Rat LC50:21,000 ppm/3H

###### Cyclohexanone

Oral-Rat LD50:1535 mg/kg

Inhalation-Rat LC50:8000 ppm/4H

---

Section 12 -- Ecological Information

-----  
ECOLOGICAL DATA

Ingredient Name  
-----

Methyl Ethyl Ketone  
 Food Chain Concentration Potential: None  
 WATERFOWL TOXICITY: N/A  
 BOD: 214%  
 AQUATIC TOXICITY: 5640 mg/l/48 hr/bluegill/TLm/fresh water

Tetrahydrofuran  
 Food Chain Concentration Potential: None  
 WATERFOWL TOXICITY: N/A  
 BOD: N/A  
 AQUATIC TOXICITY: N/A

Cyclohexanone  
 Food Chain Concentration Potential: None  
 WATERFOWL TOXICITY: N/A  
 BOD: N/A  
 AQUATIC TOXICITY: N/A

=====  
Section 13 -- DISPOSAL CONSIDERATIONS

-----  
 Waste Classification: RCRA classified hazardous waste. Dispose of absorbed materials and liquid waste in approved, controlled incineration facility in accordance with all local, state and federal regulations.  
 Disposal Method: Incineration  
 =====

Section 14 -- TRANSPORTATION INFORMATION

-----  
 DOT: Flammable Liquid, N.O.S. (Methyl Ethyl Ketone & Tetrahydrofuran), Class 3, UN 1993, PG II, ERG#127. Quarts and less: Consumer Commodity, ORM-D  
 OCEAN (IMDG): Flammable Liquid, N.O.S. (Methyl Ethyl Ketone & Tetrahydrofuran), Class 3, UN 1993, PG II, IMDG#3230, EMS#3-07  
 AIR (IATA): Flammable Liquid, N.O.S. (Methyl Ethyl Ketone & Tetrahydrofuran), Class 3, UN 1993, PG II, ERG#127.  
 WHMIS (CANADA): Class B-2  
 =====

Section 15 -- REGULATORY INFORMATION

-----  
REGULATORY DATA

Ingredient Name  
-----

Methyl Ethyl Ketone	SARA 313	Yes
	TSCA Inventory	Yes
	CERCLA RQ	5,000 lb.
	RCRA Code	U159
Tetrahydrofuran	SARA 313	No
	TSCA Inventory	Yes
	CERCLA RQ	1,000 lb.
	RCRA Code	U213
Cyclohexanone	SARA 313	No
	TSCA Inventory	Yes
	CERCLA RQ	5,000 lb.
	RCRA Code	U057

=====

## Section 16 -- OTHER INFORMATION

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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

**Section 1 - Chemical Product and Company Identification**

**Product Name** Fiber Glass Wool Insulation  
**CAS#** Not applicable  
**Generic Name** Fiber Glass Wool Product  
**Formula** Not available  
**Chemical Name:** Mixture  
**Hazard Label** FGW-01 or FGW-01-HT or FGW-01-1009 or L1009

**Manufacturer Information**

Johns Manville  
 Performance Materials Division  
 P.O. Box 5108  
 Denver, CO 80127 USA

Telephone: 303-978-2000 8:00AM-5:00PM M-F  
 Internet Address: <http://www.jm.com>  
 Emergency: 800-424-9300 (Chemtrec, In English)

**Trade Names:**

800 Series Spin-Glas® Board Insulations;  
 1000 Series Spin Glas® Board;  
 Blended Blowing Wool;  
 Fabrication Board;  
 Grooved Duct Board;  
 Hullboard (Incombustible);  
 Hullinsul® Fiber Glass Board;  
 Incombustible Microlite®;  
 Insul-SHIELD® Coated Black;  
 Linacoustic® RC;  
 Mat-Faced Micro-Aire® Duct Board;  
 Micro-Flex™ Large Diameter Pipe and Tank Wrap;

Micro-Lok® HP;  
 Micro-Lok® Pipe Insulation;  
 Permacote® Linacoustic® (Types: Standard, HP, and R-300);  
 Precipitator Spin Glas®;  
 R series Microlite® (plain, FSK, PSK, & vinyl faced);  
 Spiracoustic™;  
 Spin Glas® HTB 26 & 23;  
 Spirocoustic Plus™;  
 SuperDuct™ Boards;  
 SuperDuct™ RC Boards;  
 Zeston Hi-Lo Temp® Insulation Inserts.

**Section 2 - Composition / Information on Ingredients**

CAS #	Component	Percent
65997-17-3	Continuous Filament Glass Fiber	1-10**
65997-17-3	Fiber Glass Wool	50-98
Not Available	Non-woven, AP, FSK, PSK, or vinyl facings; or vinyl, acrylic, or latex coatings	0-40
Not Available	Urea extended phenol-melamine formaldehyde binder (cured)	2-18*
Not Available	Urea extended phenol-formaldehyde binder (cured)	2-18*
Not Available	Acrylic Coating (present in Mat-Faced Micro-Aire Duct Board only)	0-10
25038-59-9	Polyester fiber (present in black products only)	1-10
Not Available	Methylene Diurea	<1
25637-99-4	Cyclododecane, hexabromo- (present in Spiracoustic only)	<1
1333-86-4	Carbon black (present in black products only)	<1
1309-64-4	Antimony trioxide	0.1-3***

**Additional Component Information**

\* Binder may be either of these.

\*\* Component scrim facings

\*\*\* Note: Antimony trioxide (fire retardant) may be present in the facings and/or adhesives. Occupational exposure to airborne antimony trioxide is not expected to occur due to product form(s) and intended use(s). Exposure limit is given for reference only.

**Section 3 - Hazards Identification**

**Emergency Overview**

APPEARANCE AND ODOR: Gold, yellow, or black fibrous glass blanket, board, or formed shape with or without facings. No significant odor.

Inhalation of excessive amounts of dust from the product may cause temporary upper respiratory irritation and/or congestion--remove individual to fresh air.

Potential Health Effects

Summary

Breathing dust from this product may cause a scratchy throat, congestion, and slight coughing. Getting dust or fibers on the skin, or in the eyes may cause itching, rash, or redness. Additional health and safety information is provided in Section 11 of this material safety data sheet.

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. In confined or poorly ventilated areas, use air supplied respirators during the first heat-up cycles.

Inhalation

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)

Inhalation (breathing dust, fibers, or vapors), skin, and eye contact.

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 4 - First Aid Measures

First Aid: Inhalation

Remove to fresh air. Drink water to clear throat, and blow nose to remove dust.

First Aid: Skin

Wash gently with soap and warm water to remove dust. Wash hands before eating or using the restroom.

First Aid: Ingestion

Product is not intended to be ingested or eaten. If this product is ingested, irritation of the gastrointestinal (GI) tract may occur, and should be treated symptomatically. Rinse mouth with water to remove fibers, and drink plenty of water to help reduce the irritation. No chronic effects are expected following ingestion.

First Aid: Eyes

Do not rub or scratch your eyes. Dust particles may cause the eye to be scratched. Flush eyes with large amounts of water for 5-15 minutes. If irritation persists, contact a medical professional.

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

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.

**Extinguishing Media**

Carbon dioxide (CO<sub>2</sub>), 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

**Containment Procedures**

Pick up large pieces. Vacuum dusts. If sweeping is necessary, use a dust suppressant such as water. Do not dry sweep dust accumulation or use compressed air for clean-up. These procedures will help to minimize potential exposures.

**Clean-Up Procedures**

Avoid the generation of dusts during clean-up.

### Section 7 - Handling and Storage

**Handling Procedures**

Use protective equipment as described in Section 8 of this material safety data sheet when handling uncontained material.

**Storage Procedures**

Warehouse storage should be in accordance with package directions, if any. Material should be kept dry, and protected from moisture.

### Section 8 - Exposure Controls / Personal Protection

**Exposure Guidelines**

**A: General Product Information**

Glass wool fiber, OSHA voluntary Health and Safety Partnership Program (HSPP): 1 f/cc TWA for fibers longer than 5 µm with a diameter less than 3 µm.

**B: Component Exposure Limits**

**Fiber Glass Wool (65997-17-3)**

ACGIH: 1 fiber/cm<sup>3</sup> TWA (respirable fibers, length >5 µm, aspect ratio ≥3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination); 5 mg/m<sup>3</sup> TWA (inhalable fraction)

**Fiber Glass Wool (65997-17-3)**

ACGIH: 1 fiber/cm<sup>3</sup> TWA (respirable fibers, length >5 µm, aspect ratio ≥3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination)

**Carbon black (present in black products only) (1333-86-4)**

ACGIH: 3.5 mg/m<sup>3</sup> TWA

OSHA: 3.5 mg/m<sup>3</sup> TWA

#### PERSONAL PROTECTIVE EQUIPMENT

**Personal Protective Equipment: Eyes/Face**

Safety goggles are recommended to keep dust, fibers, gases, and vapors 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 prevent skin contact and irritation. Barrier creams may also be used to reduce skin contact and irritation caused by fiber glass.

**Personal Protective Equipment: Respiratory**

A respirator should be used if ventilation is unavailable, or is inadequate for keeping dust and fiber levels below the applicable exposure limits. In those cases, use a NIOSH-certified disposable or reusable particulate respirator with an efficiency rating of N95 or higher (under 42 CFR 84) when working with this product. For exposures up to five times the established exposure limits use a quarter-mask respirator, rated N95 or higher; and for exposures up to ten times the established exposure limits use a half-mask respirator (e.g., MSA's DM-11, Racal's Delta N95, 3M's 8210), rated N95 or higher. Operations such as sawing, blowing, tear out, and spraying may generate airborne fiber concentrations requiring a higher level of respiratory protection. For exposures up to 50 times the established exposure limits use a full-face respirator, rated N99 or higher.

**Ventilation**

In fixed manufacturing settings, local exhaust ventilation should be provided at areas of cutting to remove airborne dust and fibers. General dilution ventilation should be provided as necessary to keep airborne dust and fibers below the applicable exposure limits and guidelines. The need for ventilation systems should be evaluated by a professional industrial hygienist, while the design of specific ventilation systems should be conducted by a professional engineer.

**Personal Protective Equipment: General**

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 warm 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.

<b>Section 9 - Physical &amp; Chemical Properties</b>
---

<p><b>Appearance:</b> Gold, yellow, or black fibrous glass blanket, board, or formed shapes, with or without facings.</p> <p><b>Physical State:</b> Solid</p> <p><b>Vapor Pressure:</b> Not applicable</p> <p><b>Boiling Point:</b> Not applicable</p> <p><b>Solubility (H<sub>2</sub>O):</b> Nil</p> <p><b>Percent Volatile:</b> No data</p>	<p><b>Odor:</b> Mild formaldehyde</p> <p><b>pH:</b> Not applicable</p> <p><b>Vapor Density:</b> Not applicable</p> <p><b>Melting Point:</b> &gt;704°C/1300°F</p> <p><b>Specific Gravity:</b> Variable</p> <p><b>VOC:</b> Not applicable</p>
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<b>Section 10 - Chemical Stability &amp; Reactivity Information</b>
---

**Chemical Stability**

This is a stable material.

**Hazardous Decomposition**

The decomposition products from this material are those that would be expected from any organic (carbon-containing) material, and are mainly derived from pyrolysis, or burning, of the resin. These decomposition products may include carbon monoxide, carbon dioxide, and carbon particles. Formaldehyde gas may also be released during decomposition.

**Hazardous Polymerization**

Will not occur.

<b>Section 11 - Toxicological Information</b>
---

**Acute Toxicity****A: General Product Information**

Dust from this product is a mechanical irritant, which means that it may cause temporary irritation or scratchiness of the throat, and/or itching of the eyes and skin.

Gases released under conditions of high heat and humidity can cause severe eye and respiratory irritation.

**B: Component Analysis - LD50/LC50****Cyclododecane, hexabromo- (present in Spiracoustic only) (25637-99-4)**

Inhalation LC50 Rat: >200 mg/L/1H; Oral LD50 Rat: >10000 mg/kg; Dermal LD50 Rabbit: >8000 mg/kg

**Carbon black (present in black products only) (1333-86-4)**

Oral LD50 Rat: >15400 mg/kg; Dermal LD50 Rabbit: >3 g/kg

**Antimony trioxide (1309-64-4)**

Oral LD50 Rat: >34600 mg/kg

**Carcinogenicity**

**A: General Product Information**

No additional information available.

**B: Component Carcinogenicity**

**Fiber Glass Wool (65997-17-3)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Group 3 - Not Classifiable (IARC Monograph 81 [2002] (listed under Man-made mineral fibres), Monograph 43 [1988])

**Fiber Glass Wool (65997-17-3)**

ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans

NTP: Reasonably Anticipated To Be A Carcinogen (respirable size)

IARC: Group 3 - Not Classifiable (IARC Monograph 81 [2002] (listed under Man-made mineral fibres), Monograph 43 [1988])

**Carbon black (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 posted, Monograph 65 [1996])

**Antimony trioxide (1309-64-4)**

ACGIH: A2 - Suspected Human Carcinogen (production)

IARC: Group 2B - Possibly Carcinogenic to Humans (IARC Monograph 47 [1989])

**Chronic Toxicity**

Exposure to formaldehyde gas (in high temperature applications, treatment, curing, or in geographic areas of high heat and humidity) 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.

Exposure to formaldehyde gas has been associated with the development of nasopharyngeal cancer in laboratory animals and humans. Formaldehyde has been classified as a known human carcinogen, Group 1, by the International Agency for Research on Cancer (IARC). The US Occupational Safety and Health Administration (OSHA) and the US National Toxicology Program (NTP) consider formaldehyde to have carcinogenic potential. OSHA specifically regulates formaldehyde under 29 CFR 1910.1048.

Fiber Glass Wool: 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. This is a reversal of the IARC finding in 1987 of a Group 2B designation (possibly carcinogenic to humans) based on earlier studies in which animals were injected with large quantities of fiber glass. NTP and ACGIH have not yet reviewed the IARC reclassification or the most current fiber glass health research; at this time, both agencies continue to classify glass wool based on the earlier animal injection studies.

**Section 12 - Ecological Information**

**Ecotoxicity**

**A: General Product Information**

No data available for this product.

**B: Component Analysis - Ecotoxicity - Aquatic Toxicity**

**Cyclododecane, hexabromo- (present in Spiracoustic only) (25637-99-4)**

96 Hr LC50 *Lepomis macrochirus*: >100 mg/L [semi-static]

72 Hr EC50 *Skeletonema costatum*: 0.0093-0.37 mg/L

**Carbon black (present in black products only) (1333-86-4)**

24 Hr EC50 *Daphnia magna*: >5600 mg/L

**Antimony trioxide (1309-64-4)**

96 Hr LC50 Pimephales promelas: 833.0 mg/L; 96 Hr LC50 Lepomis macrochirus: 530 mg/L; 96 Hr LC50 Brachydanio rerio: >1000 mg/L [static]  
 72 Hr EC50 Selenastrum capricornutum: 67 mg/L  
 7 Hr EC50 Pseudomonas putida: >3.5 mg/L  
 48 Hr EC50 Daphnia magna: >1000 mg/L

**Section 13 - Disposal Considerations**

**US EPA Waste Number & Descriptions**

**A: General Product Information**

This product is not regulated as a hazardous waste by the U.S. Environmental Protection Agency (EPA) under Resource Conservation and Recovery Act (RCRA) regulations.

**B: Component Waste Numbers**

No EPA Waste Numbers are applicable for this product's components.

**Disposal Instructions**

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

**Section 14 - Transportation Information**

**Shipping Name:** This product is not classified as a hazardous material for transport.

**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).

**Antimony trioxide (1309-64-4)**

CERCLA: 1000 lb final RQ; 454 kg final RQ

**State Regulations**

**A: General Product Information**

Other state regulations may apply. Check individual state requirements.

**B: Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Fiber Glass Wool (*related to Mineral wool fiber)	65997-17-3	Yes <sup>1</sup>	No	Yes <sup>1</sup>	Yes	No	Yes <sup>1</sup>
Carbon black (present in black products only)	1333-86-4	Yes	No	Yes	Yes	Yes	Yes
Antimony trioxide	1309-64-4	Yes	No	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):  
**WARNING!** This product contains a chemical known to the state of California to cause cancer.

Component	CAS #
Fiber Glass Wool (*related to Mineral wool fiber)	65997-17-3
Carbon black (present in black products only)	1333-86-4
Antimony trioxide	1309-64-4

**A: TSCA Status**

This product and its components are listed on the TSCA 8(b) inventory.

None of the components listed in this product are listed on the TSCA Export Notification 12(b) list.

**International Regulations**

**A: General Product Information**

All Johns Manville glass fiber products are considered articles under both U.S. and international product regulations and as such, the products and their ingredients do not require registration or notification on the various country-specific inventories.

**B: Component Analysis - WHMIS IDL**

No components are listed in the WHMIS IDL.

**Section 16 - Other Information**

**Other Information**

Prepared for:  
Johns Manville  
Performance Materials  
P. O. Box 5108  
Denver, CO USA 80217-5108

Prepared by:  
Johns Manville Technical Center  
P.O. Box 625005  
Littleton, CO USA 80162-5005

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Date	MSDS #	Reason
04/28/04	1009-2.0106	Regulatory update. Minor edits.
05/20/04	1009-2.0107	Sect. 1 Removal of discontinued trade names: 824 CAN Spin-Glas®; 830 CAN Spin-Glas®; Acoustic Backing Board; BS 476, EcoTherm™ Industrial Pipe Insulation; Fabricated Duct Board; Permacote Spiracoustic™; Pipe and Tank Insulation; Rigid Round™ (faced); Spiracoustic™; SuperRound®.
08/05/04	1009-2.0108	Sect. 1 Label ID edit. Removal of discontinued trade name, Micro-Flex CTS.
03/22/05	1009-2.0108	Sect. 1 addition of Insul-SHIELD® Coated Black from MSDS 1010. Addition of Blended Blowing Wool. Edits to Sect. 2 for new additions.
10/03/05	1009-2.0110	Section 1, SuperVane was removed. Discontinued product.
11/17/05	1009-2.0111	Regulatory update. Minor edits in Sections 8, 11, and 15. Removed all revision notes prior to 2004. Revision notes are stored in database archives.
01/31/07	1009-2.0112	Addition of Micro-Lok HP to trade names. Updates made throughout SDS for current trade names listed on this SDS. Section 15 TSCA 12b edits. Removed DBDO. These products are articles under TSCA and DBDO does not need to be reported under TSCA 12b.

This is the end of MSDS # 1009

MATERIAL SAFETY DATA SHEET

MSDS 0170

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

		HMIS CODES	
PRODUCT NAME		Health	1
Metacaulk 1100		Flammability	0
		Reactivity	0
PRODUCT CODES		PPI	B
66319, 66317, 66318			
CHEMICAL FAMILY:			
Organic/Inorganic			
USE			
Firestopping Sealant			
MANUFACTURER'S NAME		EMERGENCY TELEPHONE NO.	
The RectorSeal Corporation		Chemtrec 24 Hours	
2601 Spenwick Drive		(800) 424-9300	
Houston, Texas 77055 USA			
DATE OF PREPARATION		TECHNICAL SERVICE TELEPHONE NO.	
July 24, 2002		(800) 231-3345	

Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS
None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.			

Section 3 -- HAZARDS IDENTIFICATION

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 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

-----

FLASH POINT	LEL	UEL
None	N/D	N/D

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 40 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: Acceptable

SPECIAL: N/A

MECHANICAL (GENERAL): Preferable

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Safety glasses (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

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.

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Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 212 F (100 C) @ 760mm Hg

SPECIFIC GRAVITY (H2O = 1): 1.25

VAPOR PRESSURE (mm Hg): 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

=====

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.

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Section 11 -- TOXICOLOGY INFORMATION

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## CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

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## TOXICOLOGY DATA

Ingredient Name

None

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Section 12 -- Ecological Information

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## ECOLOGICAL DATA

Ingredient Name

None

Food Chain Concentration Potential	N/A
WATERFOWL TOXICITY	N/A
BOD	N/A
AQUATIC TOXICITY	N/A

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Section 13 -- DISPOSAL CONSIDERATIONS

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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.

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Section 14 -- TRANSPORTATION INFORMATION

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DOT:	Non-Regulated
OCEAN (IMDG):	Non-Regulated
AIR (IATA):	Non-Regulated
WHMIS (CANADA):	Non-Regulated

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Section 15 -- REGULATORY INFORMATION

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## REGULATORY DATA

Ingredient Name

None

SARA 313	N/A
TSCA Inventory	All components listed
CERCLA RQ	N/A
RCRA Code	N/A

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Section 16 -- OTHER INFORMATION

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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

ITEM: 4NA76 - Oil Multi Purpose 4 Oz

PICK\_REQ: 1080137057

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: B1129

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - B1129

Associated Grainger Item: 4NA76 - Oil Multi Purpose 4 Oz

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ZOOM SPOUT OILER

REVISION #: 2.3

DATE PREPARED: MAY 22, 1991

DATE REVISED: APRIL 10, 2007

MANUFACTURER: LA-CO INDUSTRIES, INC./MARKAL CO. 1201 PRATT BLVD. ELK GROVE VILLAGE, IL, 60007-5746

INFORMATION TELEPHONE: 847-956-7600

EMERGENCY TELEPHONE:

CALL CHEMTRBC: 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: GENERAL PURPOSE LUBRICATING OIL

SUPPLIER/IMPORTER:

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

Table with 3 columns: INGREDIENT, CAS NO., %

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: HARMFUL BY INHALATION AND IF SWALLOWED. MAY CAUSE LUNG DAMAGE IF SWALLOWED. IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN. KEEP OUT OF REACH OF CHILDREN. KEEP AWAY FROM FOOD AND DRINK. DO NOT BREATHE VAPOR OR SPRAY. AVOID CONTACT WITH SKIN AND EYES. IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. DO NOT EMIT INTO DRAINS. WEAR SUITABLE PROTECTIVE CLOTHING. IF SWALLOWED, DO NOT INDUCE VOMITING; SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER, LABEL OR SAFETY DATA SHEET.

POTENTIAL HEALTH EFFECTS:

PRIMARY EXPOSURE ROUTES: EYES, SKIN, INGESTION, INHALATION

ACUTE EFFECTS:

EYES: MAY CAUSE EYE IRRITATION. DIRECT CONTACT MAY CAUSE BURNING, TEARING AND REDNESS.

SKIN: MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY CAUSE REDNESS, BURNING AND DERMATITIS.

INGESTION: MAY CAUSE IRRITATION OF THE DIGESTIVE TRACT.

INHALATION: EXPOSURE TO MISTS, OR PROLONGED OR REPEATED EXPOSURE TO FUMES OR VAPORS THAT MAY BE GENERATED WHEN THIS MATERIAL IS HEATED, MAY CAUSE IRRITATION OF NOSE AND THROAT.

CHRONIC EFFECTS:

EYES: NOT DETERMINED.

SKIN: NOT DETERMINED.

INGESTION: NOT DETERMINED.

INHALATION: NOT DETERMINED.

MUTAGENICITY: NOT APPLICABLE.

TARGET ORGAN EFFECTS: NOT APPLICABLE.

MEDICAL CONDITIONS AGGRAVATED BY LONG-TERM EXPOSURE: NOT DETERMINED.

OTHER INFORMATION: NOT APPLICABLE.

SECTION 4 FIRST AID

EYE CONTACT: FOR DIRECT CONTACT, FLUSH EYES WITH PLENTY OF CLEAN WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN.

SKIN CONTACT:

DO NOT USE GASOLINE, THINNERS OR SOLVENTS TO REMOVE PRODUCT FROM SKIN. WIPE PRODUCT FROM SKIN WITH ABSORBENT CLOTH OR PAPER AND REMOVE CONTAMINATED CLOTHING. CLEANSE AFFECTED AREAS THOROUGHLY BY WASHING WITH SOAP AND WATER AND, IF NECESSARY, A WATERLESS SKIN CLEANER. IF IRRITATION OR REDNESS DEVELOPS AND PERSISTS, SEEK MEDICAL ATTENTION.

INGESTION:

IF VICTIM IS CONSCIOUS AND ALERT, GIVE 2 TO 3 CUPS OF MILK OR WATER TO DRINK. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL ATTENTION.

TO PHYSICIAN:

EMESIS OR LAVAGE IS NOT RECOMMENDED FOR INGESTION OF MINUTE QUANTITIES OR TASTES OF MOST HYDROCARBONS. MEDICAL OPINION IS DIVIDED FOR LARGER INGESTION. EMESIS OR LAVAGE HAS BEEN RECOMMENDED FOR THOSE PETROLEUM PRODUCTS WHICH HAVE A HIGH ORAL TOXICITY. GASTRIC LAVAGE WITH A CUFFED ENDOTRACHEAL TUBE IS RECOMMENDED BY SOME PHYSICIANS TO PREVENT ASPIRATION.

INHALATION:

IF IRRITATION OF NOSE OR THROAT DEVELOPS, MOVE AWAY FROM SOURCE OF EXPOSURE AND INTO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION. IF VICTIM IS NOT BREATHING OR IF BREATHING DIFFICULTIES DEVELOP, ARTIFICIAL RESPIRATION OR OXYGEN SHOULD BE ADMINISTERED BY QUALIFIED PERSONNEL. SEEK IMMEDIATE MEDICAL ATTENTION.

OTHER INFORMATION: NONE.

SECTION 5 FIRE FIGHTING MEASURES

FLASH POINT (METHOD): 388 DEG. F / 198 DEG. C (COC)

AUTOIGNITION TEMPERATURE: NOT DETERMINED.

LEL: NOT DETERMINED. UEL: NOT DETERMINED.

FLAMMABILITY CLASSIFICATION: NFPA CLASS IIIB

EXTINGUISHING MEDIA:

DRY CHEMICAL, CARBON DIOXIDE (CO2), WATER SPRAY, FOAM, SAND OR EARTH. WATER AND FOAM MAY CAUSE FROTHING.

HAZARDOUS COMBUSTION PRODUCTS:

CARBON MONOXIDE, CARBON DIOXIDE, SMALLER AMOUNTS OF OXIDES OF SULFUR AND NITROGEN.

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 BLANKET GEAR) AND RESPIRATORY PROTECTION (SCBA). WATER SPRAY MAY BE USEFUL IN MINIMIZING VAPORS AND COOLING CONTAINERS EXPOSED TO HEAT AND FLAME. AVOID SPREADING BURNING LIQUID WITH WATER USED FOR COOLING PURPOSES. MOVE UNDAMAGED CONTAINERS FROM FIRE AREA IF POSSIBLE WITHOUT RISK.

SECTION 6 ACCIDENTAL RELEASE MEASURES

USE RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (SEE SECTION 8). COLLECT LEAKING LIQUID IN SEALABLE CONTAINERS. ABSORB SPILLED LIQUID IN SAND OR INERT ABSORBENT. CONTACT FIRE AUTHORITIES AND APPROPRIATE REGULATORY AGENCIES. IF SPILL OF ANY AMOUNT IS MADE INTO OR UPON U.S. NAVIGABLE WATERS, THE CONTIGUOUS ZONE, OR ADJOINING SHORELINES, NOTIFY COAST GUARD NATIONAL RESPONSE CENTER (800-424-8602).

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). STORE IN A COOL, DRY AREA.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE/FACE PROTECTION:

USE APPROVED EYE PROTECTION TO SAFEGUARD AGAINST POTENTIAL EYE CONTACT.

SKIN/HAND PROTECTION: USE IMPERMEABLE GLOVES, SUCH AS RUBBER GLOVES.

RESPIRATORY PROTECTION:

IF AIRBORNE CONCENTRATION EXCEEDS RECOMMENDED EXPOSURE LIMITS, A SUITABLE FILTER-TYPE RESPIRATOR SHOULD BE WORN.

OTHER EQUIPMENT: EYE WASH AND SAFETY SHOWER.

ENGINEERING CONTROLS:

NORMAL ROOM VENTILATION. LOCAL EXHAUST IN CONFINED AREAS.

ADMINISTRATIVE CONTROLS:

USERS OF THIS PRODUCT MUST BE PROPERLY TRAINED AND QUALIFIED IN ITS USE.

OTHER INFORMATION:

IT IS SUGGESTED THAT A SOURCE OF CLEAN WATER BE AVAILABLE IN THE WORK AREA FOR FLUSHING EYES AND SKIN. BARRIER CREAMS THAT ARE SPECIFIC FOR OIL-BASED MATERIALS ARE RECOMMENDED WHEN GLOVES ARE IMPRACTICAL.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: CLEAR YELLOW LIQUID.

ODOR: OIL-LIKE.

ODOR THRESHOLD (PPM): NOT DETERMINED.

SPECIFIC GRAVITY (H2O = 1): 0.88

SOLUBILITY:  
WATER: INSOLUBLE.  
FAT: SOLUBLE.

COEFFICIENT OF WATER/OIL SOLUBILITY: <<1

PARTITION COEFFICIENT (n-OCTANOL/WATER): >>1

pH: NOT APPLICABLE.

MELTING POINT: NOT DETERMINED.

BOILING POINT: ABOVE 600 DEG. F / 316 DEG. C

VAPOR PRESSURE (MMHg AT 20 DEG. C): NOT DETERMINED.

VAPOR DENSITY (AIR = 1): >1

EVAPORATION RATE (n-BuAc=1): <1

V.O.C.: 0% (W/W), 0% (V/V), 0 LBS./GAL. (U.S.), 0 KG/L

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.

SECTION 10 STABILITY AND REACTIVITY

CHEMICAL STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: NONE KNOWN.

CHEMICALS TO AVOID: STRONG OXIDIZERS.

HAZARDOUS DECOMPOSITION PRODUCTS (NON-THERMAL): NOT DETERMINED.

SECTION 11 TOXICOLOGICAL INFORMATION

SENSITIZATION TO PRODUCT: NOT APPLICABLE.

IRRITANCY OF PRODUCT: EYE AND SKIN CONTACT, INHALATION, INGESTION.

REPRODUCTIVE TOXICITY: 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

BIODEGRADABILITY: NOT DETERMINED.

ACCUMULATION: NOT DETERMINED.

ECOTOXICITY: NOT DETERMINED.

OTHER ADVERSE EFFECTS: NOT DETERMINED.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

SECTION 14 TRANSPORT INFORMATION

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.  
ATA: NOT REGULATED.  
ECAD: NOT REGULATED.  
IMO: NOT REGULATED.

AUSTRALIAN CODE FOR THE TRANSPORT OF DANGEROUS GOODS:

DANGEROUS GOODS CLASS AND SUBSIDIARY RISK: NOT DETERMINED.

SECTION 15 REGULATORY INFORMATION

- 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 CONSIDERED TO BE HAZARDOUS AS DEFINED BY THE U.S. OSHA HCS (29 CFR 1910.1200).

EPA SARA SEC. 311/312 HAZARD CATEGORIES: IMMEDIATE (ACUTE) HEALTH HAZARD.

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 1  
FLAMMABILITY 1  
REACTIVITY 0

NFPA RATING:  
HEALTH 0  
FLAMMABILITY 1  
REACTIVITY 0

CANADA:

WHMIS STATUS:  
THIS PRODUCT IS CONSIDERED TO BE HAZARDOUS AS DEFINED BY CANADIAN WHMIS CONTROLLED PRODUCTS REGULATIONS.

WHMIS RATING: D1-B

WHMIS RISK PHRASES:  
HARMFUL BY INHALATION AND IF SWALLOWED. MAY CAUSE LUNG DAMAGE IF SWALLOWED. IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

WHMIS PRECAUTIONARY STATEMENTS:  
KEEP OUT OF REACH OF CHILDREN. KEEP AWAY FROM FOOD AND DRINK. DO NOT BREATHE VAPOR OR SPRAY. AVOID CONTACT WITH SKIN AND EYES. IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. DO NOT EMPTY INTO DRAINS. WEAR SUITABLE PROTECTIVE CLOTHING. IF SWALLOWED, DO NOT INDUCE VOMITING. SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER, LABEL OR SAFETY DATA SHEET.

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):  
HARMFUL (Xn)  
IRRITANT (Xi)

RISK (R) PHRASES:  
HARMFUL BY INHALATION AND IF SWALLOWED (R20/22).  
HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED (R65).  
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN (R36/37/38).

SAFETY (S) PHRASES:  
KEEP OUT OF REACH OF CHILDREN (S2)  
KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS (S13)

DO NOT BREATHE VAPOR OR SPRAY (S23)  
AVOID CONTACT WITH SKIN AND EYES (S24/25)

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE (S26)

DO NOT EMPTY INTO DRAINS (S29)  
WEAR SUITABLE PROTECTIVE CLOTHING (S36)

IF SWALLOWED, SEEK MEDICAL ADVICE AND SHOW THIS CONTAINER, LABEL OR SAFETY DATA SHEET (S46)

IF SWALLOWED, DO NOT INDUCE VOMITING:  
SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER, LABEL OR SAFETY DATA SHEET (S62).

AUSTRALIA:

WORKSAFE AUSTRALIA STATUS:  
THIS PRODUCT IS CLASSIFIED AS HAZARDOUS ACCORDING TO CRITERIA OF WORKSAFE AUSTRALIA.

HAZCHEM CODE: NOT DETERMINED.

POISONS SCHEDULE NUMBER: NOT DETERMINED.

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 NMRCHS. 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.

# MATERIAL SAFETY DATA SHEET

ISSUE DATE: 1/7/98

REVISED DATE: 8/08/06

Supersedes: Any previous M.S.D.S. on this product

EMERGENCY TELEPHONE NUMBER: CHEM-TEL, INC 1-800-255-3924

## I. IDENTIFICATION

**PRODUCT NAME:** Proseal/Fiberseal

**PRODUCT CLASS:** Water Based Duct Sealant (Caulking)

DUCTMATE INDUSTRIES, INC.

1502 Industrial Drive  
Monongahela, PA 15063

## II. HAZARDOUS INGREDIENTS

### REPORTING REQUIREMENTS:

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class.....None

EPA SARA Title III Section 312 (40CFR370) hazard class.....None

EPA SARA Title III Section 313 (40CFR372) toxic chemicals above "de minimis" level are.....None

CALIFORNIA PROP 65 substances listed by the State of California under the "Safe Drinking Water and Toxic Enforcement Act of 1986".  
No such substances are present in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

## III. PHYSICAL DATA

**APPEARANCE:** Gray caulking

**SOLUBILITY IN WATER:** Dilutable

**BOILING POINT:** 100°C / 212°F

**WEIGHT PER GALLON:** 11.2 lbs/gallon

**VOLATILE BY WEIGHT:** 34%± 2% (Water)

**VAPOR DENSITY:** Heavier than Air.

**EVAPORATION RATE:** (BAC = 1) Less than 1

**ODOR:** Mild

**PHYSICAL STATE:** Paste

**Ph:** 8 to 9.5

**VOC CONTENT:** 0

## IV. HEALTH HAZARD DATA

**CAUTION:** May cause discomfort in eyes. Prolonged or repeated contact with skin may cause dryness.

**IN EYES:** Flush with water for 15 minutes.

**ON SKIN:** Wash with soap and water.

**INGESTED:** Seek medical attention.

**INHALATION:** No effects expected. If difficulty breathing occurs remove to fresh air and consult physician.

## V. EMERGENCY AND FIRST AID

**FLAMMABILITY CLASS (OSHA/NFPA):** None.

**FLASHPOINT:** >212°F PM Closed cup

**EXTINGUISHING MEDIA:** Water or dry type extinguisher.

**UNUSUAL FIRE HAZARD:** Containers may burst when exposed to extreme heat.

**FIRE FIGHTING PROCEDURES:** Firemen should wear equipment to protect against noxious fumes. Self contained breathing apparatus may be needed

**PRODUCT OF COMBUSTION:** May yield Carbon Monoxide and/or Carbon Dioxide.

## VI. SPILL OR LEAK PROCEDURES

Collect spilled material in salvage container. Small amounts may be absorbed into appropriate absorbents. Prevent spill from entering sewers, drains, and waterways.

Dispose of product in accordance with applicable local, state, and federal regulations.

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## VII. SPECIAL PROTECTION

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**VENTILATION:** Provide sufficient ventilation to maintain constant fresh air in workplace.

**EYE PROTECTION:** Use safety goggles when splash potential exists.

**HAND PROTECTION:** Protective impervious gloves are recommended.

**OTHER:** A clean source of water should be available for washing eyes and skin.

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## VIII. REGULATORY INFORMATION

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Non-flammable, as a Latex compound

U.S.A.: Regulation by the following: DOT, IMO, ICAD/IATA: None

Canada: Regulation by the following: DSL, WHMIS: None

European: EEC SYMBOL: None

EEC Classification, Packaging and Labeling of Dangerous Substances: None

TSCA 12(b) Export Notification Requirement: All components of this product are either listed on the U.S. Toxic Substances Control Act (TSCA) inventory of chemicals or are otherwise compliant with TSCA regulations.

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## IX. REACTIVITY DATA

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**STABILITY:** Stable under normal conditions of handling and use.

**INCOMPATIBILITY:** Products may react violently with products that react with water.

**HAZARDOUS DECOMPOSITION:** Fumes produced when heated to decomposition may include: oxides of carbon, nitrogen, and sulfur along with hydrocarbon residues.

**HAZARDOUS POLYMERIZATION:** Will not occur.

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## X. SPECIAL PRECAUTIONS

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**HANDLING AND STORAGE:** Store in tightly closed containers at temperatures 45 F to 90 F. . Guard against inhalation of excess vapors, ingestion, and contact with skin and eyes. Change soiled workclothes frequently. Clean hands after handling. Precautions also apply to emptied containers. Keep containers away from extreme heat and cold. Prevent from freezing, but if product is allowed to freeze, thaw completely before use.

**DISPOSAL:** Allow residual material in pails to cure before disposal. Most areas allow for the disposal of cured material with regular trash. Check local regulations before disposing of any product.

This information is taken from sources or based upon data believed to be reliable; however, DUCTMATE INDUSTRIES, INC. makes no warranty as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may not be required under particular conditions. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist, as all materials may present unknown health hazards.

# ITEM: 2MDV4 - Run Capacitor 5 MFD 370 VAC Oval

PICK REQ: 1080137057

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: B3015

**This MSDS should be attached or kept with the respective product with which it is associated.**

MATERIAL SAFETY DATA SHEET - B3015

Associated Grainger Item: 2MDV4 - Run Capacitor 5 MFD 370 VAC Oval

2MDV3, 2MDV4, 2MDV5, 2MDV6, 2MDV7, 2MDV8, 2MDV9, 2MDX1, 2MDX2, 2MDX3, 2MDX4  
 2MDX5, 2MDX6, 2MDX7, 2MDX8, 2MDX9, 2MDY1, 2MDY2, 2MDY3, 2MDY4, 2MDY5, 2MDY6  
 2MDY7, 2MDY8, 2MDY9, 2MDZ1, 2MDZ2, 2MDZ3, 2MDZ4, 2MDZ5, 2MDZ6, 2MDZ7, 2MDZ8  
 2MDZ9, 2MEAL, 2MEAZ, 2MEA3, 2MEA4, 2MEAS, 2MEAG, 2MEA7, 2MEA8, 2MEA9, 2MECI  
 2MEC2, 2MEC3, 2MEC4, 2MEC5, 2MEC6, 2MEC7, 2MEC8, 2MEC9, 2MEF1, 2MEF2, 2MEF3, 2MEF4, 2MEF5  
 2MEF6, 2MEF7, 2MEF8, 2MEF9, 2MEG1, 2MEG2, 2MEG3, 2MEG4, 2MEG5, 2MEG6, 2MEG7  
 2MEG8, 2MEG9, 2MEH1, 2MEH2, 2MEH3, 2MEH4, 2MEH5, 2MEH6, 2MEH7, 2MEH8, 2MEH9  
 2MEJ1, 2MEJ2, 2MEJ3, 2MEJ4, 2MEJ5, 2MEJ6, 2MEJ7, 2MEJ8, 2MEJ9, 2MEK1, 2MEK2  
 2MEK3, 2MEK4, 2MEK5, 2MEK6, 2MEK7, 2MEK8, 2MEK9, 2MEL1, 2MEU7, 2MEU8

PONY

REPORT NO.: SZ070929-039

DATE: 10.10.2007

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: RUN CAPACITOR (CBB65A)

TRADE NAME: CAPACITOR

SAMPLE CODE: CBB65A

MANUFACTURE: WENLING ZEGUO DALI ELECTRONIC UNIT FACTORY

ADDRESS:  
 DANYA INDUSTRIAL ZONE  
 ZEGUO, WENLING CITY, ZHEJIANG  
 CHINA

POST CODE: 317523

TEL: 0576-86448268

EMERGENCY TELEPHONE: 0576-86448268

EMAIL: DALIGHUI-ZHONG.NET

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENT

COMPONENT	CHEMICAL NAME	FORMULA	CAS NO.
ALUMINUM HULL	ALUMINUM	Al	7429-90-5
CUPULE OF INSERT	POLYPROPYLENE	(C3H6)x	9003-07-0
INSERT	COPPER WITH TIN	Cu Sn	7440-50-8 7440-31-5
FILLER	MICROCRYSTALLINE WAX		63231-60-7
CORE:			
POLYPROPYLENE	POLYPROPYLENE	(C3H6)x	9003-07-0
ZINC	ZINC	Zn	7440-66-6
ALUMINUM	ALUMINUM	Al	7429-90-5
MANDRIL	POLYPROPYLENE	(C3H6)x	9003-07-0

SECTION 3 - HAZARDS IDENTIFICATION

NO HARM IN NORMAL USE.

CAUTION!  
 PUT RUN CAPACITY INTO FIRE AND MOLTEN MATERIAL WILL PRODUCE THERMAL BURNS.  
 MAY CAUSE MECHANICAL IRRITATION. INHALATION OF DUST MAY CAUSE MECHANICAL  
 IRRITATION.

SECTION 4 - FIRST AID MEASURES

EYES:  
 IF MOLTEN MATERIAL CONTACTS THE EYE, IMMEDIATELY FLUSH WITH PLENTY OF WATER  
 FOR AT LEAST 15 MINUTES. IF EASY TO DO, REMOVE CONTACT LENSES. GET MEDICAL  
 AID.

SKIN:  
 IF BURNED BY CONTACT WITH MOLTEN MATERIAL, COOL AS QUICKLY AS POSSIBLE.  
 DO NOT PEEL MATERIAL FROM SKIN. GET MEDICAL AID.

INHALATION:  
 IF SYMPTOMATIC, MOVE TO FRESH AIR. GET MEDICAL ATTENTION IF SYMPTOMS  
 PERSIST.

INGESTION: SEEK MEDICAL ADVICE.

NOTE TO PHYSICIAN:  
 BURNS SHOULD BE TREATED AS THERMAL BURNS. THE MATERIAL WILL COME OFF AS  
 HEALING OCCURS, THEREFORE, IMMEDIATE REMOVAL FROM THE SKIN IS NOT  
 NECESSARY.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: N/A.

AUTO-IGNITION TEMPERATURE: N/A.

EXTINGUISHING MEDIA: USE WATER SPRAY, CARBON DIOXIDE OR DRY CHEMICAL.

FIREFIGHTING:

WEAR SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:  
 WEAR GLOVES TO PICK UP BROKEN, DAMAGED CAPACITOR, TRANSFER TO WASTERBASKET  
 FOR DISPOSAL.

WASTE DISPOSAL METHOD:  
 DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL RULES AND  
 REGULATIONS.

PRECAUTIONS-HANDLING/STORING: AVOID PHYSICAL DAMAGE. HANDLE WITH CARE.

SECTION 7 - HANDLING AND STORAGE

THE CAPACITOR SHOULD NOT BE OPENED, DESTROYED OR INCINERATE.

HANDLING:  
 AVOID CONTACT WITH MOLTEN MATERIAL. KEEP AWAY FROM FIRE. AVOID MECHANICAL  
 OR ELECTRICAL ABUSE.

STORAGE:  
 STORAGE PREFERABLY IN COOL, DRY AND VENTILATED AREA, WHICH IS SUBJECT TO  
 LITTLE TEMPERATURE CHANGE. STORAGE AT HIGH TEMPERATURES SHOULD BE AVOIDED.  
 DO NOT PLACE THE CAPACITOR NEAR HEATING EQUIPMENT, NOR EXPOSE TO DIRECT  
 SUNLIGHT FOR LONG PERIODS.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

NO NEED IN NORMAL USE.

IF AT LONG INDUSTRIAL CONDITION OR ON FIRE, REFERENCE AS FOLLOWS

ENGINEERING CONTROLS:  
 IN A COOL, WELL-VENTILATED AREA. USE AN APPROVED PARTICULATE RESPIRATOR IN  
 DUSTY OR MISTY ATMOSPHERES.

PERSONAL PROTECTION: SAFETY GLASSES, GLOVE, AND LAB COAT.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

pH: N/A.

VAPOR PRESSURE: N/A.

VAPOR DENSITY: N/A.

EVAPCRATION RATE: N/A.

SOLUBILITY: N/A.

APPEARANCE CHARACTERS: SILVERY WHITE CYLINDRICAL SOLID.

CHEMICAL USES: REFRIGERATION EQUIPMENT OF AIR CONDITION.

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: STABLE

CONDITIONS TO AVOID: HEATING, MECHANICAL ABUSE AND ELECTRICAL ABUSE.

INCOMPATIBILITIES: REACT WITH FIRE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION 11 - TOXICOLOGICAL INFORMATION

NO INFORMATION AVAILABLE.

SECTION 12 - ECOLOGICAL INFORMATION

NO INFORMATION AVAILABLE.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:  
 TREATMENT, OR DISPOSAL MAY BE SUBJECT TO NATIONAL, STATE, OR LOCAL LAWS.

SECTION 14 - TRANSPORT INFORMATION

SHIPPING NAME: NOT REGULATED.

HAZARD CLASS: N/A.

PACKAGING INFORMATION: BOX, TRAY.

SECTION 15 - REGULATORY INFORMATION

LAW INFORMATION: IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS.

SECTION 16 - ADDITIONAL INFORMATION

THE ABOVE INFORMATION IS BASED ON THE DATA OF WHICH WE ARE AWARE AND IS  
 BELIEVED TO BE CORRECT AS OF THE DATA HEREOF. SINCE THIS INFORMATION MAY  
 BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL AND WITH WHICH MAY BE  
 UNFAMILIAR AND SINCE DATA MADE AVAILABLE SUBSEQUENT TO THE DATA HEREOF  
 MAY SUGGEST MODIFICATIONS OF THE INFORMATION, WE DO NOT ASSUME ANY  
 RESPONSIBILITY FOR THE RESULTS OF ITS USE. THIS INFORMATION IS FURNISHED  
 UPON CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS OWN

DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR HIS PARTICULAR PURPOSE.

MSDS CREATION DATE: OCTOBER 10, 2007

ITEM: 2MDV6 - Run Capacitor 7.5 MFD 370 VAC Oval

PICK REQ: 1080137057

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: B3015

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - B3015

Associated Grainger Item: 2MDV6 - Run Capacitor 7.5 MFD 370 VAC Oval

2MDW3, 2MDW4, 2MDW5, 2MDW6, 2MDW7, 2MDW8, 2MDW9, 2MDX1, 2MDX2, 2MDX3, 2MDX4, 2MDX5, 2MDX6, 2MDX7, 2MDX8, 2MDX9, 2MDY1, 2MDY2, 2MDY3, 2MDY4, 2MDY5, 2MDY6, 2MDY7, 2MDY8, 2MDY9, 2MDZ1, 2MDZ2, 2MDZ3, 2MDZ4, 2MDZ5, 2MDZ6, 2MDZ7, 2MDZ8, 2MDZ9, 2MEA1, 2MEA2, 2MEA3, 2MEA4, 2MEA5, 2MEA6, 2MEA7, 2MEA8, 2MEA9, 2MEC1, 2MEC2, 2MEC3, 2MEC4, 2MEC5, 2MEC6, 2MEC7, 2MEC8, 2MEC9, 2MEE1, 2MEE2, 2MEE3, 2MEE4, 2MEE5, 2MEE6, 2MEE7, 2MEE8, 2MEE9, 2MEF1, 2MEF2, 2MEF3, 2MEF4, 2MEF5, 2MEF6, 2MEF7, 2MEF8, 2MEF9, 2MEG1, 2MEG2, 2MEG3, 2MEG4, 2MEG5, 2MEG6, 2MEG7, 2MEG8, 2MEG9, 2MEH1, 2MEH2, 2MEH3, 2MEH4, 2MEH5, 2MEH6, 2MEH7, 2MEH8, 2MEH9, 2MEJ1, 2MEJ2, 2MEJ3, 2MEJ4, 2MEJ5, 2MEJ6, 2MEJ7, 2MEJ8, 2MEJ9, 2MEK1, 2MEK2, 2MEK3, 2MEK4, 2MEK5, 2MEK6, 2MEK7, 2MEK8, 2MEK9, 2MEL1, 2MEU7, 2MEU8

PONY

REPORT NO.: SZ070929-039

DATE: 10.10.2007

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: RUN CAPACITOR (CBB65A)

TRADE NAME: CAPACITOR

SAMPLE CODE: CBB65A

MANUFACTURE: WENLING ZEGUO DALI ELECTRONIC UNIT FACTORY

ADDRESS: DANYA INDUSTRIAL ZONE ZEGUO, WENLING CITY, ZHEJIANG CHINA

POST CODE: 317523

TEL: 0576-86448268

EMERGENCY TELEPHONE: 0576-86448268

EMAIL: DALIGHUI-ZHONG.NET

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENT

Table with 4 columns: COMPONENT, CHEMICAL NAME, FORMULA, CAS NO. Rows include ALUMINUM HULL, TUPLE OF INSERT, INSERT, FILLER, CORE (POLYPROPYLENE, ZINC, ALUMINUM), and HANDRIL.

SECTION 3 - HAZARDS IDENTIFICATION

NO HARM IN NORMAL USE.

CAUTION: PUT RUN CAPACITY INTO FIRE AND MOLTEN MATERIAL WILL PRODUCE THERMAL BURNS. MAY CAUSE MECHANICAL IRRITATION. INHALATION OF DUST MAY CAUSE MECHANICAL IRRITATION.

SECTION 4 - FIRST AID MEASURES

EYES: IF MOLTEN MATERIAL CONTACTS THE EYE, IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. IF EASY TO DO, REMOVE CONTACT LENSES. GET MEDICAL AID.

SKIN: IF BURNED BY CONTACT WITH MOLTEN MATERIAL, COOL AS QUICKLY AS POSSIBLE. DO NOT PEEL MATERIAL FROM SKIN. GET MEDICAL AID.

INHALATION: IF SYMPTOMATIC, MOVE TO FRESH AIR. GET MEDICAL ATTENTION IF SYMPTOMS PERSIST.

INGESTION: SEEK MEDICAL ADVICE.

NOTE TO PHYSICIAN: BURNS SHOULD BE TREATED AS THERMAL BURNS. THE MATERIAL WILL COME OFF AS HEALING OCCURS, THEREFORE, IMMEDIATE REMOVAL FROM THE SKIN IS NOT NECESSARY.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: N/A.

AUTO-IGNITION TEMPERATURE: N/A.

EXTINGUISHING MEDIA: USE WATER SPRAY, CARBON DIOXIDE OR DRY CHEMICAL.

REFIGHTING:

WEAR SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: WEAR GLOVES TO PICK UP BROKEN, DAMAGED CAPACITOR, TRANSFER TO WASTEBASKET FOR DISPOSAL.

WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL RULES AND REGULATIONS.

PRECAUTIONS-HANDLING/STORING: AVOID PHYSICAL DAMAGE. HANDLE WITH CARE.

SECTION 7 - HANDLING AND STORAGE

THE CAPACITOR SHOULD NOT BE OPENED, DESTROYED OR INCINERATE.

HANDLING: AVOID CONTACT WITH MOLTEN MATERIAL. KEEP AWAY FROM FIRE. AVOID MECHANICAL OR ELECTRICAL ABUSE.

STORAGE: STORAGE PREFERABLY IN COOL, DRY AND VENTILATED AREA, WHICH IS SUBJECT TO LITTLE TEMPERATURE CHANGE. STORAGE AT HIGH TEMPERATURES SHOULD BE AVOIDED. DO NOT PLACE THE CAPACITOR NEAR HEATING EQUIPMENT, NOR EXPOSE TO DIRECT SUNLIGHT FOR LONG PERIODS.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

NO NEED IN NORMAL USE.

IF AT LONG INDUSTRIAL CONDITION OR ON FIRE, REFERENCE AS FOLLOWS

ENGINEERING CONTROLS: IN A COOL, WELL-VENTILATED AREA. USE AN APPROVED PARTICULATE RESPIRATOR IN DUSTY OR MISTY ATMOSPHERES.

PERSONAL PROTECTION: SAFETY GLASSES, GLOVE, AND LAB COAT.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

pH: N/A.

VAPOR PRESSURE: N/A.

VAPOR DENSITY: N/A.

EVAPORATION RATE: N/A.

SOLUBILITY: N/A.

APPEARANCE CHARACTERS: SILVERY WHITE CYLINDRICAL SOLID.

CHEMICAL USES: REFRIGERATION EQUIPMENT OF AIR CONDITION.

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: STABLE

CONDITIONS TO AVOID: HEATING, MECHANICAL ABUSE AND ELECTRICAL ABUSE.

INCOMPATIBILITIES: REACT WITH FIRE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION 11 - TOXICOLOGICAL INFORMATION

NO INFORMATION AVAILABLE.

SECTION 12 - ECOLOGICAL INFORMATION

NO INFORMATION AVAILABLE.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: TREATMENT, OR DISPOSAL MAY BE SUBJECT TO NATIONAL, STATE, OR LOCAL LAWS.

SECTION 14 - TRANSPORT INFORMATION

SHIPPING NAME: NOT REGULATED.

HAZARD CLASS: N/A.

PACKAGING INFORMATION: BOX, TRAY.

SECTION 15 - REGULATORY INFORMATION

LAW INFORMATION: IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS.

SECTION 16 - ADDITIONAL INFORMATION

THE ABOVE INFORMATION IS BASED ON THE DATA OF WHICH WE ARE AWARE AND IS BELIEVED TO BE CORRECT AS OF THE DATA HEREOF. SINCE THIS INFORMATION MAY BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL AND WITH WHICH MAY BE UNFAMILIAR AND SINCE DATA MADE AVAILABLE SUBSEQUENT TO THE DATA HEREOF MAY SUGGEST MODIFICATIONS OF THE INFORMATION, WE DO NOT ASSUME ANY RESPONSIBILITY FOR THE RESULTS OF ITS USE. THIS INFORMATION IS FURNISHED UPON CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS OWN

DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR HIS PARTICULAR PURPOSE.

MSDS CREATION DATE: OCTOBER 10, 2007

# ITEM: 2MDV7 - Run Capacitor 10 MFD 370 VAC Oval

PICK\_REQ: 1080137057

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: B3015

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - B3015

WEAR SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

Associated Grainger Item: 2MDV7 - Run Capacitor 10 MFD 370 VAC Oval

2MDW3, 2MDW4, 2MDW5, 2MDW6, 2MDW7, 2MDW8, 2MDW9, 2MDX1, 2MDX2, 2MDX3, 2MDX4  
2MDX5, 2MDX6, 2MDX7, 2MDX8, 2MDX9, 2MDY1, 2MDY2, 2MDY3, 2MDY4, 2MDY5, 2MDY6  
2MDY7, 2MDY8, 2MDY9, 2MDZ1, 2MDZ2, 2MDZ3, 2MDZ4, 2MDZ5, 2MDZ6, 2MDZ7, 2MDZ8  
2MDZ9, 2MEA1, 2MEA2, 2MEA3, 2MEA4, 2MEA5, 2MEA6, 2MEA7, 2MEA8, 2MEA9, 2MEC1  
2MEC2, 2MEC3, 2MEC4, 2MEC5, 2MEC6, 2MEC7, 2MEC8, 2MEC9, 2MEE1, 2MEE2, 2MEE3  
2MEE4, 2MEE5, 2MEE6, 2MEE7, 2MEE8, 2MEE9, 2MEF1, 2MEF2, 2MEF3, 2MEF4, 2MEF5  
2MEF6, 2MEF7, 2MEF8, 2MEF9, 2MEH1, 2MEH2, 2MEH3, 2MEH4, 2MEH5, 2MEH6, 2MEH7, 2MEH8, 2MEH9  
2MEJ1, 2MEJ2, 2MEJ3, 2MEJ4, 2MEJ5, 2MEJ6, 2MEJ7, 2MEJ8, 2MEJ9, 2MEK1, 2MEK2  
2MEK3, 2MEK4, 2MEK5, 2MEK6, 2MEK7, 2MEK8, 2MEK9, 2MEL1, 2MEU7, 2MEU8

PONY

REPORT NO.: SZ070929-039

DATE: 10.10.2007

MATERIAL SAFETY DATA SHEET

## SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: RUN CAPACITOR (CBB65A)

TRADE NAME: CAPACITOR

SAMPLE CODE: CBB65A

MANUFACTURE: WENLING ZEGUO DALI ELECTRONIC UNIT FACTORY

ADDRESS:  
DANYA INDUSTRIAL ZONE  
ZEGUO, WENLING CITY, ZHEJIANG  
CHINA

POST CODE: 317523

TEL: 0576-86448268

EMERGENCY TELEPHONE: 0576-86448268

EMAIL: DALI@HUI-ZHONG.NET

## SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENT

COMPONENT	CHEMICAL NAME	FORMULA	CAS NO.
ALUMINUM HULL	ALUMINUM	Al	7429-90-5
CUPULE OF INSERT	POLYPROPYLENE	(C3H6)x	9003-07-0
INSERT	COPPER WITH TIN	Cu Sn	7440-50-8 7440-31-5
FILLER	MICROCRYSTALLINE WAX		63231-60-7
CORE:			
POLYPROPYLENE	POLYPROPYLENE	(C3H6)x	9003-07-0
ZINC	ZINC	Zn	7440-66-6
ALUMINUM	ALUMINUM	Al	7429-90-5
MANDRIL	POLYPROPYLENE	(C3H6)x	9003-07-0

## SECTION 3 - HAZARDS IDENTIFICATION

NO HARM IN NORMAL USE.

CAUTION!  
PUT RUN CAPACITY INTO FIRE AND MOLTEN MATERIAL WILL PRODUCE THERMAL BURNS.  
MAY CAUSE MECHANICAL IRRITATION. INHALATION OF DUST MAY CAUSE MECHANICAL IRRITATION.

## SECTION 4 - FIRST AID MEASURES

EYES:  
IF MOLTEN MATERIAL CONTACTS THE EYE, IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. IF EASY TO DO, REMOVE CONTACT LENSES. GET MEDICAL AID.

SKIN:  
IF BURNED BY CONTACT WITH MOLTEN MATERIAL, COOL AS QUICKLY AS POSSIBLE. DO NOT PEEL MATERIAL FROM SKIN. GET MEDICAL AID.

INHALATION:  
IF SYMPTOMATIC, MOVE TO FRESH AIR. GET MEDICAL ATTENTION IF SYMPTOMS PERSIST.

INGESTION: SEEK MEDICAL ADVICE.

NOTE TO PHYSICIAN:  
BURNS SHOULD BE TREATED AS THERMAL BURNS. THE MATERIAL WILL COME OFF AS HEALING OCCURS, THEREFORE, IMMEDIATE REMOVAL FROM THE SKIN IS NOT NECESSARY.

## SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: N/A.

AUTO-IGNITION TEMPERATURE: N/A.

EXTINGUISHING MEDIA: USE WATER SPRAY, CARBON DIOXIDE OR DRY CHEMICAL.

FIREFIGHTING:

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:  
WEAR GLOVES TO PICK UP BROKEN, DAMAGED CAPACITOR, TRANSFER TO WASTEBASKET FOR DISPOSAL.

WASTE DISPOSAL METHOD:  
DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL RULES AND REGULATIONS.

PRECAUTIONS-HANDLING/STORING: AVOID PHYSICAL DAMAGE. HANDLE WITH CARE.

## SECTION 7 - HANDLING AND STORAGE

THE CAPACITOR SHOULD NOT BE OPENED, DESTROYED OR INCINERATE.

HANDLING:  
AVOID CONTACT WITH MOLTEN MATERIAL. KEEP AWAY FROM FIRE. AVOID MECHANICAL OR ELECTRICAL ABUSE.

STORAGE:  
STORAGE PREFERABLY IN COOL, DRY AND VENTILATED AREA, WHICH IS SUBJECT TO LITTLE TEMPERATURE CHANGE. STORAGE AT HIGH TEMPERATURES SHOULD BE AVOIDED. DO NOT PLACE THE CAPACITOR NEAR HEATING EQUIPMENT, NOR EXPOSE TO DIRECT SUNLIGHT FOR LONG PERIODS.

## SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

NO NEED IN NORMAL USE.

IF AT LONG INDUSTRIAL CONDITION OR ON FIRE, REFERENCE AS FOLLOWS

ENGINEERING CONTROLS:  
IN A COOL, WELL-VENTILATED AREA. USE AN APPROVED PARTICULATE RESPIRATOR IN DUSTY OR MISTY ATMOSPHERES.

PERSONAL PROTECTION: SAFETY GLASSES, GLOVE, AND LAB COAT.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

pH: N/A.

VAPOR PRESSURE: N/A.

VAPOR DENSITY: N/A.

EVAPORATION RATE: N/A.

SOLUBILITY: N/A.

APPEARANCE CHARACTERS: SILVERY WHITE CYLINDRICAL SOLID.

CHEMICAL USES: REFRIGERATION EQUIPMENT OF AIR CONDITION.

## SECTION 10 - STABILITY AND REACTIVITY

STABILITY: STABLE

CONDITIONS TO AVOID: HEATING, MECHANICAL ABUSE AND ELECTRICAL ABUSE.

INCOMPATIBILITIES: REACT WITH FIRE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

## SECTION 11 - TOXICOLOGICAL INFORMATION

NO INFORMATION AVAILABLE.

## SECTION 12 - ECOLOGICAL INFORMATION

NO INFORMATION AVAILABLE.

## SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:  
TREATMENT, OR DISPOSAL MAY BE SUBJECT TO NATIONAL, STATE, OR LOCAL LAWS.

## SECTION 14 - TRANSPORT INFORMATION

SHIPPING NAME: NOT REGULATED.

HAZARD CLASS: N/A.

PACKAGING INFORMATION: BOX, TRAY.

## SECTION 15 - REGULATORY INFORMATION

LAW INFORMATION: IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS.

## SECTION 16 - ADDITIONAL INFORMATION

THE ABOVE INFORMATION IS BASED ON THE DATA OF WHICH WE ARE AWARE AND IS BELIEVED TO BE CORRECT AS OF THE DATA HEREOF. SINCE THIS INFORMATION MAY BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL AND WITH WHICH MAY BE UNFAMILIAR AND SINCE DATA MADE AVAILABLE SUBSEQUENT TO THE DATA HEREOF MAY SUGGEST MODIFICATIONS OF THE INFORMATION, WE DO NOT ASSUME ANY RESPONSIBILITY FOR THE RESULTS OF ITS USE. THIS INFORMATION IS FURNISHED UPON CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS OWN

DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR HIS PARTICULAR PURPOSE.

MSDS CREATION DATE: OCTOBER 10, 2007

ITEM: 2MDV9 - Run Capacitor 15 MFD 370 VAC Oval

PICK REQ: 1080137057

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: B3015

This MSDS should be attached or kept with the respective product with which it is associated.

\*\*\*\*\* MATERIAL SAFETY DATA SHEET - B3015 \*\*\*\*\* WEAR SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

Associated Grainger Item: 2MDV9 - Run Capacitor 15 MFD 370 VAC Oval

2MDX3, 2MDX4, 2MDX5, 2MDX6, 2MDX7, 2MDX8, 2MDX9, 2MDY1, 2MDY2, 2MDY3, 2MDY4, 2MDY5, 2MDY6  
 2MDY7, 2MDY8, 2MDY9, 2MDZ1, 2MDZ2, 2MDZ3, 2MDZ4, 2MDZ5, 2MDZ6, 2MDZ7, 2MDZ8  
 2MEC1, 2MEC2, 2MEC3, 2MEC4, 2MEC5, 2MEC6, 2MEC7, 2MEC8, 2MEC9, 2MEE1, 2MEE2, 2MEE3  
 2MEE4, 2MEE5, 2MEE6, 2MEE7, 2MEE8, 2MEE9, 2MEF1, 2MEF2, 2MEF3, 2MEF4, 2MEF5  
 2MEF6, 2MEF7, 2MEF8, 2MEF9, 2MEG1, 2MEG2, 2MEG3, 2MEG4, 2MEG5, 2MEG6, 2MEG7  
 2MEH1, 2MEH2, 2MEH3, 2MEH4, 2MEH5, 2MEH6, 2MEH7, 2MEH8, 2MEH9  
 2MEJ1, 2MEJ2, 2MEJ3, 2MEJ4, 2MEJ5, 2MEJ6, 2MEJ7, 2MEJ8, 2MEJ9, 2MEK1, 2MEK2  
 2MEK3, 2MEK4, 2MEK5, 2MEK6, 2MEK7, 2MEK8, 2MEK9, 2MEL1, 2MEU7, 2MEU8

PONY

REPORT NO.: SZ070929-039

DATE: 10.10.2007

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: RUN CAPACITOR (CBB65A)

TRADE NAME: CAPACITOR

SAMPLE CODE: CBB65A

MANUFACTURE: WENLING ZEGUO DALI ELECTRONIC UNIT FACTORY

ADDRESS:  
 DANYA INDUSTRIAL ZONE  
 ZEGUO, WENLING CITY, ZHEJIANG  
 CHINA

POST CODE: 317523

TEL: 0576-86448268

EMERGENCY TELEPHONE: 0576-86448268

EMAIL: DALI@HUI-ZHONG.NET

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENT

COMPONENT	CHEMICAL NAME	FORMULA	CAS NO.
ALUMINUM HULL	ALUMINUM	Al	7429-90-5
TUPULE OF INSERT	POLYPROPYLENE	(C3H6)x	9003-07-0
INSERT	COPPER WITH TIN	Cu Sn	7440-50-8 7440-31-5
FILLER	MICROCRYSTALLINE WAX		63231-60-7
CORE:			
POLYPROPYLENE	POLYPROPYLENE	(C3H6)x	9003-07-0
ZINC	ZINC	Zn	7440-66-6
ALUMINUM	ALUMINUM	Al	7429-90-5
MANDRIL	POLYPROPYLENE	(C3H6)x	9003-07-0

SECTION 3 - HAZARDS IDENTIFICATION

NO HARM IN NORMAL USE.

CAUTION!  
 PUT RUN CAPACITY INTO FIRE AND MOLTEN MATERIAL WILL PRODUCE THERMAL BURNS.  
 MAY CAUSE MECHANICAL IRRITATION. INHALATION OF DUST MAY CAUSE MECHANICAL  
 IRRITATION.

SECTION 4 - FIRST AID MEASURES

EYES:  
 IF MOLTEN MATERIAL CONTACTS THE EYE, IMMEDIATELY FLUSH WITH PLENTY OF WATER  
 FOR AT LEAST 15 MINUTES. IF EASY TO DO, REMOVE CONTACT LENSES. GET MEDICAL  
 AID.

SKIN:  
 IF BURNED BY CONTACT WITH MOLTEN MATERIAL, COOL AS QUICKLY AS POSSIBLE.  
 DO NOT PEEL MATERIAL FROM SKIN. GET MEDICAL AID.

INHALATION:  
 IF SYMPTOMATIC, MOVE TO FRESH AIR. GET MEDICAL ATTENTION IF SYMPTOMS  
 PERSIST.

INGESTION: SEEK MEDICAL ADVICE.

NOTE TO PHYSICIAN:  
 BURNS SHOULD BE TREATED AS THERMAL BURNS. THE MATERIAL WILL COME OFF AS  
 HEALING OCCURS, THEREFORE, IMMEDIATE REMOVAL FROM THE SKIN IS NOT  
 NECESSARY.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: N/A.

AUTO-IGNITION TEMPERATURE: N/A.

EXTINGUISHING MEDIA: USE WATER SPRAY, CARBON DIOXIDE OR DRY CHEMICAL.

FIRE FIGHTING:

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:  
 WEAR GLOVES TO PICK UP BROKEN, DAMAGED CAPACITOR, TRANSFER TO WASTERASKET  
 FOR DISPOSAL.

WASTE DISPOSAL METHOD:  
 DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL RULES AND  
 REGULATIONS.

PRECAUTIONS-HANDLING/STORING: AVOID PHYSICAL DAMAGE. HANDLE WITH CARE.

SECTION 7 - HANDLING AND STORAGE

THE CAPACITOR SHOULD NOT BE OPENED, DESTROYED OR INCINERATE.

HANDLING:  
 AVOID CONTACT WITH MOLTEN MATERIAL. KEEP AWAY FROM FIRE. AVOID MECHANICAL  
 OR ELECTRICAL ABUSE.

STORAGE:  
 STORAGE PREFERABLY IN COOL, DRY AND VENTILATED AREA, WHICH IS SUBJECT TO  
 LITTLE TEMPERATURE CHANGE. STORAGE AT HIGH TEMPERATURES SHOULD BE AVOIDED.  
 DO NOT PLACE THE CAPACITOR NEAR HEATING EQUIPMENT, NOR EXPOSE TO DIRECT  
 SUNLIGHT FOR LONG PERIODS.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

NO NEED IN NORMAL USE.

IF AT LONG INDUSTRIAL CONDITION OR ON FIRE, REFERENCE AS FOLLOWS

ENGINEERING CONTROLS:  
 IN A COOL, WELL-VENTILATED AREA. USE AN APPROVED PARTICULATE RESPIRATOR IN  
 DUSTY OR MISTY ATMOSPHERES.

PERSONAL PROTECTION: SAFETY GLASSES, GLOVE, AND LAB COAT.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

pH: N/A.

VAPOR PRESSURE: N/A.

VAPOR DENSITY: N/A.

EVAPORATION RATE: N/A.

SOLUBILITY: N/A.

APPEARANCE CHARACTERS: SILVERY WHITE CYLINDRICAL SOLID.

CHEMICAL USES: REFRIGERATION EQUIPMENT OF AIR CONDITION.

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: STABLE

CONDITIONS TO AVOID: HEATING, MECHANICAL ABUSE AND ELECTRICAL ABUSE.

INCOMPATIBILITIES: REACT WITH FIRE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION 11 - TOXICOLOGICAL INFORMATION

NO INFORMATION AVAILABLE.

SECTION 12 - ECOLOGICAL INFORMATION

NO INFORMATION AVAILABLE.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:  
 TREATMENT, OR DISPOSAL MAY BE SUBJECT TO NATIONAL, STATE, OR LOCAL LAWS.

SECTION 14 - TRANSPORT INFORMATION

SHIPPING NAME: NOT REGULATED.

HAZARD CLASS: N/A.

PACKAGING INFORMATION: BOX, TRAY.

SECTION 15 - REGULATORY INFORMATION

LAW INFORMATION: IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS.

SECTION 16 - ADDITIONAL INFORMATION

THE ABOVE INFORMATION IS BASED ON THE DATA OF WHICH WE ARE AWARE AND IS  
 BELIEVED TO BE CORRECT AS OF THE DATA HEREOF. SINCE THIS INFORMATION MAY  
 BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL AND WITH WHICH MAY BE  
 UNFAMILIAR AND SINCE DATA MADE AVAILABLE SUBSEQUENT TO THE DATA HEREOF  
 MAY SUGGEST MODIFICATIONS OF THE INFORMATION, WE DO NOT ASSUME ANY  
 RESPONSIBILITY FOR THE RESULTS OF ITS USE. THIS INFORMATION IS FURNISHED  
 UPON CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS OWN

DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR HIS PARTICULAR PURPOSE.

MSDS CREATION DATE: OCTOBER 10, 2007

ITEM: 1XPG4 - Rust Buster Penetrant Zoom Spout 4

PICK\_REQ: 1080137057

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: B1129

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - B1129

Associated Grainger Item: 1XPG4 - Rust Buster Penetrant Zoom Spout 4

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ZOOM SPOUT OILER

REVISION #: 2.3

DATE PREPARED: MAY 22, 1991

DATE REVISED: APRIL 10, 2007

MANUFACTURER: LA-CO INDUSTRIES, INC./MARKAL CO. 1201 ERKIT BLVD. ELK GROVE VILLAGE, IL, 60007-5746 USA

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: GENERAL PURPOSE LUBRICATING OIL

SUPPLIER/IMPORTER:

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

Table with 3 columns: INGREDIENT, CAS NO., %

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: HARMFUL BY INHALATION AND IF SWALLOWED. MAY CAUSE LUNG DAMAGE IF SWALLOWED. IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN. KEEP OUT OF REACH OF CHILDREN. KEEP AWAY FROM FOOD AND DRINK. DO NOT BREATHE VAPOR OR SPRAY. AVOID CONTACT WITH SKIN AND EYES. IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. DO NOT EMPTY INTO DRAINS. WEAR SUITABLE PROTECTIVE CLOTHING. IF SWALLOWED, DO NOT INDUCE VOMITING. SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER, LABEL OR SAFETY DATA SHEET.

POTENTIAL HEALTH EFFECTS:

PRIMARY EXPOSURE ROUTES: EYES, SKIN, INGESTION, INHALATION

ACUTE EFFECTS:

EYES: MAY CAUSE EYE IRRITATION. DIRECT CONTACT MAY CAUSE BURNING, TEARING AND REDNESS.

SKIN: MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY CAUSE REDNESS, BURNING AND DERMATITIS.

INGESTION: MAY CAUSE IRRITATION OF THE DIGESTIVE TRACT.

INHALATION: EXPOSURE TO MISTS, OR PROLONGED OR REPEATED EXPOSURE TO FUMES OR VAPORS THAT MAY BE GENERATED WHEN THIS MATERIAL IS HEATED, MAY CAUSE IRRITATION OF NOSE AND THROAT.

CHRONIC EFFECTS:

EYES: NOT DETERMINED.

SKIN: NOT DETERMINED.

INGESTION: NOT DETERMINED.

INHALATION: NOT DETERMINED.

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

EYE CONTACT: FOR DIRECT CONTACT, FLUSH EYES WITH PLENTY OF CLEAN WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN.

SKIN CONTACT:

DO NOT USE GASOLINE, THINNERS OR SOLVENTS TO REMOVE PRODUCT FROM SKIN. WIPE PRODUCT FROM SKIN WITH ABSORBENT CLOTH OR PAPER AND REMOVE CONTAMINATED CLOTHING. CLEANSER AFFECTED AREAS THOROUGHLY BY WASHING WITH SOAP AND WATER AND, IF NECESSARY, A WATERLESS SKIN CLEANER. IF IRRITATION OR REDNESS DEVELOPS AND PERSISTS, SEEK MEDICAL ATTENTION.

INGESTION:

IF VICTIM IS CONSCIOUS AND ALERT, GIVE 2 TO 3 CUPS OF MILK OR WATER TO DRINK. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL ATTENTION.

TO PHYSICIAN:

EMESIS OR LAVAGE IS NOT RECOMMENDED FOR INGESTION OF MINUTE QUANTITIES OR TASTES OF MOST HYDROCARBONS. MEDICAL OPINION IS DIVIDED FOR LARGER INGESTION. EMESIS OR LAVAGE HAS BEEN RECOMMENDED FOR THOSE PETROLEUM PRODUCTS WHICH HAVE A HIGH ORAL TOXICITY. GASTRIC LAVAGE WITH A CUFFED ENDOTRACHEAL TUBE IS RECOMMENDED BY SOME PHYSICIANS TO PREVENT ASPIRATION.

INHALATION:

IF IRRITATION OF NOSE OR THROAT DEVELOPS, MOVE AWAY FROM SOURCE OF EXPOSURE AND INTO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION. IF VICTIM IS NOT BREATHING OR IF BREATHING DIFFICULTIES DEVELOP, ARTIFICIAL RESPIRATION OR OXYGEN SHOULD BE ADMINISTERED BY QUALIFIED PERSONNEL. SEEK IMMEDIATE MEDICAL ATTENTION.

OTHER INFORMATION: NONE.

SECTION 5 FIRE FIGHTING MEASURES

FLASH POINT (METHOD): 388 DEG. F / 198 DEG. C (COC)

AUTOIGNITION TEMPERATURE: NOT DETERMINED.

LEL: NOT DETERMINED.

UEL: NOT DETERMINED.

FLAMMABILITY CLASSIFICATION: NFPA CLASS IIIB

EXTINGUISHING MEDIA:

DRY CHEMICAL, CARBON DIOXIDE (CO2), WATER SPRAY, FOAM, SAND OR EARTH. WATER AND FOAM MAY CAUSE FROTHING.

HAZARDOUS COMBUSTION PRODUCTS:

CARBON MONOXIDE, CARBON DIOXIDE, SMALLER AMOUNTS OF OXIDES OF SULFUR AND NITROGEN.

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). WATER SPRAY MAY BE USEFUL IN MINIMIZING VAPORS AND COOLING CONTAINERS EXPOSED TO HEAT AND FLAME. AVOID SPREADING BURNING LIQUID WITH WATER USED FOR COOLING PURPOSES. MOVE UNDAMAGED CONTAINERS FROM FIRE AREA IF POSSIBLE WITHOUT RISK.

SECTION 6 ACCIDENTAL RELEASE MEASURES

USE RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (SEE SECTION 8). COLLECT LEAKING LIQUID IN SEALABLE CONTAINERS. ABSORB SPILLED LIQUID IN SAND OR INERT ABSORBENT. CONTACT FIRE AUTHORITIES AND APPROPRIATE REGULATORY AGENCIES. IF SPILL OF ANY AMOUNT IS MADE INTO OR UPON U.S. NAVIGABLE WATERS, THE CONTIGUOUS ZONE, OR ADJOINING SHORELINES, NOTIFY COAST GUARD NATIONAL RESPONSE CENTER (800-424-8802).

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). STORE IN A COOL, DRY AREA.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE/FACE PROTECTION:

USE APPROVED EYE PROTECTION TO SAFEGUARD AGAINST POTENTIAL EYE CONTACT.

SKIN/HAND PROTECTION: USE IMPERMEABLE GLOVES, SUCH AS RUBBER GLOVES.

RESPIRATORY PROTECTION:

IF AIRBORNE CONCENTRATION EXCEEDS RECOMMENDED EXPOSURE LIMITS, A SUITABLE FILTER-TYPE RESPIRATOR SHOULD BE WORN.

OTHER EQUIPMENT: EYE WASH AND SAFETY SHOWER.

ENGINEERING CONTROLS:

NORMAL ROOM VENTILATION. LOCAL EXHAUST IN CONFINED AREAS.

ADMINISTRATIVE CONTROLS:

USERS OF THIS PRODUCT MUST BE PROPERLY TRAINED AND QUALIFIED IN ITS USE.

OTHER INFORMATION:

IT IS SUGGESTED THAT A SOURCE OF CLEAN WATER BE AVAILABLE IN THE WORK AREA FOR FLUSHING EYES AND SKIN. BARRIER CREAMS THAT ARE SPECIFIC FOR OIL-BASED MATERIALS ARE RECOMMENDED WHEN GLOVES ARE IMPRACTICAL.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: CLEAR YELLOW LIQUID.

ODOR: OIL-LIKE.

ODOR THRESHOLD (PPM): NOT DETERMINED.

SPECIFIC GRAVITY (H2O = 1): 0.88

SOLUBILITY:  
WATER: INSOLUBLE.  
FAT: SOLUBLE.

COEFFICIENT OF WATER/OIL SOLUBILITY: <<1

PARTITION COEFFICIENT (n-OCTANOL/WATER): >>1

pH: NOT APPLICABLE.

MELTING POINT: NOT DETERMINED.

BOILING POINT: ABOVE 600 DEG. F / 316 DEG. C

VAPOR PRESSURE (MMHg AT 20 DEG. C): NOT DETERMINED.

VAPOR DENSITY (AIR = 1): >1

EVAPORATION RATE (n-BuAc=1): <1

V.O.C.: 0% (W/W), 0% (V/V), 0 LBS./GAL. (U.S.), 0 KG/L

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.

SECTION 10 STABILITY AND REACTIVITY

CHEMICAL STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: NONE KNOWN.

CHEMICALS TO AVOID: STRONG OXIDIZERS.

HAZARDOUS DECOMPOSITION PRODUCTS (NON-THERMAL): NOT DETERMINED.

SECTION 11 TOXICOLOGICAL INFORMATION

SENSITIZATION TO PRODUCT: NOT APPLICABLE.

IRRITANCY OF PRODUCT: EYE AND SKIN CONTACT, INHALATION, INGESTION.

REPRODUCTIVE TOXICITY: NOT APPLICABLE.

MUTAGENICITY: NOT APPLICABLE.

CARCINOGENICITY: 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

BIODEGRADABILITY: NOT DETERMINED.

DEGRADABILITY: NOT DETERMINED.

BIOACCUMULATION: NOT DETERMINED.

ECOTOXICITY: NOT DETERMINED.

OTHER ADVERSE EFFECTS: NOT DETERMINED.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

SECTION 14 TRANSPORT INFORMATION

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.  
EDG (CANADA): NOT REGULATED.  
DATA: NOT REGULATED.  
PCAO: NOT REGULATED.  
IMO: NOT REGULATED.

AUSTRALIAN CODE FOR THE TRANSPORT OF DANGEROUS GOODS:

DANGEROUS GOODS CLASS AND SUBSIDIARY RISK: NOT DETERMINED.

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 CONSIDERED TO BE HAZARDOUS AS DEFINED BY THE U.S. OSHA HCS (29 CFR 1910.1200).

EPA SARA SEC. 311/312 HAZARD CATEGORIES: IMMEDIATE (ACUTE) HEALTH HAZARD.

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 1  
FLAMMABILITY 1  
REACTIVITY 0

NFPA RATING:  
HEALTH 0  
FLAMMABILITY 1  
REACTIVITY 0

CANADA:

WHMIS STATUS:  
THIS PRODUCT IS CONSIDERED TO BE HAZARDOUS AS DEFINED BY CANADIAN WHMIS CONTROLLED PRODUCTS REGULATIONS.

WHMIS RATING: D1-B

WHMIS RISK PHRASES:  
HARMFUL BY INHALATION AND IF SWALLOWED. MAY CAUSE LUNG DAMAGE IF SWALLOWED. IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

WHMIS PRECAUTIONARY STATEMENTS:  
KEEP OUT OF REACH OF CHILDREN. KEEP AWAY FROM FOOD AND DRINK. DO NOT BREATHE VAPOR OR SPRAY. AVOID CONTACT WITH SKIN AND EYES. IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. DO NOT EMPTY INTO DRAINS. WEAR SUITABLE PROTECTIVE CLOTHING. IF SWALLOWED, DO NOT INDUCE VOMITING. SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER, LABEL OR SAFETY DATA SHEET.

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):  
HARMFUL (Xn)  
IRRITANT (Xi)

RISK (R) PHRASES:  
HARMFUL BY INHALATION AND IF SWALLOWED (R20/22).  
HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED (R65).  
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN (R36/37/38).

SAFETY (S) PHRASES:  
KEEP OUT OF REACH OF CHILDREN (S2)

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS (S13)

DO NOT BREATHE VAPOR OR SPRAY (S23)

AVOID CONTACT WITH SKIN AND EYES (S24/25)

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE (S26)

DO NOT EMPTY INTO DRAINS (S29)

WEAR SUITABLE PROTECTIVE CLOTHING (S36)

IF SWALLOWED, SEEK MEDICAL ADVICE AND SHOW THIS CONTAINER, LABEL OR SAFETY DATA SHEET (S46)

IF SWALLOWED, DO NOT INDUCE VOMITING. SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER, LABEL OR SAFETY DATA SHEET (S62).

AUSTRALIA:

WORKSAFE AUSTRALIA STATUS:  
THIS PRODUCT IS CLASSIFIED AS HAZARDOUS ACCORDING TO CRITERIA OF WORKSAFE AUSTRALIA.

HAZCHEM CODE: NOT DETERMINED.

POISONS SCHEDULE NUMBER: NOT DETERMINED.

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 CIP2 REGULATION 6, AND THE AUSTRALIAN INMRCMS. 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.

ITEM: 4X227 - Sealant Tape 1/2 x 260 In

PICK REQ: 1080137057

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: A9906

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - A9906

Associated Grainger Item: 4X227 - Sealant Tape 1/2 x 260 In

A  
ANTI-SEIZE TECHNOLOGY  
A.S.T. INDUSTRIES, INC.

H.M.I.S.:  
H 0  
F 0  
R 0  
P.P.

PTFE THREAD SEAL TAPES

POLY-TEMP (R\*), POLY-TEMP(R\*) HD, POLY-TEMP(R\*) XHD  
POLY-TEMP (R\*) GAS, POLY-TEMP(R\*) PINK AND LOW DENSITY PTFE TAPE

STOCK #'S):  
16025, 16030, 16030A, 16035, 16035A, 16040, 16045, 16050, 16050A, 16055,  
16060, 46125, 46135, 46150, 46230, 46235, 46250, 46330, 46335, 46345,  
46350, 46430, 46430A, 26130, 26135, 26140, 26145, 26150, 26155, 26160

MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT IDENTIFICATION

MANUFACTURER:  
ANTI-SEIZE TECHNOLOGY  
2345 N. 17TH. AVE.  
FRANKLIN PARK, IL. 60131

TELEPHONE #: 847-455-2300

24 HOUR EMERGENCY #: INFOTRAC, 1-800-535-5053

SECTION II - COMPOSITION

CAS #	OSHA PEL	TLV	SARA III	PROP 65	PERCENT
POLYTETRAFLUOROETHANE (99.9% VIRGIN MATERIAL)	9002-84-0 NOT ESTABLISHED		NO	NO	100

SECTION III - PHYSICAL PROPERTIES

BOILING POINT: DOES NOT APPLY  
SOLUBILITY IN WATER: NONE  
MELTING POINT: OVER 500 F  
REACTIVITY IN WATER: NONE  
VAPOR PRESSURE: 0  
SPECIFIC GRAVITY: 0.35 - 1.5 DEPENDING ON GRADE OF TAPE  
EVAPORATION RATE: 0  
PERCENT VOLATILE: 0  
APPEARANCE AND ODOR: WHITE PLASTIC LIKE TAPE, NO ODOR

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT AND METHOD USED: DOES NOT APPLY. DOES NOT BURN  
FLAMMABLE LIMITS:  
LEL: NO DATA  
UEL: NO DATA  
EXTINGUISHING MEDIA: FOAM, CO2, DRY CHEMICAL  
SPECIAL FIRE FIGHTING PROCEDURES:  
MAY EMIT TOXIC FUMES IN A FIRE. DOES NOT BURN WITHOUT AN EXTERNAL SOURCE OF  
FUEL. WEAR A "N.I.O.S.H." APPROVED ORGANIC VAPOR RESPIRATOR.  
UNUSUAL FIRE AND EXPLOSION HAZARDS:  
DENSE SMOKE AND NOXIOUS OR TOXIC FUMES MAY BE GENERATED IN A FIRE. FIRE  
FIGHTERS SHOULD WEAR A SELF-CONTAINED BREATHING APPARATUS.

SECTION V - PHYSICAL HAZARDS

STABILITY:  
(X) STABLE  
( ) UNSTABLE  
CONDITIONS TO AVOID: TEMPERATURE OVER 500 F

INCOMPATIBILITY, (MATERIALS TO AVOID):  
FLUORINE AND RELATED COMPOUNDS, CHLORINE TRIFLUORIDE, ALKALI METALS,  
INTERHALOGEN COMPOUNDS.

HAZARDOUS DECOMPOSITION PRODUCTS:  
IF THE SERVICE TEMPERATURES EXCEEDS 750 F. THEN "PTFE" WILL BEGIN TO  
UNDERGO THERMAL DECOMPOSITION. AT THESE TEMPERATURES "PTFE" CAN EMIT  
ACUTELY TOXIC VAPORS. THESE VAPORS CAN INCLUDE HEXAFLUOROPROPYLENE,  
PERFLUOROISOBUTYLENE AND CARBONYL FLUORIDE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SECTION VI - HEALTH HAZARDS AND FIRST AID

ROUTES OF ENTRY:

- ( ) SKIN
- ( ) EYES
- (X) INHALATION
- ( ) INGESTION

HEALTH HAZARDS:

"PTFE" IS RELATIVELY NON-TOXIC. THE PRIMARY HEALTH HAZARD ASSOCIATED  
WITH "PTFE" IS EXTREMELY HIGH TEMPERATURE THERMAL DECOMPOSITION BY  
PRODUCTS. DO NOT USE THIS PRODUCT IN APPLICATIONS WHERE THE TEMPERATURE IS  
EXPECTED TO EXCEED 550F. AT TEMPERATURES EXCEEDING 572 F., PARTICULATE  
MATTER CAN FORM WHICH COULD RESULT IN A CONDITION KNOWN AS "POLYMER FUME  
FEVER", A TEMPORARY FLU-LIKE CONDITION WITH CHILLS, FEVER, NAUSEA, MUSCLE OR  
JOINT ACHE AND SOMETIMES COUGH. THIS CAN OCCUR IF TOBACCO PRODUCTS ARE  
CONTAMINATED WITH PTFE PARTICLES WHICH IS UNLIKELY WITH THIS PRODUCT.

EMERGENCY FIRST AID PROCEDURES:

SKIN: WASH WITH SOAP AND WATER.

EYES: UNLIKELY

INGESTION:

IF INGESTED THIS PRODUCT IS NOT EXPECTED TO CAUSE AN ACUTE REACTION. CALL  
A POISON CONTROL CENTER OR A PHYSICIAN.

INHALATION:

NOT LIKELY UNDER NORMAL CONDITIONS OF USE. IF USING IN HIGH TEMPERATURE  
APPLICATIONS WHERE THERMAL DECOMPOSITION IS LIKELY, USE A LOCAL EXHAUST  
TO REMOVE FUMES. IF DIZZINESS OR IRRITATION OCCURS, SEEK FRESH AIR.

CHEMICAL ('S) LISTED AS CARCINOGENS:

NPT?: NO  
I.A.R.C.?: NO  
OSHA?: NO

SECTION VII - SPECIAL PRECAUTIONS AND SPILL PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: NONE REASONABLY FORESEEN.

OTHER PRECAUTIONS: KEEP AWAY FROM CHILDREN.

SPILL/LEAKAGE PROCEDURES: DOES NOT APPLY

WASTE DISPOSAL:

DISPOSE OF IN A RESPONSIBLE MANNER. FOLLOW LOCAL, STATE AND FEDERAL  
GUIDELINES. INCINERATION IS THE PREFERRED METHOD OF DISPOSAL, ALTHOUGH IT  
MAY BE LANDFILLED AT AN APPROVED FACILITY.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:

NORMALLY NOT REQUIRED. IF THIS PRODUCT IS BEING USED IN HIGH TEMPERATURE  
APPLICATIONS WHERE THE PRODUCT "SMOKES", USE A LOCAL EXHAUST OR VENTILATE  
THE AREA TO MAINTAIN THE AIR QUALITY. A "N.I.O.S.H." APPROVED ORGANIC VAPOR  
RESPIRATOR IS ALSO ACCEPTABLE.

PROTECTIVE GLOVES: NOT REQUIRED.

EYE PROTECTION: NOT REQUIRED.

WORK/HYGIENIC PRACTICES:

USE GOOD STANDARD PRACTICES WHEN USING THIS MATERIAL. DO NOT SMOKE WHILE  
USING.

SECTION IX - REGULATORY INFORMATION

CALIFORNIA PROPOSITION 65: NO

RCRA: NO

OZONE DEPLETING SUBSTANCES: NONE

DOT SHIPPING CLASS: NOT HAZARDOUS

SARA TITLE III: NO

TASCA INVENTORY: ALL INGREDIENTS LISTED

CERCLA: NO

NFPA RATING:

H 2  
F 1  
R 0

SECTION X - DISCLAIMER

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE,  
HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THE  
DATA OR THE RESULTS OBTAINED FROM THE USE OF THIS PRODUCT. THEREFORE,  
BECAUSE THE PRODUCT MAY BE USED UNDER CONDITIONS BEYOND OUR CONTROL, WE  
ASSUME NO LIABILITY FOR ITS USE.

DATE PREPARED: 08/10/05

PTFE TAPE, ALL GRADES EXCEPT COPPER, NICKEL, CERAMIC

**PRODUCT: SILVALOY® 15**  
**(AWS BCuP-5)****NOMINAL COMPOSITION:**

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Silver	15.00 ± 0.50%
Phosphorus	5.00 ± 0.20%
Copper	Balance
Total Other Elements	0.15% Max.

**PHYSICAL CONSTANTS:**

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Solidus	1190°F (643°C)
Liquidus	1475°F (802°C)
Brazing Range	1300-1500°F (704-816°C)
Specific Gravity	8.44
Density (lb/cu in)	0.305
Electrical Conductivity (% IACS)	9.9
Electrical Resistivity (Microhm-cm)	17.4
Color	Light Copper

**DESCRIPTION:**

**SILVALOY 15** is used for the brazing of copper and copper alloys, brass and bronze. It can also be used on silver, tungsten and molybdenum. It is very effective for joining pipe and tubing and is widely used for electrical work.

**SILVALOY 15** should not be used on ferrous metals or copper alloys containing more than 10% nickel because of phosphorous embrittlement due to reactions with iron or nickel. Of the phos-copper brazing filler metals, **SILVALOY 15** has more ductility and better electrical conductivity than the lower silver content phos-coppers. It has good flow and wetting properties on copper, brass and bronze. Of the phos-copper filler metals, **SILVALOY 15** has the most "sluggish" flow characteristics. This enables it to fill gaps better. The recommended joint clearances are between 0.001" and 0.005". Melting of **SILVALOY 15** is virtually complete at 1300°F (704°C) even though the liquidus is not yet reached. Best results are obtained when brazing slightly above this temperature.

**PROPERTIES OF BRAZED JOINTS**

Generally, the joint strength using **SILVALOY 15** will surpass the strengths of the base metals. Strength is a function of the base metals being joined, type of joint, design of joint, joint clearances and brazing procedures. The recommended maximum operating temperatures for **SILVALOY 15** are 300°F (continuous service) and 400°F (short time service). Corrosion resistance is satisfactory except when the joint is in contact with sulfurous atmosphere (especially at elevated temperatures).



**PRODUCT:** **SILVALOY®15 - CONTINUED**  
**(AWS BCuP-5)**

**APPLICATIONS:**

The phosphorus content of **SILVALOY 15** acts as a fluxing agent and no flux is necessary when brazing copper to copper joints. However, when used with a copper alloy or one of the other brazeable metals, a brazing flux must be used to promote wetting, bonding and flow throughout the joint. The flux used must be active within the required temperature range of **SILVALOY 15** and active throughout the heating cycle. The flow point of **SILVALOY 15** is 1300°F (704°C).

**SPECIFICATIONS:**

AWS A5.8	BCuP-5
ASME	BCuP-5
QQ-B-650	BCuP-5
QQ-B-654	BCuP-5

**SAFETY INFORMATION:**

The operation and maintenance of brazing equipment or facility should conform to the provisions of American National Standard (ANSI) Z49.1, "Safety in Welding and Cutting". For more complete information, refer to the Material Safety Data Sheet for **SILVALOY 15**.

**AVAILABLE FORMS:**

Standard Forms of **SILVALOY 15** are wire, strip and preforms.

**LIABILITY-DISCLAIMER:**

Wolverine Joining Technologies, LLC, seeks to represent reliable information concerning the composition, properties and use of its products. The technical information provided in this publication is provided at no charge and is without guarantee, warranty or responsibility of any kind, expressed or implied.

Wolverine Joining Technologies, LLC  
235 Kilvert Street  
Warwick, RI 02886  
401-739-9550/fax 401-739-9555  
[www.silvalov.com](http://www.silvalov.com)



# OSHA-Required Health And Safety Information!

This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

## Section 1

**MATERIAL SAFETY DATA SHEET # 22**  
**Sta Put®**

Date Prepared: 12/17/1986 Last Reviewed: 11/29/2006

Meets OSHA 29 CFR 1910.1200



**MATERIAL SAFETY INFORMATION SERVICE**

Hercules Chemical Company Inc.  
111 South Street  
Passaic NJ 07055  
Phone (800) 221-9330  
Fax (800) 333-3456

## Section 2 - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)	OSHA PEL	ACGIH TLV	Other Limits	Upper Bound Limit if SARA Reportable
This product is not classified as hazardous in accordance with OSHA 1910.1200				

HMIS Hazard Rating: Health: 0 Flammability: 0 Reactivity: 0 Personal Protection: A

## Section 3 - Physical/Chemical Characteristics

Boiling Point (°F):	Specific Gravity (H <sub>2</sub> O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
N/A	1.89	N/A	N/A
Melting Point (°F)	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:	
N/A		Insoluble	
Appearance And Color:	Beige color mastic	Odor:	Very mild vegetable oil odor.

## Section 4 - Fire And Explosion Hazard Data

Flash Point:	Flammable Limits:	LEL:	UEL:
N/A	N/A		

Extinguishing Media: Dry chemical or carbon dioxide or water.

Special Firefighting Procedures:

As appropriate for surrounding fire.

Unusual Fire And Explosion Hazards:

None

Continued on Next Page

ITEM: 4E309 - Tape Foam Insulation

PICK\_REQ: 1080137057

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: B1230

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - B1230

Associated Grainger Item: 4E309 - Tape Foam Insulation

VIRGINIA FOAM INSULATION TAPE

(REVISED MAY 2006)

MATERIAL SAFETY DATA SHEET

SECTION I - COMPANY IDENTIFICATION

PRODUCT: VIRGINIA FOAM INSULATION TAPE

CAT. NO.: K501, K503, K504

DISTRIBUTED BY: VIRGINIA KMP US - PARKER HANNIFIN 1174 SECURITY DRIVE DALLAS, TEXAS 75247-6182

TELEPHONE NUMBERS: OFFICE: 1-(214) 330-7731

EMERGENCY ONLY: 1-(800) 424-9300

SECTION II - HAZARDOUS INGREDIENTS

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

EXPOSURE LIMITS: 8 HR, TWA OSHA PEL ACGIH TLV

THIS IS A SPONGE RUBBER PRODUCT WHICH CONTAINS SYNTHETIC POLYMERS, FILLERS, PLASTICIZERS AND RUBBER CHEMICALS. SINCE ALL OF THESE MATERIALS ARE BOUND IN A POLYMER MATRIX, THIS PRODUCT DOES NOT QUALIFY AS A HAZARDOUS MATERIAL AS DEFINED BY OSHA (29 CFR 1910.1200).

THE PRESSURE SENSITIVE COATING IS A SYNTHETIC RUBBER BASED ADHESIVE WITH A PAPER RELEASE LINER, AND IS CLASSIFIED AS AN ARTICLE WHICH IS NON-HAZARDOUS AS DEFINED BY OSHA (29 CFR 1910.1200).

SECTION III - HAZARDS IDENTIFICATIONS

EMERGENCY OVERVIEW: NONE.

POTENTIAL HEALTH EFFECTS:

INHALATION: NO SIGNIFICANT SIGNS OF ANY ADVERSE HEALTH HAZARDS ARE EXPECTED TO OCCUR AS A RESULT OF INHALATION EXPOSURE.

EYE CONTACT: NO SIGNIFICANT SIGNS OF ANY ADVERSE HEALTH HAZARDS ARE EXPECTED TO OCCUR AS A RESULT OF EYE CONTACT.

SKIN CONTACT: NO SIGNIFICANT SIGNS OF ANY ADVERSE HEALTH HAZARDS ARE EXPECTED TO OCCUR AS A RESULT OF SKIN CONTACT. MOLTEN MATERIAL CAUSES BURNS.

INGESTION: NO SIGNIFICANT SIGNS OF ANY ADVERSE HEALTH HAZARDS ARE EXPECTED TO OCCUR AS A RESULT OF INGESTION.

CHRONIC EFFECTS: NOT KNOWN.

NOTE:

MUTAGENICITY: LISTED IN NTP?: NO IARC?: NO OSHA REGULATED?: NO

SECTION IV - FIRST AID MEASURES

INHALATION: NOT REQUIRED UNDER NORMAL INDUSTRIAL USE.

EYE CONTACT: NOT REQUIRED UNDER NORMAL INDUSTRIAL USE.

SKIN CONTACT: NOT REQUIRED UNDER NORMAL INDUSTRIAL USE. IF MOLTEN MATERIAL CONTACTS THE SKIN COOL RAPIDLY WITH WATER.

INGESTION: NOT REQUIRED UNDER NORMAL INDUSTRIAL USE.

SECTION V - FIRE FIGHTING MEASURES

FLASHPOINT (TEST METHOD): 250 F CLOSED CUP

FLAMMABLE LIMITS: LOWER: NA UPPER: NA

AUTOIGNITION TEMPERATURE: NA

GENERAL HAZARD: MATERIAL WILL FLOAT.

FIRE FIGHTING INSTRUCTIONS: APPROACH FROM UPWIND SIDE. AVOID BREATHING SMOKE, FUMES, MISTS OR VAPORS IN DOWNWIND SIDE. FIREFIGHTERS WEAR PROTECTIVE CLOTHING, ESPECIALLY EYE PROTECTION, AND SELF CONTAINED BREATHING APPARATUS.

EXTINGUISHING MEDIA: CARBON DIOXIDE, ABC DRY CHEMICAL, WATER SPRAY AND FOAM.

HAZARDOUS COMBUSTION PRODUCTS: SMOKE, CARBON MONOXIDE, CARBON DIOXIDE, ACETIC ACID, ACRYLEIN AND ALDEHYDES.

SECTION VI - ACCIDENTAL RELEASE MEASURES

LAND SPILL: PICK UP SPILLED MATERIAL AND PLACE IT IN AN APPROPRIATE CONTAINER FOR REUSE OR DISPOSAL.

WATER SPILL: PRODUCT IS INSOLUBLE. PICK UP SPILLED MATERIAL AND PLACE IT IN AN APPROPRIATE CONTAINER FOR REUSE OR DISPOSAL.

SECTION VII - HANDLING AND STORAGE

HANDLING: FOR INDUSTRIAL USE ONLY. DO NOT BREATHE DECOMPOSITION PRODUCTS.

STORAGE: STORE IN A COOL DRY PLACE AWAY FROM STRONG OXIDIZERS AND STRONG ACIDS. ROTATE STOCK.

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: GENERAL DILUTION VENTILATION.

PERSONAL PROTECTION: RESPIRATOR NOT REQUIRED UNDER NORMAL CONDITIONS OF USE. WEAR CHEMICAL IMPERVIOUS GLOVES, SAFETY GLASSES. EYE WASH AND SAFETY SHOWER SHOULD ALWAYS BE NEARBY.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE @ 20 C: NAP

VAPOR DENSITY (AIR=1): NAP

SPECIFIC GRAVITY (H2O=1): 0.024

EVAPORATION RATE (H2O=1): NAP

SOLUBILITY IN WATER: NEGLIGIBLE

VOC (LB/GAL): NAP

pH: NAP

FREEZING POINT: NAP

BOILING POINT: NAP

APPEARANCE & ODOR: BLACK FOAM. CHARACTERISTIC ODOR.

SECTION X - STABILITY AND REACTIVITY

STABILITY: STABLE

CONDITIONS TO AVOID: TEMPERATURES ABOVE 230 DEG. C AND OPEN FLAME.

MATERIALS TO AVOID: STRONG OXIDIZERS AND STRONG ACIDS.

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE, ACETIC ACID, ACRYLEIN AND ALDEHYDES.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION XI - TOXICOLOGICAL INFORMATION

NO DATA

SECTION XII - ECOLOGICAL INFORMATION

NO DATA

SECTION XIII - DISPOSAL CONSIDERATIONS

WASTE MATERIAL MAY BE DISPOSED OF IN AN APPROVED LANDFILL OR MAY BE INCINERATED UNDER CONDITIONS WHICH MEET FEDERAL, STATE AND LOCAL ENVIRONMENTAL REG'S.

SECTION XIV - TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: NOT REGULATED MATERIAL

HAZARD CLASS: NA

IDENTIFICATION NUMBER: NA

DOT EMERGENCY GUIDE #: NA

REPORTABLE QUANTITY (RQ): NA

INTERNATIONAL: NA

SECTION XV - REGULATORY INFORMATION

TSCA (TOXIC SUBSTANCE CONTROL ACT): COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY.

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT): NOT LISTED.

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): NOT LISTED.  
CALIFORNIA PROPOSITION 65: NOT LISTED.

SECTION XVI - OTHER INFORMATION

STATE RIGHT-TO-KNOW PROGRAMS: NOT LISTED.

NFPA RATINGS:

HEALTH	0	
FLAMMABILITY		0
REACTIVITY		0

HMS PROTECTIVE EQUIPMENT X SEE YOUR SUPERVISOR

PREPARED BY: VIRGINIA KMP US - PARKER HANNIFIN

THIS INFORMATION IS FURNISHED WITHOUT WARRANTY, EXPRESSED OR IMPLIED, EXCEPT THAT IT IS ACCURATE TO THE BEST KNOWLEDGE OF VIRGINIA KMP US. THE DATA ON THIS SHEET RELATED ONLY TO SPECIFIC MATERIAL DESIGNATED HERE IN. VIRGINIA KMP ASSUMES NO LEGAL RESPONSIBILITY FOR USE OR RELIANCE UPON THESE DATA.



ATTN: COLBY  
4 PGS

## TruZinc® Steel

### Material Safety Data Sheet

#### SECTION 1 - COMPANY AND PRODUCT IDENTIFICATION

**Company Name:**

Steelscape, Inc.

 222 West Kalama River Rd  
 Kalama, WA 98625  
 Tel: (360) 673-8200

 11200 Arrow Route  
 Rancho Cucamonga, CA 91730  
 Tel: (909) 987-4711

 7001 Valley Road  
 Fairfield, Alabama 35064  
 Tel: (205) 787-9300

**In Case of Emergency Contact:** CHEMTREC (24 hours) Tel: 1-800-424-9300

**Product Name:** TruZinc® Steel

**Chemical Name(s):** Iron (Fe) - base metal      Aluminum (Al) - metallic coating  
 Zinc (Zn) - metallic coating

#### SECTION 2 - INGREDIENTS (Typical) AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMITS

**Base Steel (Cold Rolled Sheet)**

Ingredient	CAS No.	Wt. %	LD50 or LC50 Species/Route	OSHA PEL (mg/cu3)	ACGIH-TLV (mg/cu3) (TWA unless specified)
Iron	7439-89-6	Balance	5.4 gm/kg - mouse/oral	10 Iron Oxide Fume	5 - Iron Oxide Fume as Fe
Carbon	7440-44-0	0.30 max	No Information	Not Established	Not Established
Manganese	7439-96-5	1.00 max	9 gm/kg rat/oral	5 - ceiling as Mn	5 - Dust as Mn / 1 - Fume as Mn 3 - Fume as Mn (STEL)
Phosphorus	7723-14-0	0.15 max	No Information	0.1 - Total	None for Inorganic Phosphates
Sulfur	7704-34-9	0.05 max	No Information	15 - Total Dust 5 - Respirable Fraction	13 - as SO2
Silicon	7440-21-3	0.03 max	No Information	15 - Total Dust 5 - Respirable Fraction	10 - Total
Aluminum	7429-90-5	0.10 max	No Information	10 - Total Dust 5 - Respirable Fraction	Not Established

**Note:** Base Steel may contain the following trace or residual elements: Chromium (.10% max), Copper (.12% max), Molybdenum (.10% max), Nickel (.12% max), Columbium (.06% max) Tin (.03% max), Titanium (.06% max) and Vanadium (.08% max)

**Metallic Coating (TruZinc Steel)**

Ingredient	CAS No.	Wt. %	LD50 or LC50 Species/Route	OSHA PEL (mg/cu3)	ACGIH-TLV (mg/cu3) (TWA unless specified)
Aluminum	7429-90-5	0.10 - 0.50	No Information	10 - Total Dust 5 - Respirable Fraction	10 - Metal Dust as Al 5 - Fume as Al
Zinc	7440-66-6	99.2 - 99.5	No Information	5 - Fume as ZnO	5 - Fume as ZnO
Antimony	7440-36-0	0.01 - 0.05	No Information	0.5 - TWA	0.5 - TWA
Iron	7439-89-6	0.02 max	5.4 gm/kg mouse/oral	10 Iron Oxide Fume	5 Iron Oxide Fume as Fe



### SECTION 3 - PHYSICAL AND CHEMICAL CHARACTERISTICS

<b>Physical State:</b>	SOLID STATE	<b>Color, Appearance:</b>	Silver, bright crystalline
<b>Odor:</b>	NONE	<b>Sp. Gravity (H<sub>2</sub>O = 1):</b>	7.6-7.8
<b>Melting Point (Base Steel):</b>	2,800 F	<b>Melting Point (Metallic Coating):</b>	700 F
<b>Boiling Point:</b>	N/A	<b>Flash Point:</b>	N/A
<b>Vapor Pressure (mm Hg):</b>	N/A	<b>Vapor Density (Air = 1):</b>	N/A
<b>Solubility in Water:</b>	INSOLUBLE	<b>Reactivity in Water:</b>	NONE (in solid state)
<b>Pct. Volatile by volume:</b>	N/A	<b>Flammable Limits in Air (% vol.):</b>	N/A
<b>Extinguisher Media:</b>	DOES NOT BURN	<b>Auto-ignition temperature:</b>	N/A

### SECTION 4 - PHYSICAL HAZARDS

**Chemical Stability:** TruZinc Steel sheet is a stable material under normal conditions of use, storage and transport.

**Hazardous Conditions To Avoid:** TruZinc Steel will react with strong acid to liberate hydrogen. Finely divided material may react with water, strong oxidizers, alkalines and hydrogenated compounds. At temperatures exceeding the melting point of the metallic coating, fumes may be liberated which contain oxides of the metallic coating constituents. At temperatures exceeding the melting point of the base metal, fumes may be liberated which contain oxides of iron and other steel alloying elements.

**Hazardous Polymerization:** Polymerization will not occur.

### SECTION 5 - HEALTH HAZARD AND FIRST AID INFORMATION

#### **Potential Health Hazard:**

TruZinc Steel in its normal form does not pose a health hazard. Inhalation of metal dust and fume may result from further processing of TruZinc Steel by the user, particularly during welding, burning, grinding and machining activities. These potential health hazards should be evaluated by the user. Non-metallic coatings are normally applied to TruZinc Steel based upon customer/end use criteria. Typical non-metallic coatings include surface passivation treatments, oils and resin treatments. These non-metallic coatings may contain hazardous substances of varying amounts. During processing of TruZinc® Steel substances of varying chemical composition and quantity may be generated by these nonmetallic coatings. MSDS information regarding these non-metallic coatings shall be supplied by Steelscape to the user upon request.

#### **Effects of Overexposure:**

Chronic inhalation concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Chronic inhalation concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.



The inhalation of high concentrations of dust from manganese, copper, lead and/or zinc in the respirable particle size range can cause an influenza-like illness termed metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills. Continuous exposures to high concentrations of manganese can cause central nervous system disorders and "manganese pneumonia." Fibrosis of lung tissue from manganese exposures has also been reported for products containing manganese only. Overexposure to aluminum dust can cause shortness of breath.

Long term inhalation exposure to high concentrations (overexposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic effects. Prolonged or repeated contact with unprotected skin may result in skin irritation. Torching or burning operations on steel products with oil or organic coating may produce emissions which can be irritating to the eyes and respiratory tract.

**Medical Conditions Aggravated by Exposure:**

Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by fume or airborne particulate matter exposure.

**Carcinogen Information:**

Certain chromium and nickel compounds as well as organic compounds found in various coating materials have been listed as carcinogens by the NTP, IARC or OSHA.

**Emergency First Aid Measures:**

**Eye:**

Treat any foreign body in eye by flushing with large amounts of water. Seek medical attention immediately.

**Skin:**

Skin hazards are not expected. However, should dermatitis develop, affected area should be washed with mild soap and water. If irritation or other symptoms develop, seek medical attention immediately. Precautions should be taken to protect against sharp steel edges. If the skin is abraded by handling, seek medical attention immediately.

**Ingestion:**

Ingestion hazards are not expected.

**Inhalation:**

For treatment of overexposure to fumes and/or particulates, remove exposed individual to fresh air and seek medical attention immediately. Administer artificial respiration or oxygen if breathing is difficult or has stopped.



## SECTION 6 - SPECIAL PROTECTION INFORMATION

### **Respiratory:**

NIOSH/MSHA approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator depends on the magnitude of exposure.

### **Skin:**

Protective gloves should be worn as required for welding, burning or handling operations. If material is supplied with oil or other organic coating, wear protective gloves. However, do not continue to use gloves or work clothing that have become saturated with oil. Wash hands and any additional contact areas with soap and water or waterless hand cleaner.

### **Eyes:**

Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.

### **Ventilation:**

Local exhaust ventilation should be provided when welding, burning, sawing, brazing, grinding or machining to prevent excessive dust or fume exposure.

### **Other Equipment::**

Depending on the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposure.

## SECTION 7 - SPECIAL PRECAUTIONS, SPILL/LEAK & FIREFIGHTING PROCEDURES

### **Special Precautions:**

Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dust.

### **Unusual Fire and Explosion Hazards:**

Not flammable or combustible. Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other materials.

### **Special Fire Fighting Procedures:**

No special fire fighting procedures are required.

### **Spill/Leak Procedures:**

Spill or leak procedures are not applicable to metals in the solid state. Product must be disposed of in accordance with state and local regulations.

This Material Safety Data Sheet (MSDS) was prepared in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Supplier Notification Requirements of SARA Title III, Section 313. This MSDS represents products which may contain toxic chemicals. The information contained in this MSDS was obtained from sources which are believed to be reliable by Steelscape. However the information is provided without any responsibility or warranty, expressed or implied regarding it's accuracy or correctness. The conditions or methods of handling, storage, use and disposal of TruZinc Steel are beyond the knowledge of Steelscape. For this and other reasons, Steelscape does not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of TruZinc Steel.

**WARNING:** This product contains chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm.



