Material Safety Data Sheet

24 Hour Emergency Phone Numbers:
Medical: 1-800-327-3874
1-513-558-5111
Transportation:
1-800-535-5053
1-352-323-3500

NOTE: National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

IMPORTANT: Provide this information to employees, customers, and users of this product. Read this MSDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this MSDS are further described in Section 16.

Section 1 - Chemical Product / Company Information

This Material Safety Data Sheet is available in Canadian French and Hispanic American Spanish upon request.
Esta hoja de datos de la seguridad de los materiales está disponible en francés canadiense y en español a su solicitud.
Los Datos de Serguridad del Producto pueden obtenerse en Espanol si lo riquiere.

Product Name: KWIK-SEAL TUB & TILE CLEAR
Product UPC Number: 18008 18016 35030 35032 71055
Product Use/Class: Latex Caulk
Manufacturer: **DAP Inc.**
2400 Boston Street Suite 200
Baltimore, MD 21224-4723
888-327-8477 (non-emergency matters)

Revision Date: 05/31/2005
Supercedes: 01/05/2000
MSDS Number: 00010019001

Section 2 - Composition / Information On Ingredients

Chemical Name	CASRN	WT%	ACGIH TWA	ACGIH STEL	ACGIH CEIL	OSHA TWA	OSHA STEL	OSHA CEIL	Skin
Ethylene glycol	107-21-1	1-5	N.E.	N.E.	100 MGM3	N.E.	N.E.	N.E.	No
Amorphous silica	112945-52-5	1-5	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.	No
Ammonia	7664-41-7	0.1-1.0	25 PPM	35 PPM	N.E.	50 PPM	N.E.	N.E.	No
Gamma-aminopropyltriethoxysila	919-30-2	0.1-1.0	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.	No
Formaldehyde	50-00-0	<0.06	N.E.	N.E.	0.3 PPM	0.75 PPM	2 PPM	N.E.	No
Acetaldehyde	75-07-0	<0.004	N.E.	N.E.	25 PPM	200 PPM	N.E.	N.E.	No
Ethyl acrylate	140-88-5	<0.0002	5 PPM	15 PPM	N.E.	25 PPM	N.E.	N.E.	Yes

Exposure Notes:

50-00-0 Formaldehyde is a specially regulated substance for which an OSHA chemical-specific exposure standard exits. Detailed information regarding this substance may be found in 29 CFR 1910.1048. Medical surveillance information regarding this substance may be found in Appendix C to 29 CFR 1910.1048.

Important: Listed Permissible Exposure Levels (PEL) are from the U.S. Dept. of Labor OSHA Final Rule Limits (CFR 29 1910.1000); these limits may vary between states.

Note: An employee's skin exposure to substances having a "YES" in the "SKIN" column in the table above shall be prevented or reduced to the extent necessary under the circumstances through the use of gloves, coveralls, goggles or other appropriate personal protective equipment, engineering controls or work practices

Section 3 - Hazards Identification

Emergency Overview: A clear paste with a very slight ammonia odor. WARNING! Harmful if swallowed or absorbed through the skin. May cause eye or skin irritation. May cause eye, skin, nose, throat and respiratory tract irritation. This product contains ethylene glycol.

Refer to other MSDS sections for other detailed information.

Effects Of Overexposure - Eye Contact: May cause eye irritation.

Effects Of Overexposure - Skin Contact: Harmful if absorbed through the skin. Prolonged or repeated contact with skin may cause irritation.

Effects Of Overexposure - Inhalation: Harmful if inhaled. Inhalation may cause irritation to the respiratory tract (nose, mouth, mucous membranes). Prolonged, repeated, or high exposures may cause weakness and depression of the central nervous system.

Effects Of Overexposure - Ingestion: Harmful or fatal if swallowed. If ingested, may cause vomiting, diarrhea, and depressed respiration. Ingestion of ethylene glycol can cause gastrointestinal irritation, nausea, vomiting, diarrhea and if ingested in sufficient quantities, death.

Effects Of Overexposure - Chronic Hazards: Prolonged and repeated skin contact may cause irritation and possibly dermatitis. Repeated or prolonged exposure may cause respiratory system damage.

Overexposure may cause kidney, cardiovascular, skin and liver damage.

Formaldehyde vapor is a known animal carcinogen according to OSHA and NTP and is considered possibly carcinogenic to humans by inhalation. The International Agency for Research on Cancer considers formaldehyde to be a human carcinogen.

Ethylene Glycol may cause kidney and liver damage upon prolonged and repeated overexposures. Studies have shown that repeated inhalation of ethylene glycol has produced adverse cardiovascular changes in laboratory animals. Ethylene glycol has been shown to cause birth defects in laboratory animals.

Primary Route(s) Of Entry: Skin Contact, Inhalation, Eye Contact

Medical Conditions which May be Aggravated by Exposure: None known.

Section 4 - First Aid Measures

First Aid - Eye Contact: In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

First Aid - Skin Contact: Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical aid if symptoms persist. Remove and wash contaminated clothing. If skin irritation persists, call a physician.

First Aid - Inhalation: If inhaled, remove to fresh air. If breathing is difficult, leave the area to obtain fresh air. If continued breathing difficulty is experienced, get medical attention immediately.

First Aid - Ingestion: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately.

Note to Physician: None.

COMMENTS: Call Medical Emergency at 1-800-327-3874 if any irritation or complication arises from any of the above routes of entry.

Section 5 - Fire Fighting Measures

Flash Point, F: > 200 F
Method: (Seta Closed Cup)

Lower Explosive Limit, %: Not Established
Upper Explosive Limit, %: Not Established

Extinguishing Media: Carbon Dioxide, Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: No special protective measures against fire required.

Special Firefighting Procedures: Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Wear proper protective equipment as specified in Section 8. Use absorbent material or scrape up dried material and place in container.

Section 7 - Handling And Storage

Handling: KEEP OUT OF REACH OF CHILDREN! DO NOT TAKE INTERNALLY. Do not breathe vapors. Use only with adequate ventilation. Wash thoroughly after handling. Avoid breathing vapor and contact with eyes, skin and clothing. Open all windows and doors or use other means to ensure cross-ventilation and fresh air entry during application and drying. Odor is not an adequate warning for hazardous conditions.

Storage: Close container after each use. Store containers away from excessive heat and freezing. Store away from caustics and oxidizers. Do not store at temperatures above 120 degrees F.

Section 8 - Exposure Controls / Personal Protection

Precautionary Measures: Please refer to other sections and subsections of this MSDS.

Engineering Controls: Good general ventilation should be sufficient to control airborne levels. Ensure adequate ventilation, especially in confined areas. Local ventilation of emission sources may be necessary to maintain ambient concentrations below recommended exposure limits.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH-approved air purifying respirator with an organic vapor cartridge or canister may be necessary under certain circumstances where airborne concentrations are expected to exceed exposure limits. A respiratory protection program that meets the OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin Protection: Rubber gloves.

Eye Protection: Goggles or safety glasses with side shields.

Other protective equipment: Not required under normal use.

Hygienic Practices: Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use.

Section 9 - Physical And Chemical Properties

Boiling Range:	210 - 220 F	**Vapor Density:**	Heavier Than Air
Odor:	Very Slight Ammonia	**Odor Threshold:**	Not Established
Appearance:	Clear	**Evaporation Rate:**	Slower Than n-Butyl Acetate
Solubility in H2O:	Not Established	**Specific Gravity:**	1.063
Freeze Point:	Not Established	**pH:**	Between 7.0 and 12.0
Vapor Pressure:	Not Established	**Viscosity:**	Not Established
Physical State:	Paste		

When reported, vapor pressure of this product has been calculated theoretically based on its constituent makeup and has not been determined experimentally.

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Excessive heat and freezing.

Incompatibility: Incompatible with strong bases and oxidizing agents.

Hazardous Decomposition Products: Normal decomposition products, i.e., COx, NOx.

Hazardous Polymerization: Hazardous polymerization will not occur under normal conditions.

Stability: Stable under recommended storage conditions.

Section 11 - Toxicological Information

Product LD50: Not Established

Product LC50: Not Established

CASRN	Chemical Name	LD50	LC50	WT%
107-21-1	Ethylene glycol	Rat:4700 mg/kg	Rat:10876 mg/kg	1-5
112945-52-5	Amorphous silica	Rat:3160 mg/kg	----------	1-5
7664-41-7	Ammonia	----------	Rat:2000 ppm/4H	0.1-1.0
50-00-0	Formaldehyde	----------	Rat:203 mg/m3	<0.06
75-07-0	Acetaldehyde	----------	Rat:13300 ppm/4H	<0.004
140-88-5	Ethyl acrylate	----------	Rat:1414 ppm/4H	<0.0002

Carcinogenicity:

CAS No.	Chemical Name	ACGIH	OSHA	IARC	NTP	WT%
50-00-0	Formaldehyde	Suspected human carcinogen.	Potential cancer hazard.	Human carcinogen.	Anticipated carcinogen.	<0.06
75-07-0	Acetaldehyde	Confirmed animal carcinogen with unknown relevance to humans.	-----	Possible carcinogen.	Anticipated carcinogen.	<0.004
140-88-5	Ethyl acrylate	-----	-----	Possible carcinogen.	-----	<0.0002

Significant Data with Possible Relevance to Humans: This product contains trace amounts of free formaldehyde. OSHA and NTP identify formaldehyde as a potential carcinogen. IARC identifies formaldehyde as a human carcinogen. Formaldehyde has been shown to cause mutations in a variety of in-vitro test systems, the significance of which to humans is unknown. In a two-year inhalation study, rats showed carcinogenic effects in the respiratory system at 15 ppm of formaldehyde. There should be minimal risk when used with ventilation adequate to keep the atmospheric concentration of formaldehyde below the recommended exposure limits. Maintain adequate ventilation to prevent exposure above current OSHA / ACGIH exposure limits. Workplace monitoring of the air to define formaldehyde exposure levels may be necessary.

Section 12 - Ecological Information

Ecological Information: Ecological injuries are not known or expected under normal use.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance with all federal, state and local regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste.

EPA Waste Code if Discarded (40 CFR Section 261): This product does not meet the definition of a hazardous waste according to U.S. EPA Hazardous Waste Management Regulation, 40 CFR Section 261.

Section 14 - Transportation Information

DOT Proper Shipping Name:	Not Regulated	**Packing Group:**	N.A.
DOT Technical Name:	N.A.	**Hazard Subclass:**	N.A.
DOT Hazard Class:	N.A.	**DOT UN/NA Number:**	N.A.

Note: The shipping information provided is applicable for domestic ground transport only. Different categorization may apply if shipped via other modes of transportation and/or to non-domestic destinations.

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category:

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Immediate Health Hazard, Chronic Health Hazard

SARA Section 313:

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

Chemical Name	CAS Number	WT%
Ethylene glycol	107-21-1	1-5

Toxic Substances Control Act:

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.

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

None

U.S. State Regulations

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product:

Chemical Name	CAS Number	WT%
Proprietary Acrylic Polymer	Proprietary	30-60
Water	7732-18-5	30-60
White mineral oil	8042-47-5	7-13

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%:

Chemical Name	CAS Number	WT%
Proprietary Acrylic Polymer	Proprietary	30-60
Water	7732-18-5	30-60
White mineral oil	8042-47-5	7-13

California Proposition 65:

Warning: The following ingredients present in the product are known to the State of California to cause cancer:

Chemical Name	CAS Number	Definition	Date Listed	WT%
Formaldehyde	50-00-0	Carcinogenic.	Listed: January 1, 1988	<0.06
Acetaldehyde	75-07-0	Carcinogenic.	Listed: April 1, 1988	<0.004
Ethyl acrylate	140-88-5	Carcinogenic.	Listed: July 1, 1989	<0.0002

Warning: The following ingredients present in the product are known to the State of California to cause birth defects or other reproductive harm:

None

Section 16 - Other Information

HMIS Ratings:

Health: 1 Flammability: 1 Reactivity: 0 Personal Protection: X

VOLATILE ORGANIC COMPOUNDS, GR/LTR: 44.1 LB/GAL: 0.4 WT%: 2.372

REASON FOR REVISION: Periodic Update

Legend:

N.A. – Not Applicable

N.E. – Not Established

N.D. – Not Determined

VOC – Volatile Organic Compound

ACGIH – American Conference of Governmental Industrial Hygienists

SARA – Superfund Amendments and Reauthorization Act of 1986

NJRTK – New Jersey Right-to-Know Law

OSHA – Occupational Safety and Health Administration

PEL – Permissible Exposure Limit	HMIS – Hazardous Materials Identification System
TLV – Threshold Limit Value	NTP – National Toxicology Program
STEL – Short Term Exposure Limit	CEIL – Ceiling Exposure Limit
LD50 – Lethal Dose 50	LC50 – Lethal Concentration 50
F – Degree Fahrenheit	C – Degree Celsius
MSDS – Material Safety Data Sheet	CASRN – The Chemical Abstracts Service Registry Number

DAP believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. **NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS.** Since this document is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

<End of MSDS>

FACTS[SM] faxed FAST!

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 # 24

Pro Poxy 20

HERCULES®

MATERIAL SAFETY INFORMATION SERVICE

Date Prepared: 1/28/1987 **Last Reviewed:** 8/18/2009

Meets OSHA 29 CFR 1910.1200

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
Diglycidyl ethers of bisphenol A CAS # 25036-25-3	N/A	N/A		- -
2,4,6, Tri (Dimethylaminomethyl) Phenol (90-72-2)	N/A	5PPM	N/A	- -
Epoxy Resin (Diglycidyl Ether of Bisphenol A) (25068-38-6)	N/A	N/A	N/A	
Zinc Sulfide CAS 1314-98-3	5mg/m3	5mg/m3		

HMIS Hazard Rating: Health: 1 Flammability: 0 Reactivity: 0 Personal Protection: B

Section 3 - Physical/Chemical Characteristics

Boiling Point (°F):	Specific Gravity (H2O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
N/A	1.97	N/A	N/A

Melting Point (° F):	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:	VOC Level:
N/A		Not soluble	<0.1%

Appearance And Color: 2 components in mastic form: Off-white gray/black

Odor: Mercaptan odor

Section 4 - Fire And Explosion Hazard Data

Flash Point:	Flammable Limits:	LEL:	UEL:
>140°F Method: N/A		N/A	N/A

Extinguishing Media: Water fog, foam, CO2, and dry chemical.

Special Firefighting Procedures:
Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH approved, positive pressure self contained breathing apparatus (SCBA) and full protective clothing.

Unusual Fire And Explosion Hazards:
None

Continued on Next Page

Section 5 - Reactivity Data

Stability: Stable **Conditions To Avoid:** None

Incompatability (Materials To Avoid): None

Hazardous Decomposition: Carbon monoxide, aldehydes, acids, oxides of sulfur and nitrogen may be formed.

Hazardous Polymerization: Will Not Occur

Section 6 - Health Hazard Data

Routes of Entry: **Inhalation** N/A **Skin** YES/Secondary **Ingestion** YES/Secondary

Health Hazards:

None known

Carcinogenicity: **NTP** NO **IARC** NO **OSHA Regulated** NO

Signs And Symptoms of Exposure:

EYE: May cause moderate eye irritation.
SKIN: Prolonged and repeated contact may cause skin irritation with local redness.
INGESTION: Very low toxicity if swallowed.
INHALATION: N/A

Medical Conditions Generally Aggravated By Exposure:

None

Emergency And First Aid Procedures:

SKIN CONTACT: After using, wash hands with soap and water. EYE CONTACT: Flush with water for 15 minutes. Get medical attention. INGESTION: No emergency medical treatment necessary.

Continued on Next Page

Section 7 - Precautions For Safe Handling And Use:

Steps To Be Taken In Case Material Is Released Or Spilled:

Sweep up in normal manner

Waste Disposal Method:

Non-hazardous landfill

Precautions To Be Taken In Handling And Storing:

None

Other Precautions:

Store in cool, dry, well-ventilated area.

Section 8 - Control Measures:

Respiratory Protection:

N/A

Ventilation: **Local Exhaust** Adequate **Special** N/A
Mechanical N/A **Other** N/A

Gloves: Polyethylene gloves for prolonged use.

Eye Protection: Safety glasses or goggles

Other Protective Clothing: None required

Work/Hygienic Practices Wash thoroughly with warm water and soap after handling.

Additional Information:

FACTS faxed FAST!℠

OSHA-Required Health And Safety Information!

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Section 1

MATERIAL SAFETY DATA SHEET # 68

Johni Ring®+ Wax Gasket

HERCULES®

MATERIAL SAFETY INFORMATION SERVICE

Date Prepared: 1/28/1987 **Last Reviewed:** 6/22/2010

Meets OSHA 29 CFR 1910.1200

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 defined as an "article" and is not classified as hazardous in accordance with OSHA 1910.1200				

HMIS Hazard Rating: Health: 0 Flammability: 1 Reactivity: 0 Personal Protection: A

Section 3 - Physical/Chemical Characteristics

Boiling Point (°F):		Specific Gravity (H2O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
N/A		.82 to .86	N/A	0.01
Melting Point (° F):	**Evaporation Rate: (Butyl Acetate = 1)**	**Solubility in Water:**		
140° to 170° F	N/A	Insoluble	**VOC Level:**	0 g/l

Appearance And Color: Soft amber to brown color **Odor:** No odor

Section 4 - Fire And Explosion Hazard Data

Flash Point:	Flammable Limits:	LEL:	UEL:
450° F to 550° F	N/D	N/A	N/A

Extinguishing Media: Use water fog, foam, dry chemical, or CO2. Do not use a direct stream of water.

Special Firefighting Procedures:
When handling wax fires do not enter confined space without proper protective equipment. Cool fire exposed containers with water.

Unusual Fire And Explosion Hazards:
When heated above its flash point can release flammable vapors which can burn or be explosive in confined spaces if exposed to sources of ignition.

Continued on Next Page

Section 5 - Reactivity Data

Stability: Stable **Conditions To Avoid:** High heat temperatures over 160° F

Incompatability (Materials To Avoid): Avoid strong oxidants

Hazardous Decomposition: CO and CO2 and unidentified organic compounds may be formed during combustion.

Hazardous Polymerization: Will Not Occur

Section 6 - Health Hazard Data

Routes of Entry: **Inhalation** N/A **Skin** YES/Secondary **Ingestion** YES/Secondary

Health Hazards:

None known

Carcinogenicity: **NTP** NO **IARC** NO **OSHA Regulated** NO

Signs And Symptoms of Exposure:

None

Medical Conditions Generally Aggravated By Exposure:

None

Emergency And First Aid Procedures:

SKIN: Wash with soap and water. EYES: As with all foreign material, flush eyes with water. If irritation occurs, consult a physician. INGESTION: No significant adverse health effects are expected. Consult a physician if large quantities are ingested.

Continued on Next Page

Section 7 - Precautions For Safe Handling And Use:

Steps To Be Taken In Case Material Is Released Or Spilled:

Sweep up spilled material in containers for disposal.

Waste Disposal Method:

Non-hazardous landfill.

Precautions To Be Taken In Handling And Storing:

Do not store over 110° F to prevent the rings from melting or deforming in shape.

Other Precautions:

None

Section 8 - Control Measures:

Respiratory Protection:

Not required

Ventilation: **Local Exhaust** Adequate
Mechanical N/A
Special N/A
Other: N/A

Gloves: Not required

Eye Protection: Safety glasses

Other Protective Clothing: None

Work/Hygienic Practices None

SAFETY DATA SHEET

Section 1: Product and Company Identification

Product Name: Slic-Tite® Paste with PTFE

Product Code: 41209, 42009, 41219, 42019, 42012, 42029, 42013, 42049, 42014, 42015, 42069

Product Use: Heavy-duty thread sealant.

Manufacturer: LA-CO Industries, Inc.
1201 Pratt Boulevard
Elk Grove Village, IL.
60007-5746
E-mail Contact: customer_service@laco.com

Phone Number: (847) 956-7600
Fax: (847) 956-9885

24-hour Emergency: **CHEMTREC: (800) 424-9300**

Section 2: Hazards Identification

Protective Clothing	NFPA Rating (USA)	EC Classification	WHMIS (Canada)	Transportation
Not Required for Normal Use		Not Classified as Dangerous	Not Controlled	Not Regulated

Emergency Overview: Exposure to hazardous or dangerous substances is not expected when handling this product for its intended use. Extreme heating (>300°C) or during a fire may generate dense smoke, irritating and toxic fumes.

Appearance, Color and Odor: Viscous paste; white; grease-like odor.

USA: This product is not a hazardous material as defined by 29 CFR1910.1200, OSHA Hazard Communication Standard.

Canada: This is not a controlled product under WHMIS.

European Communities (EC): This product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

While this product is not considered hazardous, this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Potential Health Effects: **ACUTE (short term): see Section 8 for exposure controls**

Relevant Route(s) of Exposure: Skin contact.

Inhalation: Inhalation is not expected with normal use.

Extreme heating (>300°C) of the product can release irritating vapors. Symptoms of irritation include coughing, sneezing, nasal discharge, headache, hoarseness and pain in the upper respiratory tract.
Products of thermal decomposition of fluorocarbon monomers and polymers can produce a condition known as "polymer-fume fever"; the symptoms are flu-like (chills, headache and fever) with chest tightness and mild cough; onset of symptoms may be delayed.

Ingestion: Not an applicable route of occupational exposure. Components of the product have low oral toxicity.

Skin: No health effects expected with normal use of the product.

Eye: Direct eye contact may cause temporary irritation as a foreign object in the eye. Symptoms of irritation include redness, swelling, pain and blurred or hazy vision.

SAFETY DATA SHEET

Section 2: Hazards Identification, continued

CHRONIC (long term): see Section 11 for additional toxicological data

Prolonged or repeated skin contact may cause dermatitis in some individuals.

Medical Conditions Aggravated by Exposure: Skin contact may aggravate an existing dermatitis.

Interactions With Other Chemicals: Cigarette smoking is a common means of creating exposure to the products of decomposition of fluorocarbon monomers and polymers. Fluorocarbons may be deposited on cigarettes from the air or from workers' fingers. As a cigarette is smoked, fluorocarbons are then burned and the products of decomposition are inhaled with the cigarette smoke.

Potential Environmental Effects: Not available

Section 3: Composition / Information on Ingredients

Hazardous Ingredients:

Chemical Name	CAS No.	Wt.%	EINECS / ELINCS	Symbol	Risk Phrases
Ethanol	64-17-5	0.1 - 0.5	200-578-6	F	R11
Distillates (petroleum), hydrotreated light naphthenic	64742-53-6	10 - 30	265-156-6	Not applicable contains <3% DMSO extract by IP 346	
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	10 - 30	265-155-0	Not applicable contains <3% DMSO extract by IP 346	
PTFE	9002-84-0	15 - 40	Polymer not listed Monomer is listed 204-126-9	None*	None

* This chemical substance is not classified in the Annex I of Directive 67/548/EEC.
Note: See Section 16 for the full text of the R-phrases above.

Section 4: First Aid Measures

Inhalation: If symptoms are experienced remove source of contamination or move victim to fresh air and obtain medical advice.

Eye Contact: No effects expected. If irritation occurs, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes. If irritation persists, obtain medical advice.

Skin Contact: No health effects expected. If irritation does occur, flush with lukewarm, gently flowing water for 5 minutes. If irritation persists, obtain medical advice.

Ingestion: If irritation or discomfort occurs, obtain medical advice immediately.

Section 5: Fire Fighting Measures

Flammable Properties: The paste can burn if involved in a fire but does not ignite readily.

Suitable extinguishing Media: Use extinguishing media appropriate for the surrounding fire.

Unsuitable extinguishing Media: Not available

Explosion Data:
Sensitivity to Mechanical Impact: Not applicable

Sensitivity to Static Discharge: Not applicable

Specific Hazards arising from the Chemical: During a fire, products of combustion may include Hydrogen fluoride, Perfluoro- carbon olefins and oxides of carbon.

SAFETY DATA SHEET

Section 5: Fire Fighting Measures, continued

Protective Equipment and precautions for firefighters: Self-contained breathing apparatus and protective clothing should be worn. Remove all unprotected personnel.

NFPA

Health: 1
Flammability: 1
Instability: 0

Section 6: Accidental Release Measures

Personal Precautions: Wear adequate personal protective equipment as indicated in Section 8.

Environmental Precautions: Minimize entry of material into sewers and drainage systems.

Methods for Containment: Contain spill immediately.

Methods for Clean-up: Scrape or scoop product for re-use or place in a secure container for disposal.

Section 7: Handling and Storage

Handling: Wash hands thoroughly with detergent and water after handling, before eating, drinking, smoking or using the toilet. Remove contaminated clothing and wash before reuse. Keep out of reach of children.

Storage: Store in a cool, dry area, out of direct sunlight and away from heat, flames and ignition sources. Keep containers closed when not in use.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines

Some component substances in this preparation have Occupational Exposure Limits/Guidelines. Exposure to airborne component substances is not expected with anticipated use. Consult local authorities for acceptable exposure limits.

Exposure Controls

Engineering Controls: Not required for normal use.

Personal Protection:

Eye/Face Protection: Not required for normal use.

Skin Protection: Not required for normal use.

Respiratory Protection: Not required for normal use.

General Hygiene Measures: Avoid breathing fumes generated from heated product. Do not eat, drink or smoke in work areas. Wash hands after handling this product.

SAFETY DATA SHEET

Section 9: Physical and Chemical Properties

Physical State:	Solid	**Flash Point & method:**	150°C (300°F)
Appearance, Color and Odor:	Viscous paste; white; grease-like odor.	**Autoignition Temperature:**	Not available
Odor Threshold:	Not available	**Flammability Limits in Air:**	Not available
pH:	Not applicable	**Vapor Pressure:**	Not applicable
Specific Gravity: (water = 1)	1.48 (12.35 lbs/gal.)	**Vapor Density: (Air = 1)**	Not applicable
Partition coefficient: (n-octanol/water)	<1	**Evaporation Rate: (n-Butyl Acetate = 1)**	Not applicable
Solubility:	Insoluble in water.	**Boiling Point/Range:**	177°C (350°F)
Viscosity:	Not applicable	**Melting Point:**	Not available
Decomposition Temperature:	Not available	**VOC Content:**	0% w/w

Section 10: Stability and Reactivity

Chemical Stability: Stable at normal room temperature.

Conditions to Avoid: Avoid extreme heat and open flames.

Incompatible Materials: Incompatible with strong oxidizers, strong acids, strong bases, aromatic solvents, chlorinated solvents.

Hazardous Decomposition Products: When heated to decomposition (>300°C) this material may release carbonyl fluoride, hydrogen fluoride, perfluoroisobutylene (PFIB) and other irritating and toxic vapors or particulates.

Possibility of Hazardous Reactions: Not available

Section 11: Toxicological Information

Acute Toxicity Data

	LD_{50} Oral (mg/kg)	LD_{50} Dermal (mg/kg)	LC_{50} Inhalation (4 hrs.)
Ethanol	1 501 (rat)	Not available	124.7 mg/L (rat)
Distillates (petroleum), hydrotreated light naphthenic	>5 000 (rat)	>2 000 (rabbit)	2.18 mg/L (rat)
Distillates (petroleum), hydrotreated heavy naphthenic	>5 000 (rat)	>2 000 (rabbit)	Not available
PTFE	Not available	Not available	Not available

SAFETY DATA SHEET

Section 11: Toxicological Information (continued)

Chronic Toxicity Data

Carcinogenicity: Distillates (petroleum) have less than 3% DMSO extract as measured by IP 346. This product is not required to be labeled according to the European Directive 67/548/EEC.
Contains Titanium dioxide (IARC 2B); titanium dioxide is inextricably bound and, under normal conditions of use or during foreseeable emergencies, cannot become airborne and result in worker exposure.

ACGIH A4, Not classifiable as a human carcinogen.
Group 3 – The agent is not classifiable as to its carcinogenicity in humans.

	ACGIH	IARC	NTP
Ethanol	A4	Not applicable	Not applicable
Distillates (petroleum), hydrotreated light naphthenic	Not listed	Group 3	Not listed
Distillates (petroleum), hydrotreated heavy naphthenic	Not listed	Not listed	Not listed
PTFE	Not listed	Group 3	Not listed

ACGIH: (American Conference of Governmental Industrial Hygienists)
IARC: (International Agency for Research on Cancer)
NTP: (National Toxicology Program)

Irritation: Normal use will not result in harmful effects.

Corrosivity: Not available

Sensitization: Not applicable with normal use.

Neurological Effects: Not applicable with normal use.

Genetic Effects: Not available

Reproductive Effects: Not applicable with normal use.

Developmental Effects: Not applicable with normal use.

Target Organ Effects: Not available

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity is expected to be low due to the product's insolubility in water.

Persistence/Degradability: Product is not readily biodegradeable.

Bioaccumulation/Accumulation: Not available

Mobility: Not available

Section 13: Disposal Considerations

Waste Disposal Method: Do NOT discard into any sewers, on the ground or into any body of water. Store material for disposal as indicated in Section 7 Handling and Storage.
The conditions of use, storage and disposal of this product are beyond our control and may be beyond our knowledge. For this and other reasons, LA-CO Industries, Inc. 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 this product.

SAFETY DATA SHEET

Section 14: Transport Information:

U.S. Hazardous Materials Regulation (DOT 49CFR):	Not regulated as a dangerous good for transport.
Canadian Transportation of Dangerous Goods (TDG):	Not regulated as a dangerous good for transport.
ADR/RID:	Not regulated as a dangerous good for transport.
IMDG:	Not regulated as a dangerous good for transport.
Marine Pollutants:	Not applicable
ICAO/IATA:	Not regulated as a dangerous good for transport.

Section 15: Regulatory Information

USA

TSCA Status: All ingredients in the product are listed on the TSCA inventory.

SARA Title III

Sec. 302/304:	None
Sec: 311/312:	Not applicable
Sec. 313:	Not applicable
CERCLA RQ:	Not applicable

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

State Right-to-Know Lists : Massachusetts, New Jersey, Pennsylvania; Distillates (petroleum), hydrotreated naphthenic, Ethanol, 12-hydroxy lithium stearate, Titanium dioxide, BHT.

Canada

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

WHMIS Classification: (for workplace exposures) Not controlled

New Substance Notification Regulations: All ingredients in the product are listed, as required, on Canada's Domestic Substances List (DSL).

NPRI Substances: Not applicable

EC Classification for the Substance/Preparation

Symbol: This product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

SAFETY DATA SHEET

Section 16: Other Information

Full Text of R-phrases appearing in Section 2:	R11: Highly flammable.
Preparation Information:	
Revision Date:	August 11, 2011
Revision Summary:	Review of regulatory, hazard classification, exposure limit and toxicology data. No revisions to data.
Manufacturer Disclaimer:	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.
Prepared by:	LEHDER Environmental Services Limited (519) 336-4101 www.lehder.com
Disclaimer:	While LEHDER Environmental Services Limited believes that the data set forth herein is accurate, as of the date hereof, LEHDER makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data is offered solely for your consideration, investigation and verification.

MATERIAL SAFETY DATA SHEET

B71W111
16 00

DATE OF PREPARATION
Jul 21, 2011

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
B71W111

PRODUCT NAME
PRO INDUSTRIAL™ Hi-Bild Waterbased Catalyzed Epoxy (Part A), Extra White / Tint Base

MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	www.sherwin-williams.com
Regulatory Information	(216) 566-2902 www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
0.3	100-41-4	**Ethylbenzene**		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
1	1330-20-7	**Xylene**		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
2	123-42-2	**Diacetone Alcohol**		
		ACGIH TLV	50 PPM	1.2 mm
		OSHA PEL	50 PPM	
4	2807-30-9	**2-Propoxyethanol**		
		ACGIH TLV	Not Available	1.3 mm
		OSHA PEL	Not Available	
2	121-44-8	**Triethylamine**		
		ACGIH TLV	1 ppm (Skin)	54 mm
		ACGIH TLV	3 ppm (Skin) STEL	
		OSHA PEL	25 ppm (Skin)	
		OSHA PEL	100 ppm (Skin) STEL	
2	112926-00-8	**Amorphous Precipitated Silica**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	6 mg/m3 as Dust	
16	13463-67-7	**Titanium Dioxide**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	3*
Flammability	0
Reactivity	0

EFFECTS OF OVEREXPOSURE

EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

In a confined area vapors in high concentration may cause headache, nausea or dizziness.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
Not Applicable	N.A.	N.A.	Not Applicable

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Alcohol Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY

Not Applicable

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.
Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

OTHER PRECAUTIONS

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	10.66 lb/gal	1277 g/l
SPECIFIC GRAVITY	1.28	
BOILING POINT	185 - 342 °F	85 - 172 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	59%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	
pH	8.5	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

1.86 lb/gal	223 g/l	Less Water and Federally Exempt Solvents
1.03 lb/gal	124 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

TOXICOLOGY DATA

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene			
		LC50 RAT	4HR	Not Available
		LD50 RAT		3500 mg/kg
1330-20-7	Xylene			
		LC50 RAT	4HR	5000 ppm
		LD50 RAT		4300 mg/kg
123-42-2	Diacetone Alcohol			
		LC50 RAT	4HR	Not Available
		LD50 RAT		4000. mg/kg
2807-30-9	2-Propoxyethanol			
		LC50 RAT	4HR	Not Available
		LD50 RAT		3090 mg/kg
121-44-8	Triethylamine			
		LC50 RAT	4HR	Not Available
		LD50 RAT		460 mg/kg
112926-00-8	Amorphous Precipitated Silica			
		LC50 RAT	4HR	Not Available
		LD50 RAT		4999. mg/kg
13463-67-7	Titanium Dioxide			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product is not hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.
Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

Not Regulated for Transportation.

DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

Canada (TDG)

Not Regulated for Transportation.

IMO

Not Regulated for Transportation.

IATA/ICAO

Not Regulated for Transportation.

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.2	
1330-20-7	Xylene	1	
121-44-8	Triethylamine	2	
	Glycol Ethers	4	

CALIFORNIA PROPOSITION 65

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

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

FACTS faxed FAST! SM

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 # 43

Hercules Clear Cutting Oil

HERCULES® MATERIAL SAFETY INFORMATION SERVICE

Date Prepared: 6/25/1990 **Last Reviewed:** 3/15/2011

Meets OSHA 29 CFR 1910.1200

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
Petroleum-based lubricating oils (64742-52-5)	5mg/M³	5mg/M³(as oil mist)	N/A	--
Petroleum-based lubricating oils (64742-53-6)	5mg/M³(as oil mist)	5mg/M³(as oil mist)	N/A	

HMIS Hazard Rating: 1 1 0 A

Section 3 - Physical/Chemical Characteristics

Boiling Point (°F):	Specific Gravity (H2O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
465-900° F	At 25° C .906	>8	At 38° C (100° F) < 0.1

Melting Point (° F)	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:	VOC Level (g/L):
N/A	<1.0	Soluble	11

Appearance And Color: Light Amber Liquid **Odor:** Petroleum Odor

Section 4 - Fire And Explosion Hazard Data

Flash Point:	Flammable Limits:	LEL:	UEL:
320° F (COC)	N/A	1%	6%

Extinguishing Media: Dry chemical, CO2, Foam. Use water to keep fire-exposed containers cool.

Special Firefighting Procedures:
Recommend supplied air breathing gear when fire fighting in confined spaces. Minimize breathing gases, vapor, fumes, or decomposition products. Water froth may be used to flush spills away from exposure.

Unusual Fire And Explosion Hazards:
None

Continued on Next Page

Section 5 - Reactivity Data

Stability: Stable **Conditions To Avoid:** Open flames, sparks, ignition sources.

Incompatability (Materials To Avoid): Strong oxidizers such as liquid chlorine, sodium or calcium hypochlorite, and pure oxygen.

Hazardous Decomposition: Carbon monoxide, oxides of sulfur and other decomposition products may form upon incomplete combustion.

Hazardous Polymerization: Will Not Occur

Section 6 - Health Hazard Data

Routes of Entry: **Inhalation** YES/Primary **Skin** YES/Primary **Ingestion** YES/Secondary

Health Hazards:

Product has a low order of oral and dermal toxicity. Possible aspiration hazard. Induced vomiting may cause aspiration of product into lungs.

Carcinogenicity: **NTP** NO **IARC** NO **OSHA Regulated** NO

Signs And Symptoms of Exposure:

SKIN CONTACT: Moderate irritant and skin defatter. EYE CONTACT: Mild (transient) irritant. Prolonged or repeated skin contact with product tends to remove skin oils possibly leading to irritation and dermatitis; however based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria. VARIABILITY AMONG INDIVIDUALS: Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which vary from person to person. As a precaution, exposure to liquids, vapors, mist or fumes should be minimized.

Medical Conditions Generally Aggravated By Exposure:

None known.

Emergency And First Aid Procedures:

INHALATION: Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from hot product, immediately remove to fresh air if not breathing. Get medical attention. INGESTION: Do not induce vomiting. Get medical attention. SKIN CONTACT: Wash skin thoroughly with soap and water and remove contaminated clothing. EYE CONTACT: Flush with plenty of water for 15 minutes or until irritation subsides. If irritation persists, get medical attention.

Continued on Next Page

Section 7 - Precautions For Safe Handling And Use:

Steps To Be Taken In Case Material Is Released Or Spilled:

Handle as an oil spill. Use oil-absorbing material. Sweep and scoop up and remove. Prevent spread of spill. Keep product from sewers and water courses by diking, etc. Advise authorities if product has entered, or may enter, sewer, water courses, or extensive land areas. Assure conformity with local regulations.

Waste Disposal Method:

Assure conformity with applicable disposal regulations. Dispose of absorbed material at an approved waste disposal site or facility.

Precautions To Be Taken In Handling And Storing:

No special precautions needed normally. However, avoid breathing oil mist and excessive skin contact.

Other Precautions:

None

Section 8 - Control Measures:

Respiratory Protection:

If possibility of oil mists exists, use NIOSH approved mask for oil mists.

Ventilation:	**Local Exhaust**	As needed to maintain compliance with TLV.	**Special**	None
	Mechanical	N/A	**Other**	None

Gloves:	Rubber gloves - Oil resistant.
Eye Protection:	Goggles if oil is being sprayed or splashed.
Other Protective Clothing:	Gloves if prolonged skin contact cannot be avoided.
Work/Hygienic Practices	Wash thoroughly after handling. Minimize breathing of vapor mist, fumes. Remove contaminated clothing, launder or dry clean.

FACTS Faxed FAST! SM

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 # 44

Hercules Dark Cutting Oil

HERCULES® MATERIAL SAFETY INFORMATION SERVICE

Date Prepared: 6/25/1990 **Last Reviewed:** 6/22/2010

Meets OSHA 29 CFR 1910.1200

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
Petroleum-based lubricating oils (64742-52-5)	5 mg/M³	5 mg/M³ (as oil mist)	N/A	--
Petroleum-based lubricating oils (64742-46-7)	5 mg/M³	5 mg/M³	N/A	--

HMIS Hazard Rating: 1 1 0 A

Section 3 - Physical/Chemical Characteristics

Boiling Point (°F):	Specific Gravity (H2O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
465-900° F	At 25° C .906	> 8	At 38° C (100°F) < 0.1

Melting Point (° F):	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:	VOC Level:
N/A	< 1.0	Insoluble	59 g/l

Appearance And Color: Dark Brownish Amber Liquid **Odor:** Petroleum odor

Section 4 - Fire And Explosion Hazard Data

Flash Point:	Flammable Limits:	LEL:	UEL:
320° F (COC)	N/A	1%	6%

Extinguishing Media: Dry chemical, CO2, Foam. Use water to keep fire-exposed containers cool.

Special Firefighting Procedures:
Recommend supplied air breathing gear when fire fighting in confined spaces. Minimize breathing gases, vapor, fumes, or decomposition products. Water froth may be used to flush spills away from exposure

Unusual Fire And Explosion Hazards:
None

Continued on Next Page

Section 5 - Reactivity Data

Stability: Stable **Conditions To Avoid:** Open flames, sparks, ignition sources.

Incompatability (Materials To Avoid): Strong oxidizers such as liquid chlorine, sodium or calcium hypochlorite, and pure oxygen.

Hazardous Decomposition: Carbon monoxide, oxides of sulfur and other decomposition products may form upon incomplete combustion.

Hazardous Polymerization: Will Not Occur

Section 6 - Health Hazard Data

Routes of Entry: **Inhalation** YES/Primary **Skin** YES/Primary **Ingestion** YES/Secondary

Health Hazards:

Product has a low order of oral and dermal toxicity. Possible aspiration hazard. Induced vomiting may cause aspiration of product into lungs.

Carcinogenicity: **NTP** NO **IARC** NO **OSHA Regulated** NO

Signs And Symptoms of Exposure:

SKIN CONTACT: Moderate irritant and skin defatter. EYE CONTACT: Mild (transient) irritant. Prolonged or repeated skin contact with product tends to remove skin oils possibly leading to irritation and dermatitis; however based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria. VARIABILITY AMONG INDIVIDUALS: Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which vary from person to person. As a precaution, exposure to liquids, vapors, mist or fumes should be minimized.

Medical Conditions Generally Aggravated By Exposure:

None known.

Emergency And First Aid Procedures:

INHALATION: Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from hot product, immediately remove to fresh air if not breathing. Get medical attention. INGESTION: Do not induce vomiting. Get medical attention. SKIN CONTACT: Wash skin thoroughly with soap and water and remove contaminated clothing. EYE CONTACT: Flush with plenty of water for 15 minutes or until irritation subsides. If irritation persists, get medical attention.

Continued on Next Page

Section 7 - Precautions For Safe Handling And Use:

Steps To Be Taken In Case Material Is Released Or Spilled:

Handle as an oil spill. Use oil-absorbing material. Sweep and scoop up and remove. Prevent spread of spill. Keep product from sewers and water courses by diking, etc. Advise authorities if product has entered, or may enter, sewer, water courses, or extensive land areas. Assure conformity with local regulations.

Waste Disposal Method:

Assure conformity with applicable disposal regulations. Dispose of absorbed material at an approved waste disposal site or facility.

Precautions To Be Taken In Handling And Storing:

No special precautions needed normally. However, avoid breathing oil mist and excessive skin contact.

Other Precautions:

None

Section 8 - Control Measures:

Respiratory Protection:

If possibility of oil mists exists, use NIOSH approved mask for oil mists.

Ventilation:	**Local Exhaust**	As needed to maintain compliance with TLV	**Special**	None
	Mechanical	N/A	**Other**	N/A

Gloves:	Rubber gloves - Oil resistant.
Eye Protection:	Goggles if oil is being sprayed or splashed.
Other Protective Clothing:	Gloves if prolonged skin contact cannot be avoided.
Work/Hygienic Practices	Wash thoroughly after handling. Minimize breathing of vapor mist, fumes. Remove contaminated clothing, launder or dry clean.

Wheatland *Tube*
JMC STEEL GROUP

SUBMITTAL DATA
Rev. 11/01/10

ASTM A53 TYPE F GRADE A PIPE

SCOPE

Covers black and hot-dipped galvanized furnace-butt welded (continuous welded) Grade A pipe. Pipe is intended for mechanical and pressure applications and is acceptable for ordinary uses in steam, water, gas and air lines. Wheatland ASTM A53 is UL Listed and FM Approved, sizes 1" through 6" nominal, for use in Fire Sprinkler Pipe Applications. Pipe is suitable for welding, threading, grooving and bending. Pipe is not intended for flanging. Produced to ASTM A53/A53M latest revision.

HOT-DIP GALVANIZED

The average weight of zinc coating shall be not less than 1.8 oz. per sq. ft. of surface (inside and outside).

When galvanized pipe is bent or otherwise fabricated to a degree which causes zinc coating to stretch or compress beyond the limit of elasticity, some flaking of the coating may occur.

HYDROSTATIC TESTING

Hydrostatic test pressures for plain-end pipe are indicated below.

NPS	Standard Weight - PSI	Extra Strong Weight - PSI
1/2 through 1	1500	1500
1-1/4 - 1-1/2	2000	2000
2 through 3	2500	2500
3 ½ - 4	2800	2800

END FINISH

Plain End:
NPS 1-1/2 and smaller: unless otherwise specified on order, end finish shall be at the option of the manufacturer.

NPS 2 and larger: STD and Sch 80 weights: ends beveled to angle of 30º, +5º, -0º with a root face of 1/16" +/- 1/32".

Threaded: To ANSI Standard B 1.20.1

Couplings: To ASTM Standard A865.

CHEMICAL REQUIREMENTS

Composition, max. %

Carbon	Manganese	Phosphorus	Sulfur
.30	1.20	.05	.045

*Copper	*Nickel	*Chromium	*Molybdenum	*Vanadium
.40	.40	.40	.15	.08

*The combination of these five elements shall not exceed 1.00%.

TENSILE REQUIREMENTS

Tensile Strength, min.	48 000 psi
Yield Strength, min.	30 000 psi.
Elongation in 2"	Refer to A53 Table x 4.1, latest revision – ASTM A53/A53M

BENDING TEST (COLD) FOR NPS 2 and UNDER:

	Degree of Bend	Diameter of Mandrel
Standard	90º	12 x outside pipe diameter
Close Coiling	90º	8 x outside pipe diameter

FLATTENING TEST - NPS 2-1/2 and Greater

As a test for quality of the weld, position the weld at 90º from the direction of force and flatten until the OD is 3/4 of the original outside diameter. No cracks shall occur along the inside or outside surface of the weld.

DIMENSIONS and WEIGHTS

BLACK PLAIN END					
Nominal Size	OD Inches	Sch. 40		Sch. 80	
		Wall Inches	Weight Lb./Ft.	Wall Inches	Weight Lb./Ft.
1/2"	.840	.109	.85	.147	1.09
3/4"	1.050	.113	1.13	.154	1.48
1"	1.315	.133	1.68	.179	2.17
1-1/4"	1.660	.140	2.27	.191	3.00
1-1/2"	1.900	.145	2.72	.200	3.63
2"	2.375	.154	3.66	.218	5.03
2-1/2"	2.875	.203	5.80	.276	7.67
3"	3.500	.216	7.58	.300	10.26
3-1/2"	4.000	.226	9.12	.318	12.52
4"	4.500	.237	10.80	.337	15.00

PERMISSIBLE VARIATIONS IN WALL THICKNESS

Minimum wall thickness at any point shall not be more than 12.5% under nominal wall thickness specified.

PERMISSIBLE VARIATIONS IN OUTSIDE DIAMETER

NPS	1-1/2 and under	+/- .016"
NPS	2 and over	+/- 1%

PERMISSIBLE VARIATIONS IN WEIGHT PER FOOT

Pipe shall not vary more than +/- 10% from the standard specified.

PRODUCT MARKING

Each length of pipe 1/2 NPS and larger is continuously stenciled to show the manufacturer, the grade of pipe (ASTM A53), the kind of pipe (F for Continuous Weld, A for Grade A,) the size (Sch 80 for extra strong), and length. Stencil markings indicate UL Listing and FM Approval for sizes 1" through 6" nominal for use in Fire Sprinkler Pipe Applications. Bar Coding is acceptable as a supplementary identification method.

WHEATLAND TUBE COMPANY – 700 SOUTH DOCK STREET - SHARON, PA 16146
Phone: 800-257-8182 ► Fax: 724-346-7260 ► EMAIL: info@wheatland.com Made in USA

Material Safety Data Sheet

1 - Chemical Product and Company Identification

Manufacturer: WD-40 Company **Address: 1061 Cudahy Place (92110)** **P.O. Box 80607** **San Diego, California, USA** **92138 –0607** **Telephone:** **Emergency only: 1-888-324-7596 (PROSAR)** **Information: 1-888-324-7596** **Chemical Spills: 1-800-424-9300 (Chemtrec)** **1-703-527-3887 (International Calls)**	**Chemical Name: Organic Mixture** **Trade Name: WD-40 Aerosol** **Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion** **MSDS Date Of Preparation: 3/11/10**

2 – Hazards Identification

Emergency Overview:
DANGER! Flammable aerosol. Contents under pressure. Harmful or fatal if swallowed. If swallowed, may be aspirated and cause lung damage. May cause eye irritation. Avoid eye contact. Use with adequate ventilation. Keep away from heat, sparks and all other sources of ignition.

Symptoms of Overexposure:
Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.
Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.
Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.
Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.
Chronic Effects: None expected.
Medical Conditions Aggravated by Exposure: Preexisting eye, skin and respiratory conditions may be aggravated by exposure.

Suspected Cancer Agent:
Yes No X

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent
Aliphatic Hydrocarbon	64742-47-8	45-50
Petroleum Base Oil	64742-58-1 64742-53-6 64742-56-9 64742-65-0	<25
LVP Aliphatic Hydrocarbon	64742-47-8	12-18
Carbon Dioxide	124-38-9	2-3
Surfactant	Proprietary	<2
Non-Hazardous Ingredients	Mixture	<10

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.
Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.

Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.
Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

5 – Fire Fighting Measures

Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.
Special Fire Fighting Procedures: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.
Unusual Fire and Explosion Hazards: Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back.

6 – Accidental Release Measures

Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area. Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.
Storage: Store in a cool, well-ventilated area, away from incompatible materials Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV 5 mg/m3 TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH)
Surfactant	None Established
Non-Hazardous Ingredients	None Established

The Following Controls are Recommended for Normal Consumer Use of this Product
Engineering Controls: Use in a well-ventilated area.
Personal Protection:
Eye Protection: Avoid eye contact. Always spray away from your face.
Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended
Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

Personal Protection:
Eye Protection: Safety goggles recommended where eye contact is possible.
Skin Protection: Wear chemical resistant gloves.
Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.
Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Boiling Point:	361 - 369°F (183 - 187°C)	Specific Gravity:	0.8 – 0.82 @ 60°F
Solubility in Water:	Insoluble	pH:	Not Applicable
Vapor Pressure:	95-115 PSI @ 70°F	Vapor Density:	Greater than 1
Percent Volatile:	70-75%	VOC:	412 grams/liter (49.5%)
Coefficient of Water/Oil Distribution:	Not Determined	Appearance/Odor	Light amber liquid/mild odor
Flash Point:	122°F (49°C) Tag Open Cup (concentrate)	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8.0%
Pour Point:	-63°C (-81.4°F) ASTM D-97	Kinematic Viscosity:	2.79-2.96cSt @ 100°F

10 – Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Will not occur.
Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.
Incompatibilities: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.
None of the components of this product is listed as a carcinogen or suspected carcinogen or is considered a reproductive hazard.

12 – Ecological Information

No data is currently available.

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description: Consumer Commodity, ORM-D
IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY

15 – Regulatory Information

U.S. Federal Regulations:

CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
SARA TITLE III:
Hazard Category For Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None
Section 302 Extremely Hazardous Substances (TPQ): None
EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.
VOC Regulations: This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.
Canadian Environmental Protection Act: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.
Canadian WHMIS Classification: Class B-5 (Flammable Aerosol)
This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

16 – Other Information:

HMIS Hazard Rating:
Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)

SIGNATURE: Peter P. Lyon TITLE: Director of Global Quality Assurance

REVISION DATE: March 2010 SUPERSEDES: August 2009

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBILMET GAMMA**
Product Description: Base Oil and Additives
Product Code: 665521-00, 971109
Intended Use: Metal processing fluid

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
3225 GALLOWS RD.
FAIRFAX, VA. 22037 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300
ExxonMobil Transportation No.	281-834-3296
Product Technical Information	800-662-4525, 800-947-9147
MSDS Internet Address	http://www.exxon.com, http://www.mobil.com

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
OILS, LARD, ME ESTERS, SULFURIZED	68440-40-4	1 - 5%

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

SECTION 3 HAZARDS IDENTIFICATION

This material may be considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS

This product may be used in certain applications where misting can occur. Excessive exposure to liquids and mists may cause skin and eye irritation. In addition, excessive exposure to mists may cause respiratory irritation and damage and aggravate pre-existing emphysema or asthma. Low order of toxicity. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Sulfur oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >176C (349F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid breathing mists or vapors. Small metal particles from machining may cause abrasion of the skin and may predispose to dermatitis. Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m³ - ACGIH TLV, 10 mg/m³ - ACGIH STEL, 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Particulate air-purifying respirator approved for dust / oil mist is recommended.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended. Chemical type goggles should be worn during misting operations.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid
Color: Brown
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.877
Flash Point [Method]: >176C (349F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316C (600F)
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: >34.2 cSt (34.2 mm2/sec) at 40 C | 5.79 cSt (5.79 mm2/sec) at 100C
Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: 0°C (32°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m3	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.

Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

For the product itself:

Repeated and/or prolonged exposure may cause irritation to the skin, eyes, or respiratory tract. Oil Mist (highly refined oils): Animals exposed to high concentrations of mist developed oil retention, inflammation, and oil granulomas in the respiratory tract. Oils exposed to high temperatures, cracking conditions, or mixing with tramp / used oils may introduce polycyclic aromatic compounds or microbial contaminants that could result in cancer or severe respiratory hazards.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT) : Not Regulated for Land Transport

LAND (TDG) : Not Regulated for Land Transport

SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA) : Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: Under some use conditions, this material may be considered to be hazardous in accordance with OSHA 29 CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: IECSC, DSL, EINECS, KECI, PICCS, TSCA

EPCRA: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The Following Ingredients are Cited on the Lists Below: None.

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
No revision information is available.

PRECAUTIONARY LABEL TEXT:
Caution! Excessive exposure to mist may cause skin and eye irritation. In addition, excessive exposure to mist may cause respiratory irritation and damage, and aggravate pre-existing emphysema and asthma. Use with adequate ventilation. If inhaled and symptoms develop, remove to fresh air and get medical attention.

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Internal Use Only
MHC: 0B, 0B, 0, 0, 0, 0 PPEC: A

DGN: 2010507XUS (1015627)

MATERIAL SAFETY DATA SHEET

SECTION 1:CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: EASE-ON PIPE JOINT LUBRICANT

SEACORD CORPORATION
1700 FEDERAL STREET
CAMDEN, NJ 08105

Emergency Phone #: 856-966-1526 **Information Phone** #:856-966-1526

SECTION II: HAZARDOUS INGREDIENT INFORMATION

Chemical Name	C.A.S. #	OSHA PEL	ACGIH TLV
Contains no hazardous ingredients			

SECTION III: HAZARDS INDENTIFICATION

Emergency Overview: Non-toxic, basically non-hazardous.
Eye Contact: May cause mild irritation.
Skin Contact: May cause mild irritation to persons sensitive to soap products.
Inhalation: Non-hazardous by inhalation.
Ingestion: Unlikely to occur.

SECTION IV: FIRST AID MEASURES

Note to Physician: Treat as soap irritation
Eyes: Flush with water for 5 minutes, if irritation persists get medical aid.
Skin: Wash with soap and water, if irritation persists get medical aid.
Inhalation: Non-hazardous by inhalation.
Ingestion: Seek immediate medical help.

SECTION V: FIREFIGHTING MEASURES

Flash Point: None
Flammable Limits: N/A
Extinguishing Limits: N/A
Firefighting Procedures: N/A

SECTION VI: ACCIDENTAL RELEASE MEASURES

Directions: Pick up with absorbent material and place in appropriate container for disposal. Material is non-hazardous waste.

SECTION VII: HANDLING AND STORAGE

Storage Temperature: Ambient.
Handling: No special handling or storage procedures required.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: None required.
Engineering Controls: None required.
Protective Clothing: None required.
Gloves: Recommended to prevent possible dermal irritation.
Safety Glasses: Recommended to prevent possible eye irritation.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N/A
Melting Point: N/A
Flash Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Specific Gravity: 1.06
Water Solubility: Appreciable
Physical Form: Paste.

SECTION X: STABILITY AND REACTIVITY

Stability: Stable
Hazardous Polymerization: Will not occur.
Conditions to Avoid: None known.
Materials to Avoid: None.
Hazardous Decomposition or By-Products: None known.

SECTION XI:TOXICOLOGICAL INFORMATION

Product is non-toxic.

SECTION XII: ECOLOGICAL DATA

No data available at this time.

SECTION XIII: DISPOSAL CONSIDERATIONS

In accordance with federal, state, and local regulations.

SECTION XIV: TRANSPORTATION INFORMATION

DOT Regulated: Not regulated.
DOT Shipping Name: N/A

SECTION XV: REGULATORY INFORMATION

OSHA Status: Contains no "hazardous chemicals" as defined by OSHA Hazard Communication Standard, 29CFR, 1910.1200.
TSCA Status: All ingredients listed
CERCLA: Not reportable.
SARA Title III : No reportable ingredients.
Sections 302, 311, 312, 313: No reportable ingredients
RCRA Status: Not regulated

SECTION XVI: OTHER INFORMATION

HMIS		0= Minimal
Health	0	1= Slight
Fire	0	2= Moderate
Reactivity	0	3= Serious
PP	0	4= severe

The above information and recommendations are believed to be accurate and reliable. However, no warranties, either expressed or implied with respect to the product or information herein are made. Users must make their own determination as to the suitability of the product for their purposes prior to use.

02/2006

Permatex, Inc.
10 Columbus Blvd.
Hartford, CT 06106 USA
Telephone: 1-87-Permatex
(877) 376-2839
Emergency: 800-255-3924
International Emergency: 813-248-0585

Material Safety Data Sheet

1. PRODUCT IDENTIFICATION

Product Name: 2A FORM-A-GASKET #2 SEALANT 1.5OZ
Item No: 80009
Product Type: Sealant

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	Weight Percent	ACGIH TLV:	OSHA PEL:
KAOLIN 1332-58-7	50-60	2 mg/m^3 dust TWA	15 mg/m^3 dust; 5 mg/m^3 respir. TWA
VEGETABLE OIL 68187-84-8	15-25	Not Listed	Not Listed
ROSIN 8050-09-7	10-20	sensitizer; reduce exposure to as low as possible	15 mg/m^3 total dust; 5 mg/m^3 respir.
2-PROPANOL 67-63-0	10-20	200 ppm TWA	400 ppm TWA; 980 mg/m^3 TWA
TITANIUM DIOXIDE 13463-67-7	0.1-1.0	10 mg/m^3 TWA ACGIH	15 mg/m^3 TWA (total dust)
SILICA, QUARTZ 14808-60-7	0.1-1.0	0.05 mg/m^3 TWA respirable	0.1 mg/m^3 TWA respirable

3. HAZARDS IDENTIFICATION

Toxicity: May cause eye, skin and respiratory irritation. Oral LD50 greater than 5000 mg/kg.
Primary Routes of Entry: Eye and skin contact, ingestion, inhalation
Signs and Symptoms of Exposure: Excessive accidental exposure may cause headache, dizziness, nausea and mild respiratory irritation. Overexposure may cause eye and skin redness.

Ingredient	Weight Percent	NTP	ACGIH Carcinogens	IARC
KAOLIN 1332-58-7	50-60		A4-Not classifiable as a human carcinogen	
2-PROPANOL 67-63-0	10-20		A4 - Not classifiable as a human carcinogen	Group 3 Monograph 71, 1999; Supp.7, 1987; Monograph 15, 1977
TITANIUM DIOXIDE 13463-67-7	0.1-1.0	male rat-negative, female rat-negative, male mice-negative, female mice-negative	A4	Group 2B; Vol 93,2006; Vol 47,1989
SILICA, QUARTZ 14808-60-7	0.1-1.0		A2 - Suspected Human Carcinogen	Group 1; Monograph 68, 1997 (inhaled)

Medical Conditions Recognized as Being Aggravated by Exposure: Preexisting eye, skin and respiratory disorders may be aggravated by overexposure to this product.

4. FIRST AID MEASURES

Ingestion: Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation: Move to fresh air in case of accidental inhalation of vapours. Oxygen or artificial respiration if needed. Obtain medical attention.
Skin Contact: Wash off with soap and water. If skin irritation persists, call a physician.
Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Flash Point (°F/C): Does not apply. Per ASTM D4359 this product is a solid.
Recommended Extinguishing Media: Carbon Dioxide, Dry Chemicals, Foam.

5. FIRE FIGHTING MEASURES

Special Fire-Fighting Procedures: Firefighters should wear self-contained breathing apparatus. Water spray may be ineffective on flames but should be used to keep fire-exposed containers cool.

Hazardous Products of Combustion: Aldehydes, Oxides of carbon, Carboxylic acids

Unusual Fire/Explosion Hazards: Closed containers may rupture or explode when exposed to extreme heat.

Lower Explosive Limit: 2

Upper Explosive Limit: 12

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Eliminate all sources of ignition. Maintain good ventilation. Take up with an inert absorbent. Store in a closed waste container until disposal. Residues may be cleaned up with isopropyl alcohol.

7. HANDLING AND STORAGE

Storage: Store away from heat, sparks or open flame. Do not store at temperatures above 120 degrees F.

Handling: Avoid contact with skin and eyes. Do not inhale vapors. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eyes: Safety glasses

Skin: Rubber or plastic gloves.

Ventilation: General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.

Respiratory Protection: An approved respirator (i.e. NIOSH, etc.) should be worn when exposures are expected to exceed the applicable limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Black paste

Odor: Alcoholic

Boiling Point: 180 degrees F.

pH: Does not apply

Solubility in Water: Partial

Specific Gravity: 1.5

VOC Content(Wt.%): 12.7% by weight

Vapor Pressure: 33 mm Hg @ 68 degrees F.

Vapor Density (Air=1): 2.07

Evaporation Rate: 7.7 (ether = 1)

10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal conditions

Hazardous Polymerization: Will not occur.

Incompatabilities: Strong oxidizers

Conditions to Avoid: Keep away from heat, sparks and open flame. - No smoking

Hazardous Products of Combustion: Aldehydes, Oxides of carbon, Carboxylic acids

11. TOXICOLOGICAL INFORMATION

See Section 3

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended Method of Disposal: Disposal should be made in accordance with federal, state and local regulations.

US EPA Waste Number: NH - Not a RCRA Hazardous Waste Material

14. TRANSPORTATION INFORMATION

DOT (49CFR 172)

Domestic Ground Transport

DOT Shipping Name: Unrestricted

Hazard Class:	None
UN/ID Number:	None
Marine Pollutant:	None

IATA

Proper Shipping Name:	Not regulated
Class or Division:	None
UN/NA Number:	None

IMDG

Proper Shipping:	Unrestricted
Hazard Class:	None
UN Number:	None

15. REGULATORY INFORMATION

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.

NONE

CALIFORNIA PROP 65:
No California Prop 65 chemicals are known to be present at or above the No Significant Risk Level.

TSCA Inventory Status:
Listed on Inventory: YES All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

Estimated NFPA Rating: HEALTH 2, FLAMMABILITY 1 , REACTIVITY 0
Estimated HMIS Classification: HEALTH 2, FLAMMABILITY 1, PHYSICAL HAZARD 0
NFPA is a registered trademark of the National Fire Protection Assn.
HMIS is a registered trademark of the National Paint and Coatings Assn.

Prepared By: Denise Boyd, Health and Safety Manager
Company: Permatex. Inc. 10 Columbus Blvd. Hartford, CT USA 06106
Revision Date: 12/15/2006
Revision Number: 5

NFPA HAZARD RATING SCALE 0-4

HEALTH	FIRE	REACTIVITY
0	0	0

MATERIAL SAFETY DATA SHEET

SECTION I NAME AND PRODUCT

MANUFACTURERS NAME:
DIAMANT BOART INC.
ADDRESS:
P.O. BOX 1317/10250 TWO NOTCH RD. COLUMBIA, SC 29202
TRADE NAME, COMMON NAME OR SPECIFICATION
DIAMOND IMPREGNATED METAL BOND PRODUCTS
CHEMICAL FAMILY OR PRODUCT TYPE:
SUPERABRASIVE SAW BLADES, DRILL BITS AND GRINDING/POLISHING TOOLS

CONTACT:
STEVE EADDY
EMERGENCY TEL. NO.
803-788-8860
DATE:
11/20/00

SECTION II COMPOSITION

CHEMICAL NAME (COMMON NAME)	MAX %	REG* (Y/N)	CAS #	OSHA PEL	ACGIH-TLV	CARCIN (Y/N)
COBALT **	0-20	Y	7440-48-4	0.05 mg/m3	0.05 mg/m3	N
TUNGSTEN	0-5	Y	7440-33-7	N/A	5 mg/m3	N
NICKEL **	0-5	Y	7440-02-0	0.10 mg/m3	0.10 mg/m3	Y
COPPER **	0-5	Y	7440-50-8	1.0 mg/m3	1.0 mg/m3	N
TIN	0-20	Y	744-31-5	2.0 mg/m3	2.0 mg/m3	N
SILVER **	0-5	Y	7440-22-4	0.01 mg/m3	0.01 mg/m3	N
IRON	0-20	Y	7439-89-6	10.0 mg/m3	5.0 mg/m3	N
DIAMOND	0-5	N	7782-40-3	NAIF	NAIF	N
STEEL	0-90	N	NA	N/A	N/A	N
MANGANESE	0-5	Y	7439-96-5	5.0mg/m3	5.0mg/m3	N
ALUMINUM OXIDE	0-5	Y	1344-28-1	5.0 mg/m3	5.0mg/m3	N
TUNGSTEN CARBIDE	0-15	Y	12070-12-1	5.0mg/m3	5.0mg/m3	N

*MATERIALS ARE REGULATED BY OSHA 29 CFR 1910.1200, HAZARD COMMUNICATIONS STANDARD, AND/OR THE MASSUCHUSETTS GENERAL LAW CHAPTER 111F, RIGHT –TO-KNOW REGULATIONS

SECTION III PHYSICAL AND CHEMICAL DATA

BOILING POINT: N/A
VAPOR PRESSURE: N/A
EVAP. RATE: N/A
MELTING POINT: N/A
PERCENT VOLATLE BY VOL.: N/A
SOL. IN WATER: INSOLUBLE
SPECIFIC GRAVITY: 7.8-12.4
VAPOR DENSITY: N/A
SOL. IN ALCOHOL: NAIF
SOL. IN OTHER CHEMICALS: SOLUBLE IN STRONG ACIDS **APPEARANCE AND ODOR:** GRAY METAL-NO ODOR

SECTION IV FIRE AND EXPLOSION DATA

FLASH POINT: N/A **METHOD:** N/A **FLAMMABLE LIMITS**: LEL: N/A UEL: N/A
EXTINGUISHING MEDIA: N/A **SPECIAL FIREFIGHTING PROCEDURES**: N/A
EXPLOSION POTENTIAL: N/A

SECTION V HEALTH, FIRST AID AND MEDICAL DATA

PRIMARY ROUTES OF ENTRY	ACUTE AND CHRONIC HEALTH EFFECTS OF OVEREXPOSURE :	FIRST AID AND MEDICAL INFORMATION:
INHALATION (DURING OPERATION)	ACUTE: SHORTNESS OF BREATH/COUGHING CHRONIC: MAY AFFECT LUNG CAPACITY	REMOVE TO FRESH AIR. OBTAIN MEDICAL ASSISTANCE IF SYMPTOMS PRESIST
INGESTION (DURING OPERATION)	NO KNOWN ADVERSE EFFECT, BUT INGESTION IS NOT RECOMMENDED	OBTAIN MEDICAL ASSISTANCE
SKIN CONTACT &ABSORBTION	NO KNOWN ADVERSE EFFFECTS.	WASH AFFECTED AREA WITH SOAP

(DURING OPERATON)	PROLONGED CONTACT MAY PRODUCE DERMATITIS	AND WATER. OBTAIN MEDICAL ASSISTANCE IF NEEDED
EYES (DURING OPERATION)	MAY IRRITATE EYES	WASH WITH LARGE AMOUNTS OF WATER AND SEEK MEDICAL ASSISTANCE.
OTHER POTENTIAL HEALTH RISKS (DURING OPERATION)	COBALT MAY CAUSE TRANSIENT OR PERMANENT RESPIRATORY DISEASE. NICKEL IS A KNOWN CARCINOGEN.	OBTAIN MEDICAL ASSISTANCE IF NEEDED.

SECTION VI CORROSIVITY AND REACTIVITY DATA

STABILITY: STABLE **POLYMERIZATION:** WILL NOT OCCUR
INCOMPATIBILITY (MATERIALS TO AVOID): NAIF
DECOMPOSITION PRODUCTS: NONE
CONDITIONS TO BE AVOIDED: CONTACT WITH STRONG ACIDS (NITRIC, HYDROCHLORIC, SULFURIC, ETC.)

SECTION VII STORAGE, HANDLING AND USE PROCEDURES

NORMAL STORAGE AND HANDLING:
MAINTAIN GOOD HOUSEKEEPING PROCEDURES TO PREVENT DUST ACCUMULATION DURING USE. AVOID DUST INHALATION AND DIRECT SKIN CONTACT WITH DUST. SEE ANSI STANDARD B7-1.
NORMAL USE:
MOST DIAMOND PRODUCTS SHOULD BE OPERATED WITH RECOMMMENDED COOLANTS OR WATER. FOR DRY USE OF DIAMOND PRODUCTS, PROVIDE ADEQUATE VENTALATION. FOLLOW INDUSTRY STANDARDS FOR RECOMMENDED USE. THE GREATEST PECENTAGE OF DUST BEING GENERATED COMES FROM THE MATERIAL BEING CUT, SAWED, DRILLED OR GROUND AND ***NOT*** THE DIAMOND PRODUCT. THOSE PERSONS USING THIS PRODUCT ON TUNGSTEN CARBIDE MATERIALS SHOULD CONSULT THE MSDS ON SPECIFIC TO TUNGSTEN CARBIDE FOR FUTHER USE REQUIREMENTS.
STEPS TO BE TAKEN IN CASE OF LEAKS OR SPILLS:
CLEAN USING METHODS WHICH AVOID DUST GENERATIONSUCH AS VACUUM (WITH APPROPRIATE FILTER TO PREVENT AIRBORNE DUST LEVELS WHICH EXCEED THE PEL OR TLV), WET DUST MOP OR WET CLEAN UP.
WASTE DISPOSAL METHOD:
STANDARD LANDFILL METHODS CONSISTENT WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS.

SECTION VIII PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): AS NEEDED PER PEL OR TLV, USE NIOSH APPROVED RESPIRATOR
VENTILATION: RECOMMENDED WHEN AIRBORNE DUST LEELS EXCEED PEL OR TLV. SEE OSHA 29 CFR 1910.1000 (AIR CONTAMINANTS), 1910.134 (RESPIRATORS) AND 1910.94 (VENTILATION)
PROTECTIVE GLOVES: RECOMMENDED, ALSO BARRIER CREAM WHEN CONTAACT WITH DUST IS LIKELY
EYE PROTECTION: SAFETY GLASSES WITH SIDE SHIELDS OR GOGGLES (SEE 29 CFR 1910.133) ; SAFETY GUARDS (SEE 29 CFR 1910.(211-222))
OTHER EQUIPMENT: HEARING PROTECTION- SEE 29 CFR 1910.95 (OCCUPATIONAL NOISE EXPOSURE).

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
MAINTAIN GOOD HOUSEKEEPING PROCEDURES. DUST FROM GRINDING, SAWING OR DRILLING CAN CAUSE IRRITATION OF THE NOSE AND THROAT. IT ALSO HAS THE POTENTIAL FOR CAUSING TRANSIENT OR PERMANENT RESPIRATORY DISEASE INCLUDING OCCUPATIONAL ASTHMA AND INTERSTITIAL FIBROSIS IN A SMALL PERCENTAGE OF EXPOSED INVIDUALS. IT IS REPORTED THAT COBALT DUST IS THE PROBABLE CAUSE OF SUCH RESPIRATORY DISEASES. SYMPTOMS INCLUDE PRODUCTIVE COUGH, WHEEZING, SHORTNESS OF BREATH, CHEST TIGHTNESS AND WEIGHT LOSS. INTERSTITIAL FIBROSIS (LUNG SCARRING) CAN LEAD TO PERMANENT DISABILITY OR DEATH.

FOR COMPANY USE

ALTHOUGH DIAMANT BOART, INC. HAS ATTEMPTED TO PROVIDE CURRENT AND ACCURATE INFORMATION HEREIN, DIAMANT BOART, INC. MAKES NO REPRESENTATION S REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION AND ASSUMES NO LIABILITY FOR LOSS, DAMAGE, INJURY OF ANY KIND WHICH MAY RESULT FROM AND ARISE OUT OF THE USE OR RELIANCE ON THE INFORMATION BY ANY PERSON.

NAIF- NO AVAILABLE INFORMATION FOUND N/A- NOT APPLICABLE **SUBJECT TO SARA 313

MATERIAL SAFETY DATA SHEET

Product identifier:	**Spray Lubricant**
Product description / use:	Petroleum derivatives / Spray lubricant for cleaning Hilti powder actuated tools
Supplier:	Hilti (Canada) Corporation, 2360 Meadowpine Blvd., Mississauga, Ontario L5N 6S2
Originator	Hilti, Inc., P. O. Box 21148, Tulsa, Oklahoma, USA 74121
Emergency phone number:	**Chem-Trec: 1 800 424 9300**

INGREDIENTS INFORMATION

Ingredient	CAS Number	% (wt.)	LC_{50}, (rat)	LD_{50} (rat)	TLV	STEL

Not a hazardous chemical as defined by the Controlled Products Regulations SOR/88-66

PHYSICAL PROPERTIES

Appearance / Physical state:	Clear liquid.	**Odour:**	Mild oil-like odour.
Specific gravity (at 20°C):	0.94	**Odour threshold:**	Not determined.
Vapour pressure (at 20°C):	Not applicable.	**Vapour density:**	Not applicable.
Evaporation rate:	Not determined.	**Boiling point:**	Not determined.
Freezing point:	Not determined.	**pH:**	Not determined.
Coefficient of H_20 / oil distrib:	Not determined.	**Solubility in water:**	Slightly soluble.

FIRE AND EXPLOSION DATA

Flash point / Method:	> 215 C / DIN 53213	**Flammable limits:**	Not applicable.
Conditions of flammability:	Exposure to direct flame.	**Auto-ignition temperature:**	Not applicable.
Means of extinction:	CO_2, Dry Chemical, Foam.		
Special fire fighting procedures:	None known. A NIOSH-approved self-contained breathing apparatus (SCBA) should be worn when fighting fires involving chemicals.		
Hazardous combustion products:	Normal products of combustion are expected including CO and CO_2.		
Sensitivity to mechanical impact / static discharge:	Not susceptible to mechanical impact or to a static discharge.		

REACTIVITY DATA

Stability:	Stable.	**Conditions of reactivity:**	None known.
Incompatible materials:	Strong oxidizing agents.		
Hazardous decomposition products:	None known. Thermal decomposition can yield oxides of carbon.		

TOXICOLOGICAL PROPERTIES

Routes of exposure:	☐ N/Ap ☒ Skin contact ☐ Skin absorption ☒ Eye contact ☐ Inhalation ☐ Ingestion
Exposure limits:	None established. See "Ingredients" section above.
Acute effects of exposure:	**Eyes** - Slight irritation is possible. Corneal injury is not expected. **Skin** - No effects expected. Irritation is possible with some individuals. **Inhalation** - No effects expected. **Ingestion** - Not a likely route of exposure. Effects of ingestion have not been determined. Considered to have a low acute oral toxicity.
Chronic effects of exposure:	None known.
Synergistic materials:	None known.

FIRST AID MEASURES

Eyes:	Flush with plenty of water. Call a physician if symptoms occur.
Skin:	Wash with soap and water. Seek medical attention if any effects persist.
Inhalation:	No ill effects expected. Should discomfort occur, move to fresh air.
Ingestion:	Not a likely route of exposure. Do not induce vomiting unless recommended by a physician. Seek medical attention immediately.
Other:	Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure

PREVENTIVE MEASURES

Engineering controls:	General (natural or mechanically induced fresh air movements).
Eye protection:	Safety glasses with side shields are recommended.
Skin protection:	Impermeable gloves recommended.
Respiratory protection:	None normally required.
Other:	No additional measures are normally required.
Handling procedures and equipment:	For industrial use only. Do not heat can or expose to direct flame. Do not get into the eyes. Avoid prolonged or repeated contact with the skin. Practice good hygiene; i.e., wash after using and before eating or smoking.
Storage requirements:	Keep out of reach of children. Store in a cool dry place out of direct rays of the sun. Recommended storage temperature range is between 5° and 30° C.
Spill, leak or release:	Wipe away spilled material with a cloth or other absorbent material. Place in a container for proper disposal in accordance with all applicable local, state, or federal requirements. Do not allow into waterways.
Waste disposal:	Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, provincial, and federal safety, health and environmental regulations.
Special shipping instructions:	None known.

REGULATORY INFORMATION

WHMIS classification:	Not a controlled product according to WHMIS definitions
HMIS codes:	Health 0, Flammability 0, Reactivity 0, PPE B
TDG shipping name:	Not regulated.

PREPARATION INFORMATION / CONTACTS

Prepared by:	Hilti, Inc., Tulsa, OK USA	Date of Preparation: Jan. 12,2011	**Emergency phone number:**	1 800 424 9300
Customer Service:	Hilti (Canada) Corporation, Mississauga, Ontario; 1 800 363 4458			
Health / Safety contacts:	Hilti, Inc., Tulsa, OK USA; 1 800 879 6000, Jerry Metcalf (x1003704)			
Abbreviations used:	**N/E** = None Established. **N/Ap** = Not Applicable. **N/Av** = Not Available. **HMIS:** Hazardous Materials Identification System			

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

MATERIAL SAFETY DATA SHEET

Product identifier: **DX Cartridges** (Also called shots, loads, powerloads, safety cartridges, or safety boosters)

Product description / use: 22, 25 and 27 calibre blank cartridges for use in powder actuated tools

Supplier: Hilti (Canada) Corporation, 2360 Meadowpine Blvd., Mississauga, Ontario L5N 6S2

Originator Hilti, Inc., P. O. Box 21148, Tulsa, Oklahoma, USA 74121

Emergency phone number: **Chem-Trec: 1 800 424 9300**

INGREDIENTS INFORMATION

Ingredient	CAS Number	% (wt.)	LC_{50}, (rat)	LD_{50} (rat)	TLV	STEL
Nitroglycerin	00055-63-0	5 -10	N/Av	105 mg/kg	0.05 mg/m^3 (S)	0.1 mg/m^3 (S)
Nitrocellulose	09004-70-0	7 -13	N/Av	>5000 mg/kg	N/E	N/E
Lead styphnate	15245-44-0	0.1-1	N/Av	N/Av	N/E	N/E
Barium nitrate	10022-31-8	< 0.1	N/Av	355 mg/kg	0.5 mg/m^3	N/E
Tetracene	00109-27-3	< 0.1	N/Av	N/Av	N/E	N/E

PHYSICAL PROPERTIES

Appearance / Physical state:	Blank brass cartridges.	**Odour:**	Not applicable.
Specific gravity (at 20°C):	Not applicable.	**Odour threshold:**	Not applicable.
Vapour pressure (at 20°C):	Not applicable.	**Vapour density:**	Not applicable.
Evaporation rate:	Not applicable.	**Boiling point:**	Not applicable.
Freezing point:	Not applicable.	**pH:**	Not applicable.
Coefficient of H_20 / oil distrib:	Not applicable.	**Solubility in water:**	Not applicable.

FIRE AND EXPLOSION DATA

Flash point / Method:	Not applicable.	**Flammable limits:**	Not applicable.
Conditions of flammability:	Not applicable.	**Auto-ignition temperature:**	Not applicable.

Means of extinction: Water.

Special fire fighting procedures: Flood area with water or keep cartridges cool with water spray.

Hazardous combustion products: Oxides of nitrogen, oxides of carbon, oxides of lead, metallic lead and acrid fumes.

Sensitivity to mechanical impact / static discharge: Susceptible to mechanical impact.

REACTIVITY DATA

Stability:	Explosive material.	**Conditions of reactivity:**	Explosive material.

Incompatible materials: Strong acids and oxidizing materials.

Conditions to avoid: Acids, excess heat, crushing and electrical currents.

Hazardous decomposition products: Oxides of nitrogen, oxides of carbon, oxides of lead, metallic lead and acrid fumes.

TOXICOLOGICAL PROPERTIES

Routes of exposure: ☐ N/Ap ☒ Skin contact ☒ Skin absorption ☒ Eye contact ☒ Inhalation ☐ Ingestion

Exposure limits: See "Ingredients" section above.

Acute effects of exposure: Excessive exposure to gases might cause irritation to the eyes, skin, and respiratory system. Adverse health effects are not expected from acute exposure to fumes and gases; however, adequate ventilation, personal protective equipment, and/or good personal hygiene practices are essential to keep exposure to a minimum.

Chronic effects of exposure: Chronic (long-term) overexposure to lead can result in damage to blood-forming, nervous, urinary and reproductive systems. Organic lead compounds are not classified by IARC or NTP as carcinogens. Lead styphnate is converted to metallic lead and lead oxide during combustion. Metallic lead and lead oxide have not been tested adequately. A study by Goyer and Rhyne (1973) concluded that "there is no evidence that lead produces cancer in man".

Synergistic materials: None known.

FIRST AID MEASURES

Eyes:	If irritation occurs, flush with plenty of water. Consult a physician if symptoms persist.
Skin:	Practice good hygiene; i.e. wash with soap and water after using and before meals.
Inhalation:	Move victim to fresh air. Get medical attention if symptoms persist.
Ingestion:	Get immediate medical attention.
Other:	Seek prompt medical attention if physical injury occurs from pins, rivets, debris, etc. For bleeding wounds, place a clean cloth or similar absorbent material on the wound and apply firm pressure. Elevate the wound and transport immediately to a medical facility.

PREVENTIVE MEASURES

Engineering controls:	General (i.e., natural or mechanically induced fresh air movements).
Eye protection:	Safety glasses with side-shields, as a minimum. Safety goggles recommended.
Skin protection:	Cleaning powder actuated tools can result in some exposure to lead compounds. Impermeable gloves are recommended for cleaning, otherwise wash hands thoroughly when finished and before eating or smoking.
Respiratory protection:	Not normally required. Where air movement is inadequate to maintain exposure below recommended levels, wear a high efficiency particulate respirator.
Other:	Hearing protection should be worn when firing powder actuated tools
Handling procedures and equipment:	For industrial use only. Keep out of reach of children. Use with adequate ventilation. Use only in powder actuated tools designed to handle these boosters. All employees should be familiarized with the safe operating procedures and requirements for powder operated tools as described in ANSI A10.3. Practice good hygiene; i.e. wash after using and before eating or smoking.
Storage requirements:	Store in a cool dry place. Do not crush or drop. Keep away from excessive heat (such as extremely hot surfaces and flames), electrical current, strong acids and oxidizers.
Spill, leak or release:	Not applicable.
Waste disposal:	Misfires should be stored in a closed container until disposal or as otherwise required by local, state, and provincial safety, health and environmental regulations. The recommended disposal method is in a burner specifically designed to destroy ammunition. Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, provincial, and federal safety, health and environmental regulations.
Special shipping instructions:	None known.

REGULATORY INFORMATION

WHMIS classification:	None (Exempt - Explosives)
HMIS codes:	Health 1, Flammability 1, Reactivity 3, PPE B (Glasses with side-shields, Gloves)
ICAO/IATA Shipping Name:	Cartridges, power device, Class 1.4S, UN0323
TDG shipping name:	Cartridges, power device, Class 1.4S, UN0323
DOT shipping name:	Consumer commodity, ORM-D

PREPARATION INFORMATION / CONTACTS

Prepared by:	Hilti, Inc., Tulsa, OK USA	Date of Preparation: October 27,2009	**Emergency phone number:**	1 800 424 9300
Customer Service:	Hilti (Canada) Corporation, Mississauga, Ontario; 1 800 363 4458			
Health / Safety contacts:	Hilti, Inc., Tulsa, OK USA; 1 800 879 6000, Jerry Metcalf (x1003704)			
Abbreviations used:	**N/E** = None Established. **N/A** = Not Applicable. **N/Av** = Not Available. **(S)** indicates exposure should be controlled for the cutaneous routes including the mucous membranes, eyes, and skin. Airborne exposures as well as direct contact must be considered. **IARC:** International Agency for Research on Cancer. **HMIS:** Hazardous Materials Identification System			

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: Carbon and Alloy Steels
CAS Number: Not applicable
Synonyms: Steels
Use/Description: Bar and structural steel products, billets

Nucor Bar Mill Locations

24 Hour Contact – CHEMTREC 1-800-424-9300

Nucor Steel – South Carolina
300 Steel Mill Road
Darlington, S.C. 29540
(843) 393-5841

Nucor Steel – Auburn, Inc.
25 Quarry Road
Auburn, N.Y. 13021
(315) 253-4561

Nucor Steel – Texas
U.S. Highway 79 South
Jewett, Texas 75846
(903) 626-4461

Nucor Steel Connecticut, Inc.
35 Toelles Road
Wallingford, CT 06492
(203) 265-0615

Nucor Steel Kankakee, Inc.
One Nucor Way
Bourbonnais, IL 60914
(815) 939-5541

Nucor Steel – Utah
West Cemetery Road
Plymouth, Utah 84330
(435) 458-2300

Nucor Steel Marion, Inc.
912 Cheney Avenue
Marion, Ohio 43302
(740) 383-4011

Nucor Steel Jackson, Inc.
3630 Fourth Street
Flowood, MS 39232
(601) 939-1623

Nucor Steel Birmingham, Inc.
2301 F.L. Shuttlesworth Drive
Birmingham, Alabama 35234
(205) 250-7400

Nucor Steel – Berkeley
1455 Hagan Avenue
Huger, SC 29450
(843) 336-6000

Nucor Steel – Nebraska
2911 East Nucor Road
Norfolk, Nebraska 68701
(402) 644-0200

Nucor Steel Seattle, Inc.
2424 SW Andover
Seattle, WA 98106
(206) 933-2222

Nucor Yamato Steel
5929 E. State Hwy 18
Armorel, AR 72310
(870) 762-5500

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components		CAS No.	% Weight	Exposure Limits			
				ACGIH TLV (mg/m^3)		OSHA PEL (mg/m^3)	
Base Metal:							
Iron	(Fe)	7439-89-6	Balance	5	Oxide Dust/Fume	10	Oxide Dust/Fume
Alloying Elements							
Aluminum	(Al)	7429-90-5	0-0.01	10 5	Dust Fume	15 5	Dust Respirable fraction
Antimony	(Sb)	7440-36-0	<0.9	0.5	As Antimony	0.5	As Antimony
Arsenic	(As)	7440-38-2	<0.09	0.01	As Arsenic (A1 Carcinogen)	0.01	As Arsenic
Beryllium	(Be)	7440-41-7	<0.09	0.00 2 0.01	As Beryllium (A1 Carcinogen) As Beryllium (STEL)	0.002 0.005	As Beryllium As Beryllium (Ceiling)
Boron	(B)	7440-42-8	<0.9	10	Oxide Dust	15	Oxide Dust
Cadmium	(Cd)	7440-43-9	<0.09	0.01 0.00 2	As Cadmium (A2 Carcinogen) Respirable fraction	0.005 0.0025	As Cadmium As Cadmium (Action Level)
Calcium	(Ca)	1305-78-8	<0.9	2	Oxide Dust	5	Oxide Dust
Carbon	(C)	7440-44-0	0.04-1.0		Not Established		Not Established
Chromium	(Cr)	7440-47-3	0.01-1.0	0.5	Metal	1	Metal

Components		CAS No.	% Weight	Exposure Limits			
				ACGIH TLV (mg/m^3)		OSHA PEL (mg/m^3)	
Cobalt	(Co)	7440-48-4	<0.09	0.02	As Cobalt (A3 Carcinogen)	0.1	Metal/Dust/Fume
Copper	(Cu)	7440-50-8	<0.9	1 0.2	Dust Fume	1 0.1	Dust Fume
Lead	(Pb)	7439-92-1	<0.05	0.05	Dust / Fume (A3 Carcinogen)	0.05	Dust / Fume
Magnesium	(Mg)	7439-95-4	<0.9		Not Established		Not Established
Manganese	(Mn)	7439-96-5	0.2-2	0.2	Elemental Mn and Inorg Compounds	5	Fume (Ceiling)
Molybdenum	(Mo)	7439-98-7	<0.9	10	Insoluble Compounds	15	Insoluble Compounds
Niobium	(Nb)	7440-03-1	<0.9		Not Established		
Nickel	(Ni)	7440-02-0	<1.0	1.5	Metal	1	Metal and Insoluble Compounds
Nitrogen	(N)	7727-37-9	<0.9		Simple Asphyxiant		Simple Asphyxiant
Phosphorus	(P)	7723-14-0	<0.9	0.1	Phosphorus	0.1	Phosphorus
Selenium	(Se)	7782-49-2	<0.9	0.2	Selenium	0.2	Selenium
Silicon	(Si)	7440-21-3	<0.9	10	Dust	15	Dust
Sulfur	(S)	7446-09-05	<0.9	5.2 13	Sulfur Dioxide Sulfur Dioxide (STEL)	13	Sulfur Dioxide
Tin	(Sn)	7440-31-5	<0.9	2	Metal,Oxide and Inorganic Compounds	2	Inorganic Compounds
Titanium	(Ti)	7440-32-6	<0.9		Not Established		Not Established
Tungsten	(W)	7440-33-7	<0.9	5 10	Insoluble Compounds as W Insoluble Compounds as W (STEL)		Not Established
Vanadium	(V)	7440-62-2	<0.9	0.05	Oxide Dust/Fume	0.5 0.1	Oxide Dust (Ceiling) Oxide Fume (Ceiling)
Zinc	(Zn)	7440-66-6	0.0-0.01	10 5 10	Oxide Dust OxideFume Oxide Fume (STEL)	5 10	Oxide Fume Oxide Dust

NOTE: No permissible exposure limits (PEL) or threshold limit values (TLV) exist for steel over all. The above listing is a summary of elements used in alloying Nucor Steel Products. Various grades of steel will contain different combinations of these elements and/or trace materials. Exact specifications can be found by calling the division and asking for a specifications sheet.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING! WELDING, SAWING, BRAZING, GRINDING, AND MACHINING MAY CAUSE DUSTS AND/OR FUME TO BE RELEASED. MAY BE HARMFUL IF INHALED. MAY IRRITATE THE EYES, SKIN, AND RESPIRATORY TRACT. MOLTEN MATERIAL MAY CAUSE THERMAL BURNS

Potential Health Effects

Note: Steel products in their solid state under normal conditions, do not present an inhalation, ingestion or skin hazard. However, operations resulting in fume or particulate formation such as welding, sawing, brazing, grinding and machining may present health hazards. Molten steel also is hazardous.

Eye Contact

Dusts or particulates may cause mechanical irritation including pain, tearing, and redness. Scratching of the cornea can occur if eye is rubbed. Fumes may be irritating. Contact with the heated material may cause thermal burns.

Skin Contact

Dusts or particulates may cause mechanical irritation due to abrasion. Coated steel may cause skin irritation in sensitive individuals (see Section 16 for additional information.) Some components in this product are capable of causing an allergic reaction, possibly resulting in burning, itching and skin eruptions. Contact with heated material may cause thermal burns.

Inhalation

Dusts may cause irritation of the nose, throat, and lungs. Excessive inhalation of metallic fumes and dusts may result in metal fume fever, an influenza-like illness. It is characterized by a sweet or metallic taste in the mouth, accompanied by dryness and irritation of the throat, cough, shortness of breath, pulmonary edema, general malaise, weakness, fatigue, muscle and joint pains, blurred vision, fever and chills. Typical symptoms last from 12 to 48 hours.

Ingestion
Not expected to be acutely toxic via ingestion based on the physical and chemical properties of the product. Swallowing of excessive amounts of the dust may cause irritation, nausea, and diarrhea.
Chronic or Special Toxic Effects
Repeated exposure to fine dusts may inflame the nasal mucosa and cause changes to the lung. In addition, a red-brown pigmentation of the eye and/or skin may occur.
Welding fumes have been associated with adverse health effects. Contains components that may cause cancer or reproductive effects. The following components are listed by NTP, OSHA, or IARC as carcinogens: Nickel, chromium (hexavalent), cobalt, lead, cadmium, antimony (trioxide), arsenic, beryllium. See Section 11, for additional, specific information on effects noted above.
Target Organs
Overexposure to specific components of this product that are generated in dusts or fumes may cause adverse effects to the following organs or systems: eyes, skin, liver, kidney, central nervous system, cardiovascular system, respiratory system,.
Medical Conditions Aggravated by Exposure
Diseases of the skin such as eczema may be aggravated by exposure. Also, disorders of the respiratory system including asthma, bronchitis, and emphysema. Long-term inhalation exposure to agents that cause pneumoconiosis (e.g. dust) may act synergistically with inhalation of oxide fumes or dusts of this product.

4. FIRST AID MEASURES

Eye Contact- In case of overexposure to dusts or fumes, immediately flush eyes with plenty of water for at least 15 minutes occasionally lifting the eye lids. Get medical attention if irritation persists. Thermal burns should be treated as medical emergencies.
Skin Contact - In case of overexposure to dusts or particulates, wash with soap and plenty of water. Get medical attention if irritation develops or persists. If thermal burn occurs, flush area with cold water and get immediate medical attention.
Inhalation - In case of overexposure to dusts or fumes, remove to fresh air. Get immediate medical attention if symptoms described in this MSDS develop.
Ingestion - Not considered an ingestion hazard. However, if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. Get medical attention.
Notes to Physician - Inhalation of metal fume or metal oxides may produce an acute febrile state, with cough, chills, weakness, and general malaise, nausea, vomiting, muscle cramps, and remarkable leukocytosis. Treatment is symptomatic, and condition is self limited in 24-48 hours. Chronic exposure to dusts may result in pneumoconiosis of mixed type.

5. FIRE FIGHTING MEASURES

Flash Point (Method) - Not applicable
Flammable Limits (% volume in air) - Not applicable
Autoignition Temperature - Not applicable
Extinguishing Media - For molten metal, use dry powder or sand.
Special Fire Fighting Procedures - Do not use water on molten metal. Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.
Unusual Fire or Explosion Hazards - Steel products do not present fire or explosion hazards under normal conditions. Fine metal particles such as produced in grinding or sawing can burn. High concentrations of metallic fines in the air may present an explosion hazard.

6. ACCIDENTAL RELEASE MEASURES

Precautions if Material is Spilled or Released - Emergency response is unlikely unless in the form of dust. Avoid inhalation, eye, or skin contact of dusts by using appropriate precautions outlined in this MSDS (see section 8). Fine turnings and small chips should be swept or vacuumed and placed into appropriate disposable containers. Keep fine dust or powder away from sources of ignition. Scrap should be reclaimed for recycling. Prevent materials from entering drains, sewers, or waterways.
Environmental Precautions - Some grades of steel may contain reportable quantities of alloying elements. See Section 15 for additional information.
Waste Disposal Methods - Dispose used or unused product in accordance with applicable Federal, State, and Local regulations.

7. HANDLING AND STORAGE

Storage Temperatures - Stable under normal temperatures and pressures.
Precautions to be Taken in Handling and Storing - Store away from strong oxidizers. Dusts or powders may form explosive mixtures with air. Avoid breathing dusts or fumes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Operations with potential for generating high concentrations of airborne particulates or fumes should be evaluated and controlled as necessary.
Eye Protection - Use safety glasses. Dust resistant safety goggles are recommended under circumstances where particles could cause mechanical injury such as grinding or cutting. Face shield should be used when welding or cutting.
Skin - Appropriate protective gloves should be worn as necessary. Good personal hygiene practices should be followed including cleansing exposed skin several times daily with soap and water, and laundering or dry cleaning soiled work clothing.
Respiratory Protection - NIOSH/MSHA approved dust/fume/mist respirator should be used to avoid excessive exposure. See Section 2 for component material information exposure limits. If such concentrations are sufficiently high that this respirator is inadequate, or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator use, fitting, and training standards and regulations.
Ventilation - Provide general and/or local exhaust ventilation to control airborne levels of dust or fumes below exposure limits.
Exposure Guidelines - No permissible exposure limits (PEL) or threshold limit values (TLV) exist for steel. See Section 2 for component materials. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor - Red, Grey or other color steel panels, pulins, and built-up joists and trusses
Boiling Point - Not applicable
Melting Point - Approximately 2800 °F
pH - Not applicable
Specific Gravity (at 15.6 °C) - Not applicable
Density (at 15.6 °C) - Not applicable
Vapor Pressure - Not applicable
Vapor Density (air = 1) - Not applicable
% Volatile, by Volume - Not applicable
Solubility in Water - Insoluble.
Evaporation Rate (Butyl Acetate = 1) - Not applicable
Other Physical and Chemical Data
None

10. STABILITY AND REACTIVITY

Stability - Stable

Conditions to Avoid - Steel at temperatures above the melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fume.
Hazardous Polymerization - Will not occur.
Incompatibility (Materials to Avoid) - Reacts with strong acids to form hydrogen gas. Do not store near strong oxidizers.
Hazardous Decomposition Products - Metallic fumes may be produced during welding, burning, grinding, and possibly machining or any situation with the potential for thermal decomposition. Refer to ANSI Z49.1

11. TOXICOLOGICAL INFORMATION

The primary component of this product is iron. Long-term exposure to iron dusts or fumes can result in a condition called siderosis which is considered to be a benign pneumoconiosis. Symptoms may include chronic bronchitis, emphysema, and shortness of breath upon exertion. Penetration of iron particles in the skin or eye may cause an exogenous or ocular siderosis which may be characterized by a red-brown pigmentation of the affected area. Ingestion overexposures to iron may affect the gastrointestinal, nervous, and hematopoietic system and the liver. Iron and steel founding, but not iron or iron oxide, has been listed as potentially carcinogenic by IARC.

When this product is welded, fumes are generated. Welding fumes may be different in composition from the original welding product, with the chief component being ordinary oxides of the metal being welded. Chronic health effects (including cancer) have been associated with the fumes and dusts of individual component metals (see above), and welding fumes as a general category have been listed by IARC as a carcinogen (Group 2B). There is also limited evidence that welding fumes may cause adverse reproductive and fetal effects. Evidence is stronger where welding materials contain known reproductive toxins, e.g., lead which may be present in the coating material of this product.

Breathing fumes or dusts of this product may result in metal fume fever, which is an illness produced by inhaling metal oxides. These oxides are produced by heating various metals including cadmium, zinc, magnesium, copper, antimony, nickel, cobalt, manganese, tin, lead, beryllium, silver, chromium, aluminum, selenium, iron, and arsenic. The most common agents involved are zinc and copper.

This product may contain small amounts of manganese. Prolonged exposure to manganese dusts or fumes is associated with "manganism", a Parkinson-like syndrome characterized by a variety of neurological symptoms including muscle spasms, gait disturbances, tremors, and psychoses.

This product may contain small amounts of cadmium. Primary target organs for cadmium overexposure are the lung and the kidney. Because of its cumulative nature, chronic cadmium poisoning can cause serious disease which takes many years to develop and may continue to progress despite cessation of exposure. Progression of the disease may not reflect current exposure conditions. It is also capable of causing a painful osteomalacia called "Itai-Itai" in postmenopausal women, and has cause developmental effects and/or reproductive effects in male and female animals. Cadmium is a listed carcinogen by NTP, OSHA, and IARC (Group 1).

This product may contain small amounts of chromium. Prolonged and repeated overexposure to chromium dusts or fumes may cause skin ulcers, nasal irritation and ulceration, kidney damage and cancer of the respiratory system. Chromium is skin sensitizer. Cancer is generally attributed to the hexavalent (+6) form of chromium which is listed as a carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of nickel. Prolonged and repeated contact with nickel may cause sensitization dermatitis. Inhalation of nickel compounds has caused lung damage as well as sinus, nasal and lung cancer in laboratory animals. Nickel is a listed carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of vanadium. Adverse effects from dermal, inhalation or parenteral exposure to various vanadium compounds have been reported. The major target for vanadium pentoxide toxicity is the respiratory tract. Fumes or dust can cause severe eye and respiratory irritation, and systemic effects. Chronic bronchitis, green tongue, conjunctivitis, pharyngitis, rhinitis, rales, chronic productive cough, and tightness of the chest have been reported following overexposure. Allergic

reactions resulting from skin and inhalation exposures have also been reported. A statistical association between vanadium air levels and lung cancer has been suggested, but vanadium currently is not regarded as a human carcinogen.

This product may contain small amounts of lead. Lead can accumulate in the body. Consequently, exposure to fumes or dust may produce signs of polyneuritis, diminished vision and peripheral neuropathy, such as tingling and loss of feeling in fingers, arms and legs. Lead is a known reproductive and developmental toxin. It is also associated with central nervous system disorders, anemia, kidney disfunction and neurobehavioral abnormalities. The brain is a major target organ for lead exposure. Elemental lead is listed as an IARC 2B carcinogen.

The product may contain small amounts of copper. Copper dust and fume can irritate the eyes, nose and throat causing coughing, wheezing, nosebleeds, ulcers and metal fume fever. Other effects from repeated inhalation of copper fume include a metallic or sweet taste, and discoloration of skin, teeth or hair. Copper also may cause an allergic skin reaction. Overexposure to copper can affect the liver.

12. ECOLOGICAL INFORMATION

Aquatic Ecotoxicological Data - No specific information available on this product.
Environmental Fate Data - No specific information available on this product.

13. DISPOSAL CONSIDERATIONS

Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts. Dispose in accordance with federal, state, and local health and environmental regulations. Prevent materials from entering drains, sewers, or waterways.

14. TRANSPORT INFORMATION

DOT Proper Shipping Name - Not regulated
DOT Hazard Classification - Not regulated
UN/NA Number - Not applicable
DOT Packing Group - Not applicable
Labelling Requirements - Not applicable
Placards - Not applicable
DOT Hazardous Substance - Not applicable
DOT Marine Pollutant - Not applicable

15. REGULATORY INFORMATION

This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, dusts and fumes from this product may be hazardous.

CALIFORNIA PROPOSITION 65
This product contains chemicals (antimony [oxide], arsenic, beryllium, chromium [hexavalent], cobalt, cadmium, lead, nickel) known to the State of California to cause cancer and chemicals (cadmium, lead) known to the State of California to cause birth defects or other reproductive harm.
Regulatory Lists
Some components of this product may be specifically listed by individual states; other product-specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.
Toxic Substances Control Act (TSCA)
Components of this product are listed on the TSCA Inventory.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Steel is not reportable, however, it contains hazardous substances that may be reportable if released in pieces with diameters less than or equal to 0.004 inches (RQ marked with a "*").

Chemical Name	Reportable Quantity (in lb)
Antimony	5000*
Arsenic	1*
Beryllium	10*
Cadmium	10*
Chromium	5000*
Copper	5000*
Lead	10*
Nickel	100*
Phosphorus	1
Selenium	100*
Zinc	1000*

Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III
SECTION 311/312 HAZARD CATEGORIES: Immediate Health Effect, Delayed Health Effect
This product contains the following EPCRA Section 313 chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right – To – Know Act of 1986 (40 CFR 372):

SECTION 313 REPORTABLE INGREDIENTS:

Chemical Name	CAS Number	Concentration (% by weight)	Reportable
Aluminum	7429-90-5	<0.01	No – Less than 1%
Antimony	7440-36-0	<0.9	No – Less than 1%
Arsenic	7440-38-2	<0.09	No – Less than 0.1%
Beryllium	7440-43-9	<0.09	No – Less than 0.1%
Cadmium	7440-43-9	<0.09	No – Less than 0.1%
Chromium	7440-47-3	0.01-1.6	Yes – Greater than 0.1%
Cobalt	7440-48-4	<0.09	No – Less than 0.1%
Copper	7440-50-8	<0.9	No – Less than 1%
Lead	7439-92-1	<0.05	No – Less than 0.1%
Manganese	7439-96-5	0.2-2	Yes – Greater than 1%
Nickel	7440-02-0	<1.0	Yes – Greater than 0.1%
Phosphorus	7723-14-0	<0.9	No – Less than 1%
Selenium	7782-49-2	<0.9	No – Less than 1%
Vanadium	7440-62-2	<0.9	No – Less than 1%
Zinc	7440-66-6	0-0.01	No – Less than 1%

Concentrations based on analytical data and process knowledge of typical products distributed by the facility.

16. OTHER INFORMATION

This product may be coated with a variety of materials, including oils, paints, galvanization, etc. that are not included in this MSDS. During welding precautions should be taken for airborne contaminants that may originate from components of the welding rod. Arc or spark generated when welding or burning could be a source of ignition or combustible and flammable materials. The information in this Material Safety Data Sheet (MSDS) was obtained from sources which we believe are reliable; however, the information is provided without any representation of warranty, expressed or implied, regarding the accuracy or correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the handling, storage, use, or disposal of this product.