

**STABILITY:**

Stable under normal storage conditions.

**HAZARDOUS POLYMERIZATION:**

Will not occur.

**INCOMPATIBILITIES:**

May react with strong oxides.

**DECOMPOSITION PRODUCTS:**

Thermal decomposition (destructive fires) yields elemental oxides.

**INTERNAL PUMPOUT/CLEANOUT CATEGORIES:**

"A"

## 11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT: >1,000 mg/kg  
NOTE - Estimated value; Guinea Pig Oral LDLo: 429 mg/kg  
Dermal LD50 RABBIT: >2,000 mg/kg  
NOTE - Estimated value

## 12 ECOLOGICAL INFORMATION

**AQUATIC TOXICOLOGY**

No Data Available.

**BIODEGRADATION**

No Data Available.

## 13 DISPOSAL CONSIDERATIONS

Incinerate or bury in approved landfill. Please be advised that there may be additional local or provincial requirements relating to the disposal of waste. Consult provincial and local regulations regarding the proper disposal of this material.

## 14 TRANSPORT INFORMATION

**Transportation of Dangerous Goods:**

Proper Shipping Name: Not Regulated

## 15 REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**CEPA:**

All components of this product comply with substance notification requirements under CEPA.

**WHMIS CLASSIFICATION:**

NOT REGULATED

## 16 OTHER INFORMATION

NFPA/HMIS		CODE TRANSLATION
Health	0	Minimal Hazard
Fire	0	Minimal Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	A	Safety Glasses

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

**CHANGE LOG**

	EFFECTIVE DATE -----	REVISIONS TO SECTION: -----	SUPERCEDES -----
MSDS status:	03-MAY-1996	REVISED FORMAT	** NEW **
	03-OCT-1997	8;EDIT:9	03-MAY-1996
	12-MAY-1998	;EDIT:9	03-OCT-1997
	07-DEC-1998	8	12-MAY-1998
	08-NOV-2001		07-DEC-1998
	05-MAY-2003	16	08-NOV-2001
	06-MAY-2003	4,7	05-MAY-2003
	07-MAY-2003	16	06-MAY-2003
	04-JUN-2004		07-MAY-2003



GE Betz

GE Betz Canada, Inc.  
3451 Erindale Station Road  
Mississauga, Ontario L5C 2S9  
Business telephone: (905) 279-2222

Material Safety Data Sheet

Issue Date: 22-JUL-2005

**EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940**

## 1 PRODUCT IDENTIFICATION

REAGENT NAME:

**DECHLORINATING REAGENT POWDER PILLOW**

REAGENT CODE:

**L2043**

REAGENT APPLICATION AREA:

**FIELD TEST REAGENT**

## 2 COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

### HAZARDOUS INGREDIENTS:

Cas#	Chemical Name	Range (w/w%)
7772-98-7	SODIUM THIOSULFATE, ANHYDROUS Irritant; (eyes, skin) ORAL LD50: NO DATA. DERMAL LD50: NO DATA. INHL. LC50: NO DATA.	7-13

No component is considered to be a carcinogen by the U.S. National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or under WHMIS.

## 3 HAZARDS IDENTIFICATION

\*\*\*\*\*

### EMERGENCY OVERVIEW

May cause moderate irritation to the skin. Severe irritant to the eyes. Dusts cause irritation to the upper respiratory tract.

Odor: None; Appearance: White, Powder

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

\*\*\*\*\*

#### POTENTIAL HEALTH EFFECTS

##### ACUTE SKIN EFFECTS:

May cause moderate irritation to the skin.

##### ACUTE EYE EFFECTS:

Severe irritant to the eyes.

##### ACUTE RESPIRATORY EFFECTS:

Primary route of exposure; Dusts cause irritation to the upper respiratory tract.

##### INGESTION EFFECTS:

May cause gastrointestinal irritation.

##### TARGET ORGANS:

No evidence of potential chronic effects.

##### MEDICAL CONDITIONS AGGRAVATED:

Not known.

##### SYMPTOMS OF EXPOSURE:

Inhalation of dust and/or vapors may cause eye, nose, throat and respiratory tract irritation.

## 4 FIRST AID MEASURES

##### SKIN CONTACT:

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists.

##### EYE CONTACT:

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

##### INHALATION:

If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

##### INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

##### NOTES TO PHYSICIANS:

No special instructions

## 5 FIRE FIGHTING MEASURES

**FIRE FIGHTING INSTRUCTIONS:**

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

**EXTINGUISHING MEDIA:**

dry chemical, carbon dioxide, foam or water

**HAZARDOUS DECOMPOSITION PRODUCTS:**

Thermal decomposition (destructive fires) yields elemental oxides.

**FLASH POINT:**

> 200F > 93C SETA(CC)

## 6 ACCIDENTAL RELEASE MEASURES

**PROTECTION AND SPILL CONTAINMENT:**

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

**DISPOSAL INSTRUCTIONS:**

The waste characteristics of the absorbed material, or any contaminated soil, should be determined in accordance with provincial regulations. Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement or discharged under provincial regulations. Incinerate or land dispose in an approved landfill.

## 7 HANDLING & STORAGE

**HANDLING:**

Normal chemical handling.

**STORAGE:**

Keep containers closed when not in use. Keep dry.

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE LIMITS**

Consult local authorities for acceptable provincial values.

**CHEMICAL NAME**

SODIUM THIOSULFATE, ANHYDROUS

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

**ENGINEERING CONTROLS:**

Adequate ventilation to maintain air contaminants below exposure limits.

**RESPIRATORY PROTECTION:**

If air-purifying respirator use is appropriate, use a respirator with dust/mist filters.

**SKIN PROTECTION:**

rubber gloves-- Wash off after each use. Replace as necessary.

**EYE PROTECTION:**

airtight chemical goggles

## 9 PHYSICAL & CHEMICAL PROPERTIES

Density	NO DATA	Vapor Pressure (mmHG)	NA
Freeze Point (F)	NA	Vapor Density (air=1)	NA
Freeze Point (C)	NA		
Viscosity(cps 70F,21C)	NA	% Solubility (water)	NA

Odor		None
Appearance		White
Physical State		Powder
Flash Point	SETA(CC)	> 200F > 93C
pH 5% Sol. (approx.)		6.5
Evaporation Rate		NA

NA = not applicable      ND = not determined

## 10 STABILITY & REACTIVITY

### STABILITY:

Stable under normal storage conditions.

### HAZARDOUS POLYMERIZATION:

Will not occur.

### INCOMPATIBILITIES:

May react with strong oxidizers.

### DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

### INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"B"

## 11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT: >2,000 mg/kg

NOTE - Estimated value

Dermal LD50 RABBIT: >2,000 mg/kg

NOTE - Estimated value

## 12 ECOLOGICAL INFORMATION

### AQUATIC TOXICOLOGY

No Data Available.

### BIODEGRADATION

No Data Available.

## 13 DISPOSAL CONSIDERATIONS

Incinerate or bury in approved landfill. Please be advised that there may be additional local or provincial requirements relating to the disposal of waste. Consult provincial and local regulations regarding the proper disposal of this material.

## 14 TRANSPORT INFORMATION

### Transportation of Dangerous Goods:

Proper Shipping Name: Not Regulated

## 15 REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**CEPA:**

All components of this product comply with substance notification requirements under CEPA.

**WHMIS CLASSIFICATION:**

NOT REGULATED

## 16 OTHER INFORMATION

NFPA/HMIS		CODE TRANSLATION
Health	1	Slight Hazard
Fire	0	Minimal Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	B	Goggles, Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

### CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
	-----	-----	-----
MSDS status:	03-MAY-1996	REVISED FORMAT	** NEW **
	06-MAY-1999		03-MAY-1996
	06-JUL-2001	2,4,8	06-MAY-1999
	21-AUG-2002	15,16	06-JUL-2001
	22-JUL-2005	16	21-AUG-2002



**MATERIAL SAFETY DATA SHEET**  
**Penreco® Drakeol® Mineral Oil - USP**  
**Grades**

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** Penreco® Drakeol® Mineral Oil - USP Grades  
**Synonyms:** Penreco® Drakeol® 19  
Penreco® Drakeol® 21  
Penreco® Drakeol® 25  
Penreco® Drakeol® 32  
Penreco® Drakeol® 33  
Penreco® Drakeol® 34  
Penreco® Drakeol® 35  
Penreco® Drakeol® 350  
Penreco® Drakeol® 35G  
Penreco® Drakeol® 400  
**Chemical Family:** Petroleum Hydrocarbon  
**Responsible Party:** Penreco  
138 Petrolia Street  
Karns City, PA 16041-9799  
**For Additional MSDSs** 1-800-762-0942  
**Technical Information:** 1-800-245-3952

**EMERGENCY OVERVIEW**

**24 Hour Emergency Telephone Numbers:**

Spill, Leak, Fire or Accident California Poison Control System: (800) 356-3129  
Call CHEMTREC  
North America: (800)424-9300  
Others: (703)527-3887 (collect)

**Health Hazards/Precautionary Measures:** None Anticipated

**Physical Hazards/Precautionary Measures:** Keep away from all sources of ignition.

**Appearance:** Transparent, water-white  
**Physical form:** Liquid  
**Odor:** Odorless

**NFPA Hazard Class:**

Health: 0 (Least)  
Flammability: 1 (Slight)  
Reactivity: 0 (Least)

**HMIS Hazard Class**

Health: 0 (Least)  
Flammability: 1 (Slight)  
Physical Hazard: 0 (Least)

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

No hazardous components identified per 29 CFR 1910.1200.

OTHER COMPONENTS

% WEIGHT

EXPOSURE GUIDELINE

Limits

Agency

Type

White Mineral Oil  
CAS# 8042-47-5

100 (See: Oil Mist, If Generated)

**REFERENCE**

**EXPOSURE GUIDELINE**

	<u>Limits</u>	<u>Agency</u>	<u>Type</u>
Oil Mist, If Generated	5 mg/m3	ACGIH	TWA
CAS# None	10 mg/m3	ACGIH	STEL
	5 mg/m3	OSHA	TWA
	2500 mg/m3	NIOSH	IDLH
	5 mg/m3	NOHSC	TWA

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

1%=10,000 PPM.

All components are listed on the TSCA inventory.

**3. HAZARDS IDENTIFICATION**

**Potential Health Effects:**

**Eye:** Not known to be an eye irritant.

**Skin:** Not known to be a skin irritant. No harmful effects from skin absorption have been reported.

**Inhalation (Breathing):** No harmful effects reported.

**Ingestion (Swallowing):** No harmful effects reported from ingestion.

**Signs and Symptoms:** Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract and diarrhea.

**Cancer:** No evidence of cancer has been demonstrated in several well conducted animal studies.

**Target Organs:** No data available for this material.

**Developmental:** No data available for this material.

**Pre-Existing Medical Conditions:** None Known

**4. FIRST AID MEASURES**

**Eye:** If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

**Skin:** First aid is not normally required. However, it is good practice to wash any chemical from the skin.

**Inhalation (Breathing):** First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air. Seek immediate medical attention.

**Ingestion (Swallowing):** First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

**Note To Physicians:** Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Flash Point: >370°F/>187.8°C ASTM D-92(COC)  
OSHA Flammability Class: Not applicable  
LEL/UEL%: No Data  
Autoignition Temperature: No Data

**Unusual Fire & Explosion Hazards:** This material may burn, but will not ignite readily. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

**Extinguishing Media:** Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

**Fire Fighting Instructions:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

## 6. ACCIDENTAL RELEASE MEASURES

This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

## 7. HANDLING AND STORAGE

**Handling:** Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Use good personal hygiene practices.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and

cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

**Storage:** Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required.

### Personal Protective Equipment (PPE):

**Respiratory:** A NIOSH certified air purifying respirator with a Type 95 (R or P) particulate filter may be used in conjunction with an organic vapor cartridge under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

**Skin:** Not required based on the hazards of the material. However, it is considered good practice to wear gloves when handling chemicals.

**Eye/Face:** While contact with this material is not expected to cause irritation, the use of approved eye protection to safeguard against potential eye contact is considered good practice.

**Other Protective Equipment:** A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Appearance: Transparent, water-white

Physical State: Liquid

Odor: Odorless

pH: No Data

Vapor Pressure (mm Hg): <1

Vapor Density (air=1): >1

Boiling Point/Range: 590°F / 310°C (approximate)

Freezing/Melting Point: No Data

Solubility in Water: Insoluble

Specific Gravity: 0.86-0.88

Evaporation Rate (nBuAc=1): <1

Bulk Density: 7.17 lbs/gal

Flash Point: >370°F / >187.8°C ASTM D-92(COC)

Flammable/Explosive Limits (%): No Data

## 10. STABILITY AND REACTIVITY

**Stability:** Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Conditions To Avoid:** Avoid all possible sources of ignition (see Sections 5 and 7).

**Materials to Avoid (Incompatible Materials):** Avoid contact with strong oxidizing agents.

**Hazardous Decomposition Products:** carbon, nitrogen and sulfur oxides.

**Hazardous Polymerization:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

No definitive information available on carcinogenicity, mutagenicity, target organs or developmental toxicity.

## 12. ECOLOGICAL INFORMATION

Not evaluated at this time

## 13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. However, it should be fully characterized for toxicity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

## 14. TRANSPORT INFORMATION

**DOT Shipping Description:** Not hazardous

**Note:** Material is unregulated unless in container of 3500 gal or more then provisions of 49 CFR Part 130 apply for land shipment.

IMDG: Not regulated

IATA: Not regulated

## 15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health: No  
Chronic Health: No  
Fire Hazard: No  
Pressure Hazard: No  
Reactive Hazard: No

**SARA 313 and 40 CFR 372:**

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

--None--

**California Proposition 65:**

**Warning:** This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

--None Known--

**Carcinogen Identification:**

This material has not been identified as a carcinogen by NTP, IARC, or OSHA.

**EPA (CERCLA) Reportable Quantity:**

--None--

**Canada - Domestic Substances List:** Listed

**WHMIS Class:**

Not regulated

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

This material is listed on the following inventories:

Australian (AICS)  
Canadian (DSL)  
Chinese  
European EC/EINECS  
Japanese ENCS  
Korean (ECL)  
Philippine (PICCS)

## 16. OTHER INFORMATION

Issue Date: 04/09/03

Previous Issue Date: 07/26/01

Revised Sections: New Format

MSDS Number: 776507

Status: Final

**Disclaimer of Expressed and Implied Warranties:**

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

# Material Safety Data Sheet

penreco

## DRAKEOL LT MINERAL OIL N.F. (KARNS CITY)

### MATERIAL SAFETY DATA SHEET

#### # 1. PRODUCT AND COMPANY IDENTIFICATION

DRAKEOL(R) LT MINERAL OIL N.F.

MSDS Number: PEN13391

Version Date: 05/30/2001

Product Name: DRAKEOL(R) LT MINERAL OIL N.F.

Synonyms: PENETECK AND DRAKESOL 260-AT

DRAKEOL 5, 6, 6LP, 6VR, 7, 8, 9, 10, 13, 15, GD

#### Manufacturer

Penreco  
138 Petrolia Street  
Karns City, PA 16041-9799  
USA

#### Phone Numbers

Medical Emergency: 1-800-342-5119 or 1-281-493-2767

Transport Emergency

CHEMTREC (USA): 1-800-424-9300

CHEMTREC (International): 1-703-527-3887

MSDS Assistance: 1-281-293-5550

Internet Address: [www.conoco.com](http://www.conoco.com)

#### 2. COMPONENT INFORMATION

COMPONENT	CAS No.	Wt. %	Hazardous in Blend
White Mineral Oil	8042-47-5	100	No

#### 3. HAZARDS IDENTIFICATION

##### EMERGENCY OVERVIEW

##### APPEARANCE / ODOR

Transparent, water-white liquid / Odorless

##### OSHA REGULATORY STATUS

This material is NOT HAZARDOUS according to the OSHA Hazard Communication Standard, 29CFR 1910.1200.

HMIS Ratings: Health 0; Flammability 1; Reactivity 0.

##### HEALTH EFFECT INFORMATION

PRIMARY ROUTE OF EXPOSURE: Skin.

##### EYE CONTACT:

This product is minimally irritating to the eyes upon direct contact. Based on testing of similar products and/or components.

SKIN CONTACT:

This product is not expected to cause any skin irritation upon direct single or repeated and prolonged contact; however, similar chemical composition products applied to the skin of laboratory animals resulted in minimal to slight dermal irritation.

INHALATION:

This product has a low vapor pressure and is not expected to present an inhalation hazard at ambient conditions. Caution should be taken to prevent aerosolization or misting of this product. See Section 8 for oil mist exposure limits.

INGESTION:

This product is relatively non-toxic by ingestion unless aspiration occurs. Aspiration may lead to chemical pneumonitis which is characterized by pulmonary edema and hemorrhage and may be fatal. Signs of lung involvement include increased respiratory rate, increased heart rate and a bluish discoloration of the skin. Coughing, choking, and gagging are often noted at the time of aspiration. Gastrointestinal discomfort may develop, followed by vomiting with a further risk of aspiration. This product has laxative properties and may result in abdominal cramps and diarrhea.

OTHER:

Exposure to a large single dose, or repeated smaller doses of mineral oil by inhalation, aspiration or ingestion leading to aspiration can lead to lipid pneumonia or lipid granuloma. These are low-grade, chronic, localized tissue reactions. Shortness of breath and cough are the most common symptoms.

See Section 11 - Toxicological Information.

---

4. FIRST AID INFORMATION

EYE CONTACT:

Immediately flush eyes with large amounts of water and continue flushing until irritation subsides. If material is hot, treat for thermal burns and seek immediate medical attention.

SKIN CONTACT:

Remove contaminated clothing. If material is hot, submerge injured area in cold water. If victim is severely burned, remove to a hospital immediately.

INHALATION:

This material has a low vapor pressure and is not expected to present an inhalation exposure at ambient conditions.

INGESTION:

May act as a laxative. Do not induce vomiting due to aspiration hazard. If vomiting should occur, lower head below knees to avoid aspiration. Seek immediate medical attention.

---

5. FIRE AND EXPLOSION INFORMATION

FLAMMABLE PROPERTIES

Flash Point: 320 F (160 C)

Test Method: ASTM D-92 (COC)

Flammable Limits in Air

Upper Percent: No data available

Lower Percent: No data available

Autoignition Temperature: No data available

NFPA Ratings: Health 0; Flammability 1; Stability 0.

EXTINGUISHING MEDIA:

Use dry chemical, foam, or carbon dioxide.

FIRE FIGHTING MEASURES

SPECIAL FIRE FIGHTING PROCEDURES:

Water may be ineffective but can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid.

UNUSUAL FIRE AND EXPLOSION CONDITIONS:

Dense smoke may be generated while burning. Carbon monoxide, carbon dioxide, and other oxides may be generated as products of combustion.

---

6. ACCIDENTAL RELEASE MEASURES

PERSONNEL SAFEGUARDS:

Consult Health Effect Information in Section 3, Personal Protection Information in Section 8, Fire and Explosion Information in Section 5, and Stability and Reactivity Information in Section 10. Remove all sources of ignition.

REGULATORY NOTIFICATIONS:

Notify appropriate authorities of spill.

CONTAINMENT AND CLEAN UP:

Contain spill immediately. Do not allow spill to enter sewers or watercourses. Absorb with appropriate inert material such as sand, clay, etc. Large spills may be picked up using vacuum pumps, shovels, buckets, or other means and placed in drums or other suitable containers.

---

# 7. HANDLING AND STORAGE INFORMATION

HANDLING:

Avoid breathing vapors or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Wash clothing prior to reuse. May be slippery when spilled.

Fire extinguishers should be kept readily available. See NFPA 30 and OSHA 1910.106--Flammable and Combustible Liquids.

STORAGE:

Do not transfer to unmarked containers. Store in closed containers away from heat, sparks, open flame, or oxidizing materials.

---

8. EXPOSURE CONTROLS / PERSONAL PROTECTION INFORMATION

EXPOSURE LIMITS AND GUIDELINES

This product does not contain any components with OSHA or ACGIH exposure limits. If oil mist is generated, exposure limits apply.

Oil Mist                    OSHA PEL:    TWA 5 mg/m<sup>3</sup>  
                                 ACGIH TLV:   TWA 5 mg/m<sup>3</sup>; STEL 10 mg/m<sup>3</sup>

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION:

Eye protection is not required under conditions of normal use. If material is handled such that it could be splashed into eyes, wear plastic face shield or splash-proof safety goggles.

SKIN PROTECTION:

No skin protection is required for single, short duration exposures. For prolonged or repeated exposures, use impervious clothing (boots, gloves, aprons, etc.) over parts of the body subject to exposure. If handling hot material, use insulated protective clothing (boots, gloves, aprons, etc.).

RESPIRATORY PROTECTION:

Respiratory protection is not required under conditions of normal use. If vapor or mist is generated when the material is heated or handled, use an organic vapor respirator with a dust and mist filter. All respirators must be NIOSH certified.

PERSONAL HYGIENE:

Consumption of food and beverage should be avoided in work areas where hydrocarbons are present. Always wash hands and face with soap and water before eating, drinking, or smoking.

ENGINEERING CONTROLS / WORK PRACTICES

VENTILATION:

If vapor or mist is generated when the material is heated or handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations below the specified exposure or flammable limits.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Transparent, water-white liquid
Odor:	Odorless
Vapor Pressure:	<0.1 mm Hg @ 68 F
Vapor Density (air=1):	>1
Evaporation Rate (EE=1):	<1
pH:	No data available
Percent Volatile by Volume:	Nil
Boiling Point:	500-800 F (260-427.7 C)
Volatile Organic Content:	No data available
Melting Point:	Not applicable
Molecular Weight:	Varies
Specific Gravity:	0.83 @ 60/60 F (approximate)
Average Carbon Number:	No data available
Pour Point:	No data available
Viscosity @ 100 F:	No data available
Viscosity @ 40 C:	No data available
Solubility:	Soluble in hydrocarbons, negligible in water
Octanol / Water Coefficient:	Log Kow = No data available

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10. STABILITY AND REACTIVITY INFORMATION

Chemical Stability: Stable.

Conditions to Avoid: High heat and open flame.

Incompatible Materials to Avoid: May react with strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, and

other oxides may be generated as products of combustion.

Hazardous Polymerization: Will not occur.

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11. TOXICOLOGICAL INFORMATION

CARCINOGENICITY:

The International Agency for Research on Cancer (IARC) has concluded that highly refined mineral oils are Group 3 substances, "Not Classifiable as to their carcinogenicity to humans," based on inadequate human and inadequate animal evidence. IARC has also concluded that there is no evidence for the carcinogenicity to experimental animals of white oils when administered by routes other than by intraperitoneal injection.

This product is not carcinogenic according to the OSHA Hazard Communication Standard.

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12. ECOLOGICAL INFORMATION

No information available

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13. DISPOSAL INFORMATION

REGULATORY INFORMATION:

All disposals must comply with federal, state, and local regulations. The material, if spilled or discarded, may be a regulated waste. Refer to state and local regulations. Caution! If regulated solvents are used to clean up spilled material, the resulting waste mixture may be regulated. Department of Transportation (DOT) regulations may apply for transporting this material when spilled.

WASTE DISPOSAL METHODS:

Waste material may be landfilled or incinerated at an approved facility. Materials should be recycled if possible.

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14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

Highway / Rail (Bulk): Not Regulated  
Highway / Rail (Non-Bulk): Not Regulated

The DOT description is provided to assist in the proper shipping classification of this product and may not be suitable for all shipping descriptions.

INTERNATIONAL INFORMATION

Vessel (IMDG): Not Regulated  
Air (ICAO): Not Regulated

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15. REGULATORY INFORMATION

INVENTORIES:

AUSTRALIAN (AICS): Listed.  
CANADIAN (DSL): Listed.  
CHINESE: Listed.  
EUROPEAN EC/EINECS: Listed.  
JAPANESE ENCS: Listed.  
KOREAN (KCL): Listed.  
PHILIPPINE (PICCS): Listed.

U.S. (TSCA): Listed.

U.S. SARA SECTION 313:

This product is not known to contain any SARA, Title III, Section 313 Reportable Chemicals at or greater than 1.0% (0.1% for carcinogens).

U.S. SARA 311 / 312 CATEGORIES

Acute:

Chronic:

Fire:

Pressure:

Reactive:

Not Regulated: X

CANADIAN WHMIS CLASSIFICATION:

Not a Controlled Product under WHMIS.

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16. OTHER INFORMATION

Additional Information: None available.

Prepared By:

MSDS Coordinator

Conoco Inc.

PO Box 2197

Houston, TX 77252

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

# indicates revised section.

End of MSDS

# Material Safety Data Sheet

*Rec'd May 8/06*

Product Name <b>E-FLOC 218</b>	Code <b>EF-218D</b>	Date Completed <b>23-Feb-06</b>
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WHMIS Classification <b>D2A</b>
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TDG Classification <b>Not Regulated</b>
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HAZARDOUS INGREDIENTS	%WT/WT	CAS NO.	TOXICITY DATA (LD50 & LC50)
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Crystalline Silica (SiO2)	15-40	7631-86-9	ACGIH TLV - 0.1 mg/m3 Low concentration of crystalline silica in the form of quartz, cristobalite and tridymite may be present in airborne dust.
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Copolymer of acrylamide and acrylic acid	5-15	009003-05-8	LD50 Oral (rat) >5000mg/Kg
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## PHYSICAL DATA FOR PRODUCT

Physical State Powder	Vapour Pressure N/A	Vapour Density N/A
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pH Neutral	Evaporation Rate N/A
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Boiling Point (C) N/A	Sp. Gravity N/A	Freezing Point (C) N/A	Solubility in Water Insoluble. Forms gel and colloidal suspension.
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Appearance and Odour  
 White granular powder with no odour.

**FIRE AND EXPLOSION DATA FOR PRODUCT**

**Fire Extinguishing Substances (√)**

Water fog      CO2      Other  
Foam      Dry Chem

Detail: N/A

**Reactivity Data For Product**

**INCOMPATIBILITY (√)**

Acid      Base      Water      Oxidizing Material

Other

Detail: N/A

**Hazardous Decomposition Products**  
None known.

**Chemical Stability**  
Stable under normal conditions.

**Hazardous Combustion Products**  
Product will not support combustion.

**Special Fire Fighting Procedures**  
N/A

Flammable Limits in air, % by vol. Non-Flammable:

Upper N/A	Lower N/A	Flash Point (Test Method) N/A
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**HEALTH HAZARD INFORMATION FOR PRODUCT**

**Emergency and First Aid Procedures**

**Inhalation:** Remove from exposure. Get fresh air. If symptoms or irritation persists contact physician. Inhalation may aggravate existing respiratory illness.

**Ingestion:** No adverse effects.

**Eyes:** Flush with plenty of water until irritation ceases.

**Skin:** Wash with soap and water.

**EFFECTS OF OVEREXPOSURE (ACUTE AND CHRONIC)**

**Inhalation :** Acute (short term) exposure to high dust levels may cause irritation of respiratory tract resulting in a dry cough. Chronic (long term) exposure to free silica containing dust where levels are higher than TLV may lead to development of silicosis or other respiratory problems. Persistent dry rough and laboured breathing upon exertion

**Ingestion :** No adverse effects.

**Eyes :** Mechanical irritant.

**Skin :** Possible drying resulting in dermatitis.

**PREVENTIVE MEASURES**

**Spillage** Scoop or vacuum discharged material. Avoid making dust. Floor may become slippery when wetted.

**Waste Disposal Method** Dispose according to local, provincial and federal regulations. Observe environmental regulations.

**Handling & Storage Requirements** Follow acceptable storage procedures.

**Ventilation** Use with adequate ventilation. Local ventilation preferred.

**Respiratory Protection** Use approved dust masks where dust occurs. Use NIOSH/MSHA respirator approved for silica bearing dust when free silica exceeds TLV.

**Eye Protection** Chemical workers goggles suggested.

**Other Protection** Not required.

# Material Safety Data Sheet

*Rec'd May 8/06*

Product Name <b>EC-483</b>	Code <b>EC-483</b>	Date Completed <b>23-Feb-06</b>
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WHMIS Classification	Not Controlled
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TDG Classification	Not Regulated
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HAZARDOUS INGREDIENTS	%WT/WT	CAS NO.	TOXICITY DATA (LD50 & LC50)
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Copolymer of acrylamide	100	69418-26-4	LD50 (rat)>5000mg/Kg
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## PHYSICAL DATA FOR PRODUCT

Physical State Powder	Vapour Pressure N/A	Vapour Density N/A	
pH N/A	Evaporation Rate N/A		
Boiling Point (C) N/A	Sp. Gravity 1.00-1.05	Freezing Point (C) N/A	Solubility in Water approx. 1%

Appearance and Odour  
 Cream coloured powder.

**FIRE AND EXPLOSION DATA FOR PRODUCT****Fire Extinguishing Substances (√)**

Water fog    ✓ CO2  
 ✓ Foam        ✓ Dry Chem

Other

Detail: N/A

**Reactivity Data For Product****INCOMPATIBILITY (√)**

Acid    Base    Water    Oxidizing Material

Other

Detail:

N/A

**Hazardous Decomposition Products**

Thermal decomposition expected to produce carbon monoxide, carbon dioxide and various nitrous oxides.

**Chemical Stability**

Stable under normal conditions.

**Hazardous Combustion Products**

N/A

**Special Fire Fighting Procedures**

Wear self-contained breathing apparatus. These products become very slippery when exposed to water.

**Flammable Limits in air, % by vol. Non-Flammable:**

Upper	N/A	Lower	N/A	Flash Point (Test Method)	N/A
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**HEALTH HAZARD INFORMATION FOR PRODUCT****Emergency and First Aid Procedures**

**Inhalation:** Remove from exposure. Get fresh air. If symptoms or irritation persists contact physician. Inhalation may aggravate existing respiratory illness.

**Ingestion:** Get medical attention. Drinking fluids may cause the ingested product to swell. Do not induce vomiting.

**Eyes:** Immediately flush with water, especially under the eyelids, continuing for about 15 minutes. Get medical attention.

**Skin:** Product is a minor skin irritant but may cause skin redness to individuals with sensitive skin. Wash skin with soap and water after contact.

**EFFECTS OF OVEREXPOSURE (ACUTE AND CHRONIC)**

**Inhalation :** Acute (short term) exposure to high dust levels may cause irritation of respiratory tract resulting in a dry cough.

**Ingestion :** May cause discomfort or gastrointestinal disturbance. These products have low oral toxicity.

**Eyes :** Dust and solutions of the product may irritate eyes.

**Skin :** Prolonged or repeated contact may cause irritation.

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**PREVENTIVE MEASURES**

**Spillage** Scoop or vacuum discharged material. Avoid making mist. Floor may become slippery when wetted.

**Waste Disposal Method** Dispose according to local, provincial and federal regulations. Observe environmental regulations.

**Handling & Storage Requirements** Store above freezing point of water, and no hotter than 40C. Keep away from source of ignition.

**Ventilation** Local exhaust if dusting occurs. Natural ventilation adequate in absence of dust.

**Respiratory Protection** Use approved dust masks where dust occurs. Use NIOSH/MSHA respirator approved for dust.

**Eye Protection** Safety glasses for normal handling conditions, and wear goggles when handling solutions of the product.

**Other Protection** Wear rubber gloves and full work clothing, and wear protective clothing if repeated splashing of solutions is probable.

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# TECHNICAL DATA

## E-SAN

### Quaternary Ammonium Based Sanitizer

#### DESCRIPTION

This product is a dual quaternary ammonium based liquid sanitizer. **E-San 10%** is very effective against a wide variety of microorganisms at low concentrations. It is medium foaming, non-irritating to the skin and non-corrosive. When used at the appropriate dilutions, **E-San 10%** can be used as a disinfectant and deodorizer.

*Virucidal Activity: E-San, when used on pre-cleaned environmental inanimate hard surfaces at 22 ml per 4 liters of water exhibits effective Virucidal activity against Avian Influenza A/Turkey/Wisconsin (causative agent of an acute avian lower respiratory tract infection).*

#### BIOCIDAL EFFICACY

##### AOAC Use Dilution Test

	<u>ATCC#</u>	<u>Phenol Resistance</u>	<u>ppm (Active Quat)</u>
Staphylococcus aureus	6538	1/60	450
Salmonella choleraesuis	10708	1/90	400
Pseudomonas aeruginosa	15442	1/85	550

##### Chambers Hard Water Test AOAC

Hard water tolerance (as ppm CaCO<sub>3</sub>) at 200 ppm of active quat, 99.999% kill in 30 seconds against:

Staphylococcus aureus (#6538)	750
Escherichia coli (#11229)	750

#### DIRECTIONS

Surfaces should be thoroughly cleaned prior to the application of **E-San 10%**, as organic matter will reduce its efficacy.

For **sanitizing**, use 2 ml of **E-San 10%** per liter of water (200 ppm).

For **disinfecting**, use 4 ml of **E-San 10%** per liter of water (400 ppm).

For **deodorizing**, use 10 ml of **E-San 10%** per liter of water (1000 ppm).

**E-San 10%** is most effective when applied at a temperature of 40-77°F.

#### FOOD PROCESSING

This product has been approved for use in food establishments. If applied at 200 ppm or less, **E-San 10%** does not need to be rinsed prior to start up of production. It is registered and approved according to the pest control products act, Reg.# 24968 and DIN # 0223 0389.

#### CONTAINS

5% N-Alkyl dimethyl benzyl ammonium chloride, 5% N-Alkyl dimethyl ethyl benzyl ammonium chloride

FOR FOOD PLANT AND INDUSTRIAL USE ONLY



**E-Chem**  
Epsilon Chemicals Ltd.

1926-94 Street, Edmonton, Alberta, T6N 1J3. 1-800-361-6348  
www.epsilonchemicals.com

# Material Safety Data Sheet

Product Name <b>E-SAN 10% SOLUTION</b>	Code <b>ECJ-465</b>	Date Completed <b>23-Feb-06</b>
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WHMIS Classification Not Controlled (PCP No.24968, DIN 02230389)
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TDG Classification Not Regulated
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HAZARDOUS INGREDIENTS	%WT/WT	CAS NO.	TOXICITY DATA (LD50 & LC50)
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N - Alkyl (60% C14, 30% C16, 5% C12, 5% C18), dimethyl benzyl ammonium chloride	3-7%	68424-85-1	LD50 Oral (rat) .43 ml/kg
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N-Alkyl (68%C13,32%C14)dimethyl ethyl benzyl ammonium chlorid	3-7%	68956-79-6	N/A
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## PHYSICAL DATA FOR PRODUCT

Physical State Liquid	Vapour Pressure N/A	Vapour Density N/A
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pH Neutral	Evaporation Rate N/A
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Boiling Point (C) 100	Sp. Gravity 0.995	Freezing Point (C) 0	Solubility in Water 100%
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Appearance and Odour  
 Clear, colourless liquid.

**FIRE AND EXPLOSION DATA FOR PRODUCT****Fire Extinguishing Substances (√)**Water fog     CO2Other    **Detail:** N/A Foam    Dry Chem**Reactivity Data For Product****INCOMPATIBILITY (√)**

Acid    Base    Water    Oxidizing Material

Other

**Detail:**

N/A

**Hazardous Decomposition Products**

Thermal decomposition may produce: Carbon dioxide, carbon monoxide, ammonia, nitrous oxides and hydrogen chloride.

**Chemical Stability**

Stable.

**Hazardous Combustion Products**

See Hazardous Decomposition Products.

**Special Fire Fighting Procedures**

Wear self-contained breathing apparatus and full protective clothing.

**Flammable Limits in air, % by vol. Non-Flammable:**

Upper

N/A

Lower

None

Flash Point (Test Method)

N/A

**HEALTH HAZARD INFORMATION FOR PRODUCT****Emergency and First Aid Procedures****Inhalation:** Remove from exposure. If breathing is difficult or discomfort persists, get medical attention.**Ingestion:** Drink milk, egg whites, gelatin solution or if these are not available drink large quantities of water. Call a physician. Do not induce vomiting.**Eyes:** Flush with plenty of water for 15 minutes. Get medical attention.**Skin:** Flush with water.

**EFFECTS OF OVEREXPOSURE (ACUTE AND CHRONIC)**

Inhalation : None.

Ingestion : May cause mucosal damage, nausea, vomiting and diarrhea.

Eyes : Avoid contact with eyes. Will cause irritation.

Skin : Avoid prolonged contact with skin. Irritation may occur.

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**PREVENTIVE MEASURES**

Spillage Flush with water. Mop up.

Waste Disposal Method Local, provincial and federal regulations concerning health and pollution should be observed to determine approved disposal procedures.

Hand. & Stor. Requir. Keep container closed when not in use. Store away from strong oxidizers and reducing agents.

Ventilation General ventilation should be sufficient.

Resp. Protection Not normally required in well ventilated areas. Use approved respiratory protection if product is misted.

Eye Protection Safety glasses should be worn.

Other Protection Not normally necessary, rubber gloves may be worn.

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# Handy & Harman of Canada, Limited

## MATERIAL SAFETY DATA SHEET

<b>SECTION 1 MATERIAL IDENTIFICATION AND USE</b>		CODE BA-1 rev 10/03
<b>MATERIAL NAME IDENTIFIER: EASY-FLO, TRIMET, BRAZE</b>		
Manufacturer's Name: <b>HANDY &amp; HARMAN OF CANADA, LIMITED</b>		Street Address: <b>290 CARLINGVIEW DRIVE</b>
City: <b>REXDALE</b>	Province/State/Country: <b>ONTARIO, CANADA M9W 5G1</b>	Emergency Phone No: <b>(416) 675-1860</b>
Supplier's Name:		Street Address:
City:		Emergency Phone No:
Chemical Name: Silver Brazing Filler Metal	Chemical Family: Cadmium Silver Brazing Alloys	Chemical Formula: Refer To Chart
Molecular Weight: N/Avl.	Trade Names, Synonyms: Refer To Chart	Material Use: Filler Metals For Brazing

<b>SECTION 2 HAZARDOUS CHEMICAL COMPONENTS</b>		
<b>Chemical Component</b>	<b>CAS Number</b>	<i>(Refer to filler metal chart below for nominal composition %)</i>
SILVER (Ag)	7440-22-4	ACGIH: TLVs (2000) 0.1 mg/m <sup>3</sup> TWA (metal) OSHA PEL: 0.01 mg/m <sup>3</sup> TWA LD <sub>50</sub> N/Avl. LC <sub>50</sub> N/Avl.
COPPER (Cu)	7440-50-8	ACGIH: TLVs (2000) 0.2 mg/m <sup>3</sup> TWA (fume); 1.0 mg/m <sup>3</sup> TWA (dusts & mists) OSHA PELs: 0.1 mg/m <sup>3</sup> TWA (fume); 1.0 mg/m <sup>3</sup> TWA (dusts & mists) LD <sub>50</sub> 470 mg/kg oral-mouse LC <sub>50</sub> N/Avl.
ZINC (Zn)	7440-66-6	ACGIH: TLVs (2000) 5.0 mg/m <sup>3</sup> TWA as ZnO fume; 10.0 mg/m <sup>3</sup> STEL as ZnO fume 10.0 mg/m <sup>3</sup> TWA as ZnO dust OSHA PEL: 5.0 mg/m <sup>3</sup> TWA LD <sub>50</sub> 7950 oral-mouse LC <sub>50</sub> N/Avl.
CADMIUM (Cd)	7440-43-9	ACGIH: TLVs (2000) 0.01 mg/m <sup>3</sup> TWA; 0.002 mg/m <sup>3</sup> TWA (respirable fraction) OSHA PEL: (29CFR 1910.1027): 0.05 mg/m <sup>3</sup> TWA LD <sub>50</sub> 225 mg/kg oral-rat LC <sub>50</sub> 25 gm/m <sup>3</sup> /30m inhal.-rat
NICKEL (Ni)	7440-02-0	ACGIH: TLVs (2000) 1.5 mg/m <sup>3</sup> TWA (metal)(inhalable fraction); 0.2 mg/m <sup>3</sup> TWA (insoluble compounds, as Ni)(inhalable fraction) OSHA PEL: 1.0 mg/m <sup>3</sup> TWA metal & insoluble compounds as Ni LD <sub>50</sub> N/Avl. LC <sub>50</sub> N/Avl.
PHOSPHOROUS (P) (red allotropic form)	7723-14-0	ACGIH: TLVs N/Avl. OSHA PEL: N/Avl. LD <sub>50</sub> N/Avl. LC <sub>50</sub> N/Avl.

### HANDY & HARMAN BRAZING FILLER METALS CHART

FILLER METAL NAME	AWS / SFA CLASS	Nominal Composition, %					Solidus (Melt Point) °F °C	Liquidus (Flow Point) °F °C	Brazing Range		Specific Gravity
		Ag	Cu	Zn	Cd	Others			°F	°C	
EASY-FLO	BAG-1a	50	15.5	16.5	18		1160-625	1175-635	1175-1375	635-745	9.45
EASY-FLO 3	BAG-3	50	15.5	16.5	16	3Ni	1170-630	1270-690	1270-1400	690-760	9.52
TRIMET 258		1-2-1 ratio EASY-FLO 3, both sides of copper					1170-630	1270-690	1270-1400	690-760	9.22**
TRIMET 104		1-4-1 ratio EASY-FLO 3, both sides of copper					1170-630	1270-690	1270-1400	690-760	9.22**
EASY-FLO 45	BAG-1	45	15	16	24		1125-605	1145-620	1145-1350	620-730	9.42
EASY-FLO 43		43	16	20	21		1125-605	1145-620	1145-1350	620-730	9.40
EASY-FLO 38		38	20	22	20		1125-605	1200-650	1200-1400	650-760	9.20
EASY-FLO 35	BAG-2	35	26	21	18		1125-605	1295-700	1295-1400	700-760	9.18
EASY-FLO 30	BAG-22	30	27	23	20		1125-605	1310-710	1310-1400	710-760	8.76
EASY-FLO 25	BAG-27	25	35	26.5	13.5		1125-605	1375-745	1375-1400	745-760	8.94
EASY-FLO 25 HC	BAG-33	25	30	27.5	17.5		1110-600	1315-715	1315-1400	715-760	8.90
BRAZE 053		5			95		640-340	740-395	740-900	395-480	8.82
BRAZE 056		5		16.6	78.4		480-250	600-315	600-850	315-455	8.55
BRAZE 440		44	27	13	15	1P	1100-595	1220-660	1220-1400	660-760	9.22

\*\*By Volume

# Handy & Harman of Canada, Limited

## MATERIAL SAFETY DATA SHEET

### SECTION 3

### PHYSICAL DATA

CODE BA-1 rev 10/03

**Physical State:** Gas  Liquid  Solid   
**Odour Threshold (ppm):** N/Avl.  
**Evaporation Rate:** Solid - N/Avl.  
**% Volatile (By Volume):** N/Avl.  
**Specific Gravity:** Refer To Chart

**Odour & Appearance:** No Odour; Solid Metal Wire, Strip, Powder, Paste  
**Vapour Pressure (mm.Hg):** N/Avl. **Vapour Density (AIR=1):** Solid-N/Avl.  
**Boiling Point (°C):** Solid - N/Avl. **Freezing Point (°C):** Solid - N/Avl.  
**Solubility In Water (20°C):** Insoluble **pH:** N/Avl.  
**Coeff.-Water Oil Disp.:** N/Avl.

### SECTION 4

### FIRE AND EXPLOSION DATA

**Flammability:** Yes  No  **If yes, under which conditions?**  
 Dust, powder and fumes are flammable when exposed to flame or by chemical reaction with oxidizing agents (see Section 5 for incompatible materials). Fires or explosions involving these alloys will release potentially toxic emissions of metal or metal oxide fumes (see Section 2 for hazardous components).  
**Means Of Extinction:** Dry powder for metal fires. Do not use water on dust, powder or fume fires.  
**Special Procedures:** Use self-contained breathing apparatus with full face-piece operated in pressure demand or other positive pressure mode.  
**Flashpoint(°C) & Method:** Solid Metal - Non-Flammable **Upper Explosion Limit (% By Volume):** N/Avl.  
**Lower Explosion Limit (%By Volume):** Solid Metal-N/Avl. **Auto Ignition Temperature (°C):** Solid Metal - N/Avl.  
**TDG Flammability Classification:** None **Hazardous Combustion Products:** Solid Metal - N/Avl.  
**Sensitivity To Impact Explosion Data:** N/Avl. **Rate Of Burning:** N/Avl.  
**Explosive Power:** N/Avl. **Sensitivity To Static Discharge:** N/Avl.

### SECTION 5

### REACTIVITY DATA

**\*\*\*AVOID DISPERSION OF FINELY DIVIDED PARTICLES IN AIR\*\*\***

**Chemical Stability:** Yes  No  **If yes, under which conditions?** Normal Ambient Environment.  
**Incompatibility With Other Substances:** Yes  No  **If yes, which ones?**  
 Strong Oxidizers; Se; Te; Mg; Chlorates; NH<sub>3</sub>; HNO<sub>3</sub>; Azides; Ethanol; Ethylenimine; ClF<sub>3</sub>; Inorganic and Organic Peroxides; Peroxyformic Acid; Chlorine and Fluorine; Permonosulphuric Acid; CrO<sub>3</sub>; Mn and Ca Chlorides; CS<sub>2</sub>; Hydrazine Mononitrate; Nitrobenzene; Fe (CO)<sub>5</sub>; Seleninyl Bromide.  
**Reactivity And Under What Conditions:** Stable under normal temperatures and pressures.  
**Hazardous Decomposition Products:** Hazardous polymerization will not occur. Upon heating, danger is mostly from inhalation of cadmium (oxide) fumes. Dusts and fumes of cadmium affect the respiratory tract and may affect the kidneys. Severe overexposure can be fatal. Overexposure to elemental oxide fumes or dust can cause nausea and metal fume fever. Use hooded exhaust ventilation to carry all fumes away from work area and, if necessary, use air supplied respirator (see Section 7). Thought should be given to the heating methods, flux and base metals being joined which could emit fumes on heating depending on their particular chemistry.  
**Avoid overheating (see chart, Brazing Range).**

### SECTION 6

### TOXICOLOGICAL PROPERTIES

**Route Of Exposure:** *Inhalation* Inhalation of the components of these products are not known to present a significant risk to health when used according to instructions and with appropriate protective measures (see Section 7). Inhalation of the component/elements has been reported to cause one or more of the following symptoms/effects upon excessively high and/or prolonged inhalation/exposure.

<b>SILVER:</b>	<b>Acute</b>	May cause grey discoloration of mucous membranes.
	<b>Chronic</b>	May produce argyria, a permanent blue-grey discoloration of the skin, eyes, mucous membranes, and the respiratory tract.
<b>COPPER:</b>	<b>Acute</b>	Acute exposure to dust or fume may cause respiratory tract irritation, fever, muscle ache, chills, cough, weakness, and a metallic taste.
	<b>Chronic</b>	Exposure may cause damage to the liver, kidney, spleen, pancreas, and brain.
<b>ZINC:</b>	<b>Acute</b>	Exposure to zinc oxide fume may cause respiratory tract irritation and "metal fume fever", which is characterized by one or more of the following symptoms: metallic taste, dry throat, cough, chills, fever, tightness of chest, dyspnea, headache, nausea, vomiting, and fatigue.
	<b>Chronic</b>	Exposure unlikely.
<b>CADMIUM:</b>	<b>Acute</b>	Acute exposure to cadmium oxide fume by inhalation may produce pneumonitis, tracheobronchitis, and pulmonary edema.
	<b>Chronic</b>	Continued overexposure to cadmium (dust or fume) may produce gastrointestinal symptoms, anemia, rhinitis, discoloration of teeth, micro fractures, kidney disease and cancer.
<b>NICKEL</b>	<b>Acute</b>	Dust or fumes may produce headache, nausea, vertigo, asthma, and pulmonary edema.
	<b>Chronic</b>	May increase the risk of cancer to the nasopharynx, lungs, prostate, and kidney.
<b>PHOSPHOROUS:</b>	<b>Acute:</b>	When heated in air, fume is corrosive and irritating to eyes, nose, throat, and mucous membranes.
	<b>Chronic</b>	Unlikely.

# Handy & Harman of Canada, Limited

## MATERIAL SAFETY DATA SHEET

### SECTION 6 (cont'd) TOXICOLOGICAL PROPERTIES

CODE BA-1 rev 10/03

#### Miscellaneous Toxicological Information

**Cadmium** is regulated as a carcinogen by the Occupational Safety and Health Administration per 29CFR 1910.1027. It is also classified as a potential human carcinogen by the following organizations (with respective sub-classifications):

1. IARC (Group 1)
2. NTP (Groups 2A & 2B)

Cadmium has been found to cause reproductive abnormalities, including reduced birth weights, reduced viability, and behavioural alterations among offspring of female rodents. Male rodents exposed to Cadmium have been found to have testicular damage, reduction in sperm counts, and reduced fertility. Cadmium has also produced mutagenic effects in mammalian cell cultures.

**Nickel** is classified as a potential human carcinogen by the following organizations (with respective sub-classifications):

1. IARC (Group 2B)
2. NTP (Group 2B)

Nickel has also produced fetotoxic and teratogenic effects in animal studies, and mutagenic responses in mammalian cell cultures.

Neither Silver, Copper, Phosphorous, nor Zinc are classified as potential or demonstrated human carcinogens by IARC, NIOSH, NTP, OSHA, or ACGIH.

**Health Conditions Aggravated By Exposure:** Pre-existing pulmonary diseases (e.g., bronchitis, emphysema) may be aggravated by inhalation exposure to these materials, particularly as fume. Exposure to cadmium and nickel by inhalation and/or ingestion may aggravate pre-existing disease of the liver, kidneys, gastrointestinal system, central nervous system, and musculoskeletal system.

#### Route Of Exposure

**Skin:** In solid form, materials are not known to be hazardous. In finely divided form, skin contact may produce localized irritation, localized argyria, skin discolouration, and contact or allergic dermatitis.

**Eyes:** Exposure of the eyes to finely divided form of these materials may produce localized argyria, irritation, conjunctivitis, and ulceration of the cornea.

**Ingestion:** Finely divided form of these materials may produce gastric irritation, vomiting, abdominal pain, hemorrhage, and diarrhea. Long-term chronic ingestion may produce damage to the liver, kidney, spleen, pancreas, musculoskeletal system, blood-forming organs, and central nervous system.

<b>LD<sub>50</sub> Of Material - Specify Species And Route:</b> N/Avl.	<b>LC<sub>50</sub> Of Material Specify Species:</b> N/Avl.	<b>Exposure Limit Of Material:</b> N/Avl.	<b>Irritancy Of Material:</b> N/Avl.
<b>Sensitizing Capability Of Material:</b> N/Avl.	<b>Carcinogenicity Of Material:</b> N/Avl.	<b>Reproductive Effects Of Material:</b> N/Avl.	<b>Synergistic Materials:</b> N/Avl.

### SECTION 7 PREVENTATIVE MEASURES

**Personal Protective Equipment:** Personal protective equipment will be required when using these materials. The nature of the processing activity will determine what form of equipment is necessary, i.e., safety glasses, respirator, protective clothing, etc. Personal protective equipment should not be substituted for proper handling and engineering controls to maintain exposure limits below applicable standards.

**Gloves:** Wear appropriate protective gloves to prevent injury from the hazards of brazing and/or repeated contact with finely divided material. Avoid flammable fabrics.

**Respiratory:** Local exhaust, mechanical ventilation, and/or respiratory equipment may be required to maintain a protection factor appropriate to the airborne concentrations of the contaminants generated and provide sufficient clean air for breathing. If exposure levels exceed OSHA PELs, wear a NIOSH/MSHA-approved respirator (or other approving authority) for protection from the airborne contaminants. All adjacent persons in the immediate vicinity of brazing or "soldering" operations shall be similarly protected as necessary by ventilation or approved respirators.

**Eyes:** Wear eye protection (safety glasses, dust-proof goggles) adequate to prevent eye contact with this material in finely divided form and to prevent eye injury from the hazards of brazing. Plastic-frame safety spectacles with side shields and filter lenses (shade #3 or #4) are recommended.

**Footwear:** Refer to workplace safety regulations.

**Clothing:** Avoid flammable fabrics. Wear appropriate clothing to prevent skin injuries from the hazards of brazing or handling powders.

**Other Protection:** Practice good housekeeping and personal hygiene procedures. To avoid ingestion of material, wash hands and face before eating, drinking, or using tobacco or cosmetics.

Brazing alloys may be used with a separately applied flux which, when heated, may emit irritating and/or toxic gases and fumes. Consult the MSDS for the specific flux in use to determine its hazards and appropriate protective measures. For general guidance, refer to American National Standards Institute (ANSI) Z49.1, "Safety in Welding and Cutting" (American Welding Society, Miami, FL 33135).

**Engineering Controls:** Adequate ventilation, sinks, showers, and eyewash stations should be provided. The best industrial control practice is to maintain concentrations of all chemical fumes and dusts as low as is practical.

**Leak And Spill Procedure:** If metal is molten, allow to solidify and cool. Clean up any spilled material so as to minimize dispersion of dusts. Wet sweeping or vacuuming using HEPA, or similarly approved filtration, are recommended methods.

**Waste Disposal:** Return to manufacturer for reclaim. **Sara Title III - Hazard Classes:** Acute Health Hazard; Chronic Health Hazard.

# Handy & Harman of Canada, Limited

## MATERIAL SAFETY DATA SHEET

### SECTION 7 (cont'd)

### PREVENTATIVE MEASURES

CODE BA-1 rev 10/03

**Handling Procedure And Equipment:** Avoid heating above brazing range (*see chart, Section 2*) as excessive fumes may result. (cadmium boils at 1409°F/765°C, zinc boils at 1665°F/910°C). Use sufficient flux or atmosphere to protect the metals and minimize oxidation/vapourization during use.

**Storage Requirements:** Avoid storage near incompatible materials (*see also Section 5*). Also avoid conditions which create toxic fumes or dusts. Wash exposed skin after handling material. Stable at room temperature.

**Special Shipping Information:** No special requirements.

**WHMIS Classification:** Class D, Division 1, Subdivision B.

### SECTION 8

### FIRST AID MEASURES

#### Emergency And First Aid Procedures

**Inhalation:** Move victim to fresh air at once. Give oxygen if breathing is laboured, artificial respiration if victim is not breathing. Keep person warm and quiet. Get medical attention immediately.

**Skin:** Contact in solid forms is not known to be hazardous. If clothing is contaminated with finely divided particles, remove. Wash affected area with large quantities of water for at least 5 minutes. Get medical attention if necessary.

**Eyes:** Flush immediately with large amounts of water for at least 15 minutes while lifting the lower and upper eyelids. If irritation continues, get medical attention.

**Ingestion:** If person is conscious, give large amounts of water and induce vomiting. Seek medical attention. If person is unconscious or convulsive, get immediate medical attention.

**\*\*\*SEEK MEDICAL ATTENTION IN ALL CASES OF EXPOSURE\*\*\***

#### SIGNS AND SYMPTOMS OF EXPOSURE:

#### Acute

**Inhalation:** Chills, fever, aching muscles, sneezing, dry throat, coughing, constriction of throat, nausea, irritation of nose and trachea, discolouration of mucous membranes, difficulty in breathing, chest pain, headache.

**Skin:** Particles may cause irritation, pain, nausea, vomiting.

**Eyes:** Particles may cause irritation, redness, itching.

**Ingestion:** Nausea, vomiting, headache, diarrhea, fever, and abdominal pain.

#### Chronic

**Inhalation:** Cough, difficulty in breathing, laryngitis, discolouration of mucous membranes, kidney and liver disorders.

**Skin:** May cause argaria, discolouration, contact dermatitis and/or allergic sensitization among hyper-susceptible individuals.

**Eyes:** Irritation. May cause, particularly in powder form, argaria, conjunctivitis, and/or ulceration of the cornea.

**Ingestion:** May cause damage to the liver, kidneys, musculoskeletal system and nervous system.

**Medical Conditions Generally Aggravated By Exposure:** (*see Section 6*).

**Sources Used:** Canadian Centre For Occupational Health And Safety, Hamilton, Ontario; American Welding Society, Miami, Florida; ACGIH, Cincinnati, Ohio; Lucas-Milhaupt Inc., Cudahy, Wisconsin.

**Additional Information:** The information contained herein is only for the manufactured product. The composition and hazards of any resultant fumes due to heating methods, filler metal alloy, flux and base metals employed may vary significantly.

Brazing fumes consist of various airborne substances that may create hazards to health when they are inhaled or swallowed. The degree of hazard to the worker(s) in the work area depends upon the composition of the total fume, the concentration of contaminants in the breathing air and the time-length of exposure to it. It is the responsibility of the user/employer to ensure the suitability of the material use and that TLV, TWA, and STEL values are not exceeded.

Assessment of the possible exposure to the worker(s) to hazardous fumes, when required, should be carried out by a competent person and may involve air concentration measurements.

### SECTION 9

### PREPARATION DATE OF MSDS

**PREPARED BY:**  
Marketing Department

**PHONE NO:**  
(416) 675-1860

**DATE:**  
Revised 10/03

# Material Safety Data Sheet

*Rec'd May 8/06*

Product Name <b>NI FOAM KILL</b>	Code <b>T-646</b>	Date Completed <b>23-Feb-06</b>
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WHMIS Classification <b>D2B</b>
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TDG Classification <b>Not Regulated</b>
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HAZARDOUS INGREDIENTS	%WT/WT	CAS NO.	TOXICITY DATA (LD50 & LC50)
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Polyoxyethylene/Polyoxypropylene Block Non-Ionic Surfactant	10-30%	N/A	N/A
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## PHYSICAL DATA FOR PRODUCT

Physical State <b>Liquid</b>	Vapour Pressure <b>N/A</b>	Vapour Density <b>N/A</b>
pH <b>Neutral</b>	Evaporation Rate <b>N/A</b>	
Boiling Point (C) <b>N/A</b>	Sp. Gravity <b>1.0073</b>	Freezing Point (C) <b>N/A</b>
	Solubility in Water <b>100%</b>	

Appearance and Odour  
 Slightly viscous clear liquid with no strong odour.

**FIRE AND EXPLOSION DATA FOR PRODUCT**

**Fire Extinguishing Substances (√)**

Water fog    ✓ CO2                      Other  
✓ Foam            ✓ Dry Chem

Detail: N/A

**Reactivity Data For Product**

**INCOMPATIBILITY (√)**

Acid    Base    Water    Oxidizing Material

Other

Detail:  
N/A

**Hazardous Decomposition Products**  
Carbon monoxide, carbon dioxide on combustion.

**Chemical Stability**  
Stable.

**Hazardous Combustion Products**  
Will produce carbon oxides.

**Special Fire Fighting Procedures**  
Do not use direct water stream. Wear self contained breathing equipment.

Flammable Limits in air, % by vol. Non-Flammable:

Upper	N/A	Lower	N/A	Flash Point (Test Method)	N/A
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**HEALTH HAZARD INFORMATION FOR PRODUCT**

**Emergency and First Aid Procedures**

**Inhalation:** Remove to fresh air.

**Ingestion:** Drink large amounts of milk or water. Do not induce vomiting. Get medical attention.

**Eyes:** Rinse with water for 15 minutes. Get medical attention.

**Skin:** Rinse with warm water.

**EFFECTS OF OVEREXPOSURE (ACUTE AND CHRONIC)**

**Inhalation :** May cause upper respiratory tract irritation and dizziness.

**Ingestion :** May cause nausea, vomiting and diarrhea.

**Eyes :** May cause eye irritation.

**Skin :** May cause irritation if prolonged contact occurs.

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**PREVENTIVE MEASURES**

**Spillage** For larger spills, contain and pick-up. For small spills, wash area with warm water.

**Waste Disposal Method** Dispose in accordance with local, provincial and federal regulations.

**Handling & Storage Requirements** Store in cool, well ventilated area away from strong oxidizers. Keep container closed when not in use.

**Ventilation** Use with adequate ventilation.

**Respiratory Protection** Not normally necessary.

**Eye Protection** Safety glasses with side-shields.

**Other Protection** Rubber gloves may be worn.

# FINAL<sup>®</sup> All-Weather Blox MSDS

<b>MANUFACTURER'S ADDRESS:</b> BELL LABORATORIES, INC. 3699 KINSMAN BLVD. MADISON, WI 53704	<b>PREPARED BY:</b> PSM/CAR	<b>TELEPHONE NO:</b> (608) 241-0202	<b>EMERGENCY PHONE NOS:</b> <b>Medical</b> (877) 854-2494 <b>Transportation (Spills)</b> (800) 424-9300 CHEMTREC
<b>PRODUCT NAME: FINAL<sup>®</sup> All-Weather Blox</b>			<b>EPA REGISTRATION NO:</b> 12455-89
<b>USE:</b> Anticoagulant Rodenticide	<b>BAIT FORM:</b> Formulated Dry Bait		

## SECTION I. HAZARDOUS INGREDIENTS

INGREDIENT NAME	% BY WEIGHT	CURRENT TLV
<b>Brodifacoum</b> [3-[3-(4'-Bromo-[1,1'-biphenyl]-4-yl)-1,2,3,4-tetrahydro-1-naphthalenyl]-4-hydroxy-2H-1-benzopyran-2-one] CAS No. 56073-10-0	0.005 %	N/A

This product contains no components subject to the reporting requirements of Section 313 of the Superfund Amendment and Reauthorization Act (SARA) of 1986

## SECTION II. PHYSICAL DATA

<b>APPEARANCE:</b> Polygonal Block	<b>COLOR:</b> Red	<b>ODOR:</b> Sweet, grain-like	<b>SPECIFIC GRAVITY:</b> 1.12 g/ml
<b>VAPOR DENSITY:</b> N/A	<b>MELTING POINT:</b> N/A	<b>WATER REACTIVITY:</b> N/A	<b>EVAPORATION RATE:</b> N/A
<b>VAPOR PRESSURE:</b> N/A	<b>BOILING POINT:</b> N/A	<b>SOLUBILITY:</b> Not soluble in water	<b>BULK DENSITY:</b> N/A

## SECTION III. FIRE AND EXPLOSION DATA

<b>FLASH POINT (Method Used):</b> N/A	<b>FLAMMABLE LIMIT:</b> Upper limit: N/A Lower Limit: N/A	<b>AUTOIGNITION TEMP:</b> N/A
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**EXTINGUISHING MEDIA:**  
Extinguish with water, foam or inert gas

**SPECIAL FIREFIGHTING PROCEDURES:**  
Firefighters should be equipped with protective clothing and self-contained breathing apparatus.

**UNUSUAL FIRE OR EXPLOSION HAZARDS:**  
None

## SECTION IV. REACTIVITY HAZARD DATA

<b>STABILITY:</b> Stable	<b>CONDITIONS TO AVOID:</b> None	
<b>POLYMERIZATION:</b> Will not occur	<b>CONDITIONS TO AVOID:</b> None	
<b>INCOMPATIBILITY (MATERIALS TO AVOID):</b> Strongly alkaline materials	<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b> Oxides of carbon	

## SECTION V. TOXICITY DATA

<b>LD50, ORAL (INGESTION):</b> >5000 mg/kg (rats)	<b>LD50, DERMAL (SKIN CONTACT):</b> > 5001 mg/kg (rats)	<b>LC50, INHALATION:</b> N/A
<b>EYE IRRITATION:</b> None (rabbits)	<b>SKIN IRRITATION:</b> None (rabbits)	<b>DERMAL SENSITIZATION:</b> Not Considered a Sensitizer

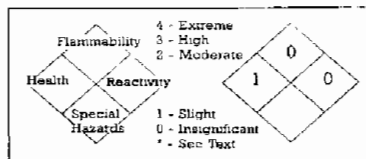
# FINAL<sup>®</sup> All-Weather Blox MSDS

<b>SECTION VI. HEALTH HAZARDS</b>		
<b>PRIMARY ROUTE OF ENTRY:</b> Ingestion	<b>SIGNS &amp; SYMPTOMS OF EXPOSURE:</b> Nausea, vomiting, loss of appetite, extreme thirst, lethargy, diarrhea, bleeding	
<b>EMERGENCY FIRST AID PROCEDURES:</b> <b>Eyes:</b> Flush with cool water for at least 15 minutes. If irritation develops, obtain medical assistance. <b>Skin:</b> Wash with soap and water. <b>Ingestion:</b> Call physician or emergency phone number immediately. Do not give anything by mouth or induce vomiting unless instructed by physician. <b>Inhalation:</b> None.		
<b>NOTE TO PHYSICIAN:</b> If ingested, administer Vitamin K, intramuscularly or orally as indicated by bishydroxycoumarin overdoses. Repeat as necessary as based upon monitoring of prothrombin times.		
<b>SECTION VII. CONTROL AND PROTECTIVE MEASURES</b>		
<b>RESPIRATOR TYPE:</b> Not required		
<b>EYE PROTECTION:</b> Not required	<b>GLOVES (Recommended):</b> Rubber Gloves	<b>VENTILATION:</b> Not required
<b>OTHER PROTECTIVE MEASURES:</b> Not required		
<b>NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:</b> <b>HEALTH:</b> 1 (Caution) <b>FIRE:</b> 0 (Will not burn) <b>REACTIVITY:</b> 0 (Stable) <b>SPECIFIC HAZARD:</b> None		
<b>HAZARDOUS MATERIAL INFORMATION (HMIS) RATINGS:</b> <b>HEALTH:</b> 2 (Moderate) <b>FLAMMABILITY:</b> 0 (Minimal) <b>REACTIVITY:</b> 0 (Minimal) <b>PROTECTIVE EQUIPMENT:</b> B		
<b>SECTION VIII. SPILL OR LEAK PROCEDURES</b>		
<b>STEPS TO BE TAKEN IN THE EVENT MATERIAL IS RELEASED OR SPILLED:</b> Sweep up spilled material, place in properly labeled container for disposal or re-use.		
<b>WASTE DISPOSAL METHOD:</b> Wastes resulting from use may be disposed of on-site or at an approved waste disposal facility. Dispose of all wastes in accordance with all Federal, state and local regulations.		
<b>SECTION IX. SPECIAL PRECAUTIONS AND STORAGE DATA</b>		
<b>STORAGE TEMPERATURE:</b> Room temperature	<b>AVERAGE SHELF LIFE:</b> Bait is stable for a minimum of 1 year when stored at room temperature	
<b>SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE):</b> Avoid exposure to light and extreme humidity		
<b>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:</b> Store in a cool, dry place inaccessible to children, pets and wildlife. Keep container tightly closed when not in use. Avoid contamination of lakes, streams and ponds by use, storage or disposal. Wash thoroughly with soap and water after handling.		
<b>SECTION X. SHIPPING DATA</b>		
<b>DOT SHIPPING NAME:</b> None required	<b>DOT HAZARD CLASSIFICATION:</b> Non-hazardous	
<b>DOT LABELS REQUIRED:</b> None required	<b>FREIGHT CLASSIFICATION:</b> LTL Class 60	
<b>WARRANTY:</b> The information provided in this Material Safety Data Sheet has been obtained from sources believed to be reliable. Bell Laboratories, Inc. provides no warranties, either expressed or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein. This information is offered for your consideration and investigation. The user is responsible to ensure that they have all current data relevant to their particular use.		



Product: Fleetweld 5P

Date: 12/1/04



## SECTION IV - HEALTH HAZARD DATA

Threshold Limit Value: The ACGIH recommended general limit for Welding Fume NOS - (Not Otherwise Specified) is 5 mg/m<sup>3</sup>. ACGIH-1999 preface states that the TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents which may modify this TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists. Units are milligrams per cubic meter of air.

Effects of Overexposure: Electric arc welding may create one or more of the following health hazards:

Fumes and Gases can be dangerous to your health. Common entry is by inhalation. Other possible routes are skin contact and ingestion.

Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema).

Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and may affect pulmonary function. Manganese overexposure can affect the central nervous system, resulting in impaired speech and movement. Bronchitis and some lung fibrosis have been reported. WARNING: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

Arc Rays can injure eyes and burn skin. *Skin cancer has been reported.*

Electric Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with workpiece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

Emergency and First Aid Procedures: Call for medical aid. Employ first aid techniques recommended by the American Red Cross.

IF BREATHING IS DIFFICULT give oxygen. IF NOT BREATHING employ CPR (Cardiopulmonary Resuscitation) techniques.

IN CASE OF ELECTRICAL SHOCK, turn off power and follow recommended treatment. In all cases call a physician.

## SECTION V - REACTIVITY DATA

Hazardous Decomposition Products: Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used.

Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the worker area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.)

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, plus those from the base metal and coating, etc., as noted above.

Reasonably expected fume constituents of this product would include: Primarily iron oxide; secondarily complex oxides of manganese, silicon and sodium.

Maximum fume exposure guideline and PEL for this product is 5.0 milligrams per cubic meter.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

## SECTION VI AND VII

### CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

Read and understand the manufacturer's instruction and the precautionary label on the product. Request Lincoln Safety Publication E205. See American National Standard Z49.1, 'Safety In Welding, Cutting and Allied Processes' published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL, 33126 and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 for more details on many of the following:

**Ventilation:** Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. *Keep exposure as low as possible.*

**Respiratory Protection:** Use respirable fume respirator or air supplied respirator when welding in confined space or general work area when local exhaust or ventilation does not keep exposure below TLV.

**Eye Protection:** Wear helmet or use face shield with filter lens shade number 12 or darker. Shield others by providing screens and flash goggles.

**Protective Clothing:** Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to permit electrically live parts or electrodes to contact skin... or clothing or gloves if they are wet. Insulate from work and ground.

**Disposal Information:** Discard any product, residue, disposable container, or liner as ordinary waste in an environmentally acceptable manner according to Federal, State and Local Regulations unless otherwise noted. No applicable ecological information available.



GE Betz

GE Betz Canada, Inc.  
3451 Erindale Station Road  
Mississauga, Ontario L5C 2S9  
Business telephone: (905) 279-2222

Material Safety Data Sheet

Issue Date: 07-MAR-2005

**EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940**

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## 1 PRODUCT IDENTIFICATION

REAGENT NAME:

**FREE CHLORINE DROP REAGENT**

REAGENT CODE:

**L6403**

REAGENT APPLICATION AREA:

**FIELD TEST REAGENT**

## 2 COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

### HAZARDOUS INGREDIENTS:

Product contains no hazardous ingredients reportable under WHMIS regulation

No component is considered to be a carcinogen by the U.S. National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or under WHMIS.

## 3 HAZARDS IDENTIFICATION

\*\*\*\*\*

### EMERGENCY OVERVIEW

May cause slight irritation to the skin. May cause slight irritation to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

Odor: None; Appearance: Colorless, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media:

dry chemical, carbon dioxide, foam or water

\*\*\*\*\*

#### POTENTIAL HEALTH EFFECTS

##### ACUTE SKIN EFFECTS:

Primary route of exposure; May cause slight irritation to the skin.

##### ACUTE EYE EFFECTS:

May cause slight irritation to the eyes.

##### ACUTE RESPIRATORY EFFECTS:

Mists/aerosols may cause irritation to upper respiratory tract.

##### INGESTION EFFECTS:

May cause slight gastrointestinal irritation.

##### TARGET ORGANS:

No evidence of potential chronic effects.

##### MEDICAL CONDITIONS AGGRAVATED:

Not known.

##### SYMPTOMS OF EXPOSURE:

May cause eye, skin, and/or respiratory tract irritation.

## 4 FIRST AID MEASURES

##### SKIN CONTACT:

Wash thoroughly with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

##### EYE CONTACT:

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists after flushing.

##### INHALATION:

If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

##### INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

##### NOTES TO PHYSICIANS:

No special instructions

## 5 FIRE FIGHTING MEASURES

##### FIRE FIGHTING INSTRUCTIONS:

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

##### EXTINGUISHING MEDIA:

dry chemical, carbon dioxide, foam or water

##### HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

##### FLASH POINT:

> 200F > 93C P-M(CC)

## 6 ACCIDENTAL RELEASE MEASURES

**PROTECTION AND SPILL CONTAINMENT:**

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

**DISPOSAL INSTRUCTIONS:**

The waste characteristics of the absorbed material, or any contaminated soil, should be determined in accordance with provincial regulations. Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement or discharged under provincial regulations. Incinerate or land dispose in an approved landfill.

**7 HANDLING & STORAGE**

**HANDLING:**

Normal chemical handling.

**STORAGE:**

Keep containers closed when not in use. Do not freeze. If frozen, thaw and mix completely prior to use.

**8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

**EXPOSURE LIMITS**

Consult local authorities for acceptable provincial values.

Product contains no hazardous ingredients reportable under WHMIS regulation

**ENGINEERING CONTROLS:**

adequate ventilation

**RESPIRATORY PROTECTION:**

If air-purifying respirator use is appropriate, use a respirator with dust/mist filters.

**SKIN PROTECTION:**

rubber gloves-- Wash off after each use. Replace as necessary.

**EYE PROTECTION:**

splash proof chemical goggles

**9 PHYSICAL & CHEMICAL PROPERTIES**

Specific Grav. (70F, 21C)	0.996	Vapor Pressure (mmHG)	ND
Freeze Point (F)	ND	Vapor Density (air=1)	ND
Freeze Point (C)	ND		
Viscosity (cps 70F, 21C)	ND	% Solubility (water)	ND
Odor		None	
Appearance		Colorless	
Physical State		Liquid	
Flash Point	P-M(CC)	> 200F > 93C	
pH As Is (approx.)		6.1	
Evaporation Rate (Ether=1)		< 1.00	

NA = not applicable      ND = not determined

**10 STABILITY & REACTIVITY**