

# MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe and European Community Standards

## PART I *What is the material and what do I need to know in an emergency?*

### 1. PRODUCT IDENTIFICATION

**TRADE NAME (AS LABELED):** **E-3000**  
**CHEMICAL NAME/CLASS:** Resin Mixture (Lab # 05-JF28-034)  
**U.N. NUMBER:** Not applicable  
**U.N. DANGEROUS GOODS CLASS/SUBSIDIARY RISK:** Not applicable  
**HAZCHEM CODE (AUSTRALIA):** Not applicable  
**POISONS SCHEDULE NUMBER (AUSTRALIA):** Not applicable  
**PRODUCT USE:** Coating for the prevention of corrosion  
**SUPPLIER/MANUFACTURER'S NAME:** **DeNOVUS**  
**ADDRESS:** P.O. Box 755  
Ennis, TX 75120  
**EMERGENCY PHONE:** (816) 630-3399  
**BUSINESS PHONE:** (214) 789-5725  
**DATE OF PREPARATION:** 4-14-05

### 2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	EINECS #	Proportion (w/v%)	EXPOSURE LIMITS IN AIR					
				ACGIH-TLV		OSHA-PEL		IDLH mg/m <sup>3</sup>	OTHER mg/m <sup>3</sup>
				TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>		
<b>Contains no hazardous materials found in EPA's "Title III List of Lists"</b>  - EPCRA Section 302 Extremely Hazardous Substances - CERCLA Hazardous Substances - EPCRA Section 313 Toxic Chemicals - CAA 112(r) Regulated Chemicals For Accidental Release Prevention  The specific chemical identity is being withheld as a trade secret									
Other constituents. Each of the other constituents are present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens).			Balance	The remaining components do not contribute any significant additional hazards. All pertinent information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian Workplace Hazardous Materials Identification System Standards (CPR 4) and European Community Standards (Commission Directive 93/112/EEC), and applicable Australian regulations [NOHSC: 1005(1994)].					

NE = Not Established.

C = Ceiling Limit

See Section 16 for Definitions of Terms Used

NOTE: All WHMIS, Australian WorkSafe, and European Community required information is included. It is located in appropriate sections based on the ANSI Z400.1-1998 format.

NOTE (2): Information on this product is being claimed as proprietary. All pertinent hazard information has been provided, per the Trade Secret requirements of U.S. Federal Occupational Safety and Health Administration Standards (29 CFR 1910.1200), Canadian WHMIS (CPR 12 and 19), European Community Standards (Council Directive 88/379/EEC, Article 7), and Australian Standards (NOHSC:2011, 8.30-8.48). Information on this mixture will be released when the conditions specified in these Standards are met.

### 3. HAZARD IDENTIFICATION

**EMERGENCY OVERVIEW:** This is a tacky, blue cream with a slight, paint-like odor. **Health Hazards:** This product may irritate eyes, skin, and other contaminated tissues. **Flammability Hazards:** If involved in a fire, this product will decompose to produce toxic gases (e.g., oxides of carbon, nitrogen, lithium, and calcium, hydrogen chloride). **Reactivity Hazards:** Negligible. **Environmental Hazards:** Negligible. **Emergency Recommendations:** Emergency responders must wear proper personal protective equipment for the releases to which they are responding.

**SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE:** The most significant route of occupational overexposure is contact with skin and eyes. The symptoms of overexposure to this product, via route of exposure, are as follows:

**INHALATION:** Inhalation of fumes generated by heating this product may slightly irritate the nose, throat, and other tissues of the respiratory system. Symptoms are generally alleviated upon breathing fresh air.

**CONTACT WITH SKIN or EYES:** Skin or eye contact with this product may be slightly irritating. Symptoms of eye contact may include redness, pain, and watering. Symptoms of skin contact may include redness and itching. Prolonged or repeated skin contact may cause dermatitis (dry, red skin).

**SKIN ABSORPTION:** The components of this product are not known to be absorbed through intact skin.

**INGESTION:** Ingestion is not anticipated to be a significant route of occupational overexposure for this product. If this product is swallowed (i.e., through poor hygiene practices), it may cause nausea, vomiting, and diarrhea.



**INJECTION:** Though not anticipated to be a significant route of overexposure for this product, injection (via punctures or lacerations by contaminated objects) may cause redness at the site of injection.

**HEALTH EFFECTS OR RISKS FROM EXPOSURE:** An Explanation in Lay Terms.

**ACUTE:** This material may slightly irritate the eyes, skin, and other contaminated tissues.

**CHRONIC:** Prolonged or repeated skin contact may cause dermatitis (dry, red skin). Refer to Section 11 (Toxicology Information) for further information.

**TARGET ORGANS:** Acute: Eyes, skin. Chronic: Skin.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH		(BLUE)	1
FLAMMABILITY		(RED)	1
REACTIVITY		(YELLOW)	0
PROTECTIVE EQUIPMENT			B
EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8
For routine applications.			

**See Section 16 for Definition of Ratings**

## PART II *What should I do if a hazardous situation occurs?*

### 4. FIRST-AID MEASURES

Victim must be taken for medical attention, especially if adverse effects continue after initial treatment. Rescuers should be taken for medical attention if necessary. Take a copy of label and MSDS to health professional with victim.

**SKIN EXPOSURE:** If this product contaminates the skin, immediately begin decontamination with soap and running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. The minimum recommended flushing time is 15 minutes. Victim must seek medical attention if an adverse reaction occurs.

**EYE EXPOSURE:** If this product contaminates the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. If necessary, consult an ophthalmologist.

**INHALATION:** If mists or sprays of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers. Victim must seek medical attention if an adverse reaction occurs.

**INGESTION:** Ingestion is not anticipated to be a significant route of overexposure. If this product is swallowed, **CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION**. If professional advice is not available, **DO NOT** induce vomiting, unless directed by medical personnel. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. Victim must seek medical attention.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Pre-existing dermatitis, other skin conditions, and respiratory conditions may be aggravated by acute or chronic overexposures to this product.

**RECOMMENDATIONS TO PHYSICIANS:** Treat symptoms and eliminate overexposure.

## 5. FIRE-FIGHTING MEASURES

FLASH POINT (COC): Not Established

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.

Upper (UEL): Not applicable.

FIRE EXTINGUISHING MATERIALS:

Water Spray: YES

Foam: YES

Halon: YES

Carbon Dioxide: YES

Dry Chemical: YES

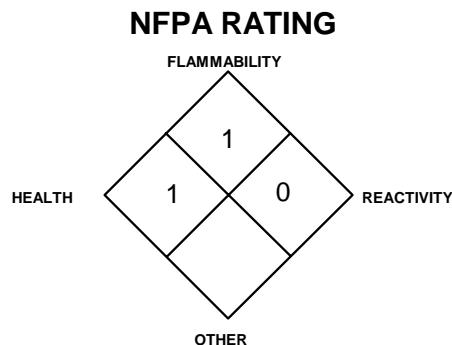
Other: Any "ABC" Class

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product must be substantially preheated before ignition can occur. When involved in a fire, the products of thermal decomposition may include irritating fumes and toxic gases (e.g., oxides of carbon, nitrogen, lithium, and calcium, hydrogen chloride).

Explosion Sensitivity to Mechanical Impact: Not applicable.

Explosion Sensitivity to Static Discharge: Not applicable.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move fire-exposed containers if it can be done without risk to firefighters. If possible, firefighters should control runoff water to prevent environmental contamination. Rinse contaminated equipment with soapy water before returning such equipment to service.



**See Section 16 for Definition of Ratings**

## 6. ACCIDENTAL RELEASE MEASURES

RELEASE RESPONSE: Small releases should be scraped up and placed in a closed container. Responders should wear gloves, goggles, and suitable body protection during the clean-up of small spills. Larger, uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used.

In case of a large spill, clear the affected area, protect people, and respond with trained personnel. Identify all sources of ignition before clean-up procedures begin. Minimum Personal Protective Equipment should be **Level C: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Air-Purifying respirator with high efficiency particulate filter**. **Self-Contained Breathing Apparatus must be selected if releases occur in confined or poorly ventilated areas or if the level of oxygen is below 19.5%.** Scrape up spilled material. Rinse area with soap and water solution and follow with a water rinse.

Close off sewers and take other measures to protect human health and the environment as necessary. Decontaminate the area thoroughly. Dispose of in accordance with applicable U.S. Federal, State, or local procedures or appropriate standards of Australia, Canada, or EC Member States (see Section 13, Disposal Considerations).

## **PART III** *How can I prevent hazardous situations from occurring?*

### 7. HANDLING and STORAGE

WORK AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing fumes, mists, or sprays generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Open containers slowly on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight or sources of intense heat. Store away from incompatible materials (see Section 10, Stability and Reactivity). Material should be stored in secondary containers or in a diked area, as appropriate. Keep container tightly closed when not in use. Inspect all incoming containers before storage to ensure containers are properly labeled and not damaged.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable U.S. Federal, State, or local procedures or appropriate standards of Australia, Canada, or EC Member States.

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## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients) if applicable. Ensure eyewash/safety shower stations are available near areas where this product is used. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information.

INTERNATIONAL OCCUPATIONAL EXPOSURE LIMITS: Currently, there are no exposure limit values additional to those cited in Section 2 (Composition and Information on Ingredients).

RESPIRATORY PROTECTION: Respiratory protection is not generally needed during routine use of this product. For operations in which fumes, mists, or sprays of this product will be generated, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN166, and EC member states, or the Australian Standard 1716-Respiratory Protective Devices, and Australian Standard 1715-Selection, Use, and Maintenance of Respiratory Protective Devices until a Biological Safety Cabinet is installed. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

EYE PROTECTION: Splash goggles or safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133, or the European Standard EN166, or the Australian Standard 1337-Eye Protection for Industrial Applications and Australian Standard 1336-Recommended Practices for Eye Protection in the Industrial Environment for further information.

HAND PROTECTION: Wear latex or rubber gloves for routine industrial use. Use triple gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this MSDS. If necessary, refer to Australian Standard 2161—Industrial Safety Gloves and Mittens for further information.

BODY PROTECTION: Use body protection appropriate for task (e.g., coveralls, Tyvek<sup>®</sup> suit). If necessary, refer to Australian Standard 3765—Clothing for Protection Against Hazardous Chemicals for further information.

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## 9. PHYSICAL and CHEMICAL PROPERTIES

RELATIVE VAPOR DENSITY (air = 1): Not established.

SPECIFIC GRAVITY (water = 1): 0.95 - 1.05

SOLUBILITY IN WATER: Insoluble.

VAPOR PRESSURE, mm Hg @ 20°C: Not established.

ODOR THRESHOLD: Not established.

COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.

APPEARANCE AND COLOR: This is a tacky, blue cream with a slight, paint-like odor.

HOW TO DETECT THIS SUBSTANCE (warning properties): The appearance of this product may act as a distinguishing characteristic.

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EVAPORATION RATE (n-BuAc = 1): Not established.

MELTING/FREEZING POINT: Not established.

BOILING POINT: Not established.

pH: Not applicable.

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## 10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: If exposed to extremely high temperatures, the products of thermal decomposition may include irritating fumes and toxic gases (e.g., oxides of carbon, nitrogen, lithium, and calcium, hydrogen chloride).

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers, strong acids, amines.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Exposure to or contact with extreme temperatures and incompatible chemicals.

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## PART IV *Is there any other useful information about this material?*

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## 11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: Not Established

SUSPECTED CANCER AGENT: The components of this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, and CAL/OSHA and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: This product may be slightly irritating to eyes, skins, and other contaminated tissues.

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## 11. TOXICOLOGICAL INFORMATION (Continued)

SENSITIZATION TO THE PRODUCT: The components of this product are not known to be sensitizers with prolonged or repeated use.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: This product is not reported to produce mutagenic effects in humans.

Embryotoxicity: This product is not reported to produce embryotoxic effects in humans.

Teratogenicity: This product is not reported to cause teratogenic effects in humans.

Reproductive Toxicity: This product is not reported to cause reproductive effects in humans.

A *mutagen* is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An *embryotoxin* is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A *teratogen* is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A *reproductive toxin* is any substance which interferes in any way with the reproductive process.

ACGIH BIOLOGICAL EXPOSURE INDICES: Currently, there are no ACGIH Biological Exposure Indices (BEIs) associated with the components of this product.

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## 12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: The components of this product will slowly degrade in the environment and form a variety of organic and inorganic materials.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No specific information is currently available on the effect of this product on plants or animals in the environment. This product may be harmful to contaminated plant and animal life (especially in large quantities). Refer to Section 11 (Toxicological Information) for specific information regarding the effects of this product's components on test animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: This product may be harmful to aquatic plant and animal life in contaminated bodies of water (especially in large quantities). Aquatic toxicity data for the product are available as follows:

**E 2000:**

LC<sub>50</sub> (saltwater mysid, *Mysidopsis bahia*) > 100 mg/L/96 hours/pH 8.1

NOEC (saltwater mysid, *Mysidopsis bahia*) = 100 mg/L/96 hours/pH 8.1

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## 13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with regulations of Australia, Canada, or EC Member States. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of this product.

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## 14. TRANSPORTATION INFORMATION

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Not Applicable

HAZARD CLASS NUMBER and DESCRIPTION: Not Applicable

UN IDENTIFICATION NUMBER: Not Applicable

PACKING GROUP: Not Applicable

DOT LABEL(S) REQUIRED: Not Applicable

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER, 1996: Not applicable

MARINE POLLUTANT: No component of this product is designated as a Marine Pollutant, per Appendix B to 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This material is not considered as dangerous goods.

IATA DESIGNATION: This material is not considered as dangerous goods by the International Air Transport Association.

## 14. TRANSPORTATION INFORMATION (Continued)

INTERNATIONAL MARITIME ORGANIZATION (IMO): This material is not considered as dangerous goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This material is not considered by the United Nations Economic Commission for Europe to be dangerous goods.

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: This material is not considered as dangerous goods.

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## 15. REGULATORY INFORMATION

### ADDITIONAL UNITED STATES REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The components of this product are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for the components of this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

U.S. TSCA STATUS: The components of this product listed by CAS # in Section 2 (Composition and Information on Ingredients) are on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

U.S. STATE REGULATORY INFORMATION: Not Applicable Components

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): No component of this product listed in Section 2 (Composition and Information on Ingredients) is on the California Proposition 65 lists.

U.S. ANSI STANDARD LABELING (Z129.1): **WARNING! MAY CAUSE EYE IRRITATION.** Avoid prolonged or repeated contact with skin. Avoid contact with eyes or clothing. Wash thoroughly after handling. Avoid breathing mists or sprays. Work in well-ventilated area. Do not taste or swallow. Wear gloves, goggles, and appropriate body protection. **FIRST-AID:** In case of skin contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. In case of eye contact, flush with plenty of water for 15 minutes. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention if adverse effects develop. **IN CASE OF FIRE:** Use water fog, dry chemical, CO<sub>2</sub>, or "alcohol" foam. **IN CASE OF SPILL:** Scrape up, place in a suitable container, and seal. Consult Material Safety Data Sheet for additional information.

### ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL STATUS: The components of this product listed by CAS # in Section 2 (Composition and Information on Ingredients) are on the DSL/NDSL Inventory.

CANADIAN WHMIS IDL DISCLOSURE STATUS: The components of this product have no disclosure requirement levels.

OTHER CANADIAN REGULATIONS: Not applicable.

CANADIAN ENVIRONMENTAL PROTECTION AGENCY (CEPA) PRIORITY SUBSTANCES LISTS: The components of this product are not on the Priority Substances Lists.

CANADIAN WHMIS SYMBOLS: Not applicable.

### EUROPEAN COMMUNITY INFORMATION:

EC LABELING AND CLASSIFICATION: This product does not meet the definition of any hazard class as defined by the European Community Council Directive 67/548/EEC.

EC CLASSIFICATION: Not applicable.

EC RISK PHRASES: Not applicable.

EC SAFETY PHRASES: Not applicable.

EUROPEAN COMMUNITY ANNEX II HAZARD SYMBOL: Not applicable.

EC INFORMATION FOR COMPONENTS: Not Applicable

### AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: The components of this product listed by CAS # in Section 2 (Composition and Information on Ingredients) are on the AICS.

LIST OF DESIGNATED SUBSTANCES: Not applicable.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

LABELING AND CLASSIFICATION: This product does not meet the definition of any hazard class.

CLASSIFICATION: Not applicable. RISK PHRASES: Not applicable. SAFETY PHRASES: Not applicable.

ADDITIONAL LABELING INFORMATION: Not applicable.

HAZARD SYMBOL: Not applicable.

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## 15. REGULATORY INFORMATION (Continued)

### DANISH INFORMATION FOR PRODUCT:

NEUROTOXIC SUBSTANCES IN THE WORKING ENVIRONMENT: No components of this product are listed as Neurotoxic Substances in the Working Environment in Denmark.

### DUTCH INFORMATION FOR THE PRODUCT:

LIST OF PRIORITY SUBSTANCES: No component of this product is listed as substance hazardous in the environment under VROM 93292/7-93, by the Hague, Ministry of Housing and Physical Planning and the Environment.

### GERMAN INFORMATION FOR THE PRODUCT:

AQUATIC HAZARD CLASS (WGK): None of the components of this product have specific WGK classifications assigned. As such, the classification for this product, per the VwVS regulations is WGK 3.

TECHNICAL INSTRUCTION ON AIR QUALITY CONTROL (TALuft): None of the components of this product have specific TALuft Classifications.

### NORWEGIAN INFORMATION FOR PRODUCT:

ENVIRONMENTAL POLLUTANTS: No component of this product is listed as Environmental Pollutants by the State Pollution Control Authority in Norway.

## 15. REGULATORY INFORMATION (Continued)

### SWEDISH INFORMATION FOR THE PRODUCT:

SWEDISH NATIONAL CHEMICALS INSPECTORATE'S LIST OF CARCINOGENIC SUBSTANCES: The components of this product are not on the National Chemicals Inspectorate's List Of Carcinogenic Substances.

SWEDISH NATIONAL CHEMICALS INSPECTORATE'S ESTHER MANUAL: The components of this product are not ESTHER Substances.

SWEDISH HIGH VOLUME CHEMICALS: No components of this product are on the list of Swedish High Volume Chemicals. This is the list of 1000 compounds that are of the highest volume produced or imported into Sweden.

OTHER SWEDISH REGULATIONS: No component of this product is on the Swedish list of Environmentally Hazardous Chemicals.

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## 16. OTHER INFORMATION

### PREPARED BY:

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(816) 630-3399

### DATE OF PRINTING:

November 3, 2008

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Osmose assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Osmose assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

# DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

**CAS #:** This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

## EXPOSURE LIMITS IN AIR:

**ACGIH** - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

**TLV** - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (**TWA**), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (**C**). Skin absorption effects must also be considered.

**OSHA** - U.S. Occupational Safety and Health Administration.

**PEL** - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.

**IDLH** - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL.

**NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called Recommended Exposure Levels (**RELs**). When no exposure guidelines are established, an entry of **NE** is made for reference.

## HAZARD RATINGS:

**HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:** This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards. **Health Hazard:** **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). **Flammability Hazard:** **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]). **Reactivity Hazard:** **0** (normally stable); **1** (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures). PPE Rating B: Hand and eye protection is required for routine chemical use.

**NATIONAL FIRE PROTECTION ASSOCIATION:** **Health Hazard:** **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). **Flammability Hazard and Reactivity Hazard:** Refer to definitions for "Hazardous Materials Identification System".

## FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). **Flash Point** - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. **Autoignition Temperature:** The minimum temperature required to initiate combustion in air with no other source of ignition. **LEL** - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. **UEL** - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

## TOXICOLOGICAL INFORMATION:

**Human and Animal Toxicology:** Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD<sub>50</sub>** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC<sub>50</sub>** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m<sup>3</sup>** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** **BEI** - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. **Ecological Information:** **EC** is the effect concentration in water. **BCF** = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. **TL<sub>m</sub>** = median threshold limit; Coefficient of Oil/Water Distribution is represented by **log K<sub>ow</sub>** or **log K<sub>oc</sub>** and is used to assess a substance's behavior in the environment.

## REGULATORY INFORMATION:

**U.S. and CANADA:** This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA** or **Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label.

**EUROPEAN and INTERNATIONAL:** **EC** is the European Community (formerly known as the **EEC**, European Economic Community). **EINECS:** This is the European Inventory of Now-Existing Chemical Substances. **AICS** is the Australian Inventory of Chemical Substances. **MITI** is the Japanese Minister of International Trade and Industry. **ECL** is the Korean Existing Chemicals List. **IMO** is the International Maritime Organization and **IATA** is the International Air Transport Association. The **ARD** is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the **RID** are the International Regulations Concerning the Carriage of Dangerous Goods by Rail.