

# SAFETY DATA SHEET



This Safety Data Sheet (SDS) complies with the requirements of the U.S. Federal Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200, as updated in 2012), the American National Standards Institute (Z400.1, 1998), and equivalent state Standards. It has also been developed in accordance with the Canadian Workplace Hazardous Materials Standard and the United Nations Globally Harmonized System of Classification of Chemicals.. Refer to Section 16 of this document for the definition of terms and abbreviations.

## SECTION 1: IDENTIFICATION of the Substance/Mixture and of the Company/Undertaking

### 1.1 PRODUCT IDENTIFIER:

- PRODUCT NAME: **TIX ANTI-FLUX**
- SYNONYMS: Not Applicable
- CHEMICAL NAME/CLASS: Metal Oxide Solution
- PRODUCT CODE: 54.462 (0.5 oz)

### 1.2 RELEVANT IDENTIFIED USES OF THE MIXTURE OR USES ADVISED AGAINST

- IDENTIFIED USE: Various
- USES ADVISED AGAINST: None Specified

### 1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

- DISTRIBUTED BY: **GROBET FILE CO. OF AMERICA, INC.**
- ADDRESS: 750 Washington Ave.; Carlstadt, NJ 07072
- BUSINESS PHONE: 201-939-6700; Toll Free – 800-847-4188 (USA only)
- EMERGENCY PHONE: 1-800-255-3924 (9 am – 5 pm EST)

### 1.4 OTHER PERTINENT INFORMATION

- This product is sold in relatively small volumes. This SDS has been developed to address safety concerns affecting small volume handling situations and those involving warehouses and other workplaces where large numbers of these items are stored or distributed.

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

REGULATION	CLASSIFICATION
OSHA HAZARD COMMUNICATION (GHS)	Eye Irritation (Category 2B)

### 2.2 LABEL ELEMENTS:

- OSHA/HCS– BASED ON GLOBALLY HARMONIZED SYSTEM

**Symbol:** Not applicable.

**Signal Word:** Warning.

**Hazard statement(s)**

- Causes eye irritation.

## SECTION 2: HAZARDS IDENTIFICATION (Continued)

### Precautionary statement(s)

Keep out of reach of children. Read label before use. Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves and eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**STORAGE:** None specified. See Section 7 for specific recommendations.

**DISPOSAL:** None specified. See Section 13 for specific recommendations.

### • OTHER HAZARDS

**Symbol:** To the right.

**Signal Word:** Warning.

### Hazard statement(s)

- Very toxic to aquatic life with long lasting effects.

### Precautionary statement(s)

- Avoid release to the environment.
- Collect spillage.
- Dispose of contents/container in accordance with local/regional/national/international regulations.



## 2.3 OTHER PERTINENT DATA ON CHEMICAL AND PHYSICAL HAZARDS:

### • HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

Health	1	HMIS Personal Protective Equipment Rating: Occupational Use situations: B/C; Safety glasses and gloves/ body protection suitable to specific circumstances of use should be considered.
Flammability	0	
Physical Hazard	0	
Protective Equipment	B/C	

### • CANADIAN REGULATORY STATUS

- This product is classified as hazardous under Canadian Controlled Products regulations (SOR-88-66).
  - **2015 WHMIS:** This product is classified as hazardous under Canadian Controlled Products regulations (SOR-88-66). See information above.
  - **Pre-2015 WHMIS:** D2-B: Materials Causing Other Toxic Effects/ Toxic Material: This SDS contains all the information required by the CPR.



## SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1 SUBSTANCES/MIXTURES

COMPONENT	CAS NUMBER	GHS HAZARD CLASSIFICATION FOR COMPONENT	% (w/w)
Zinc Oxide	1314-13-2	Acute aquatic toxicity (Category 1); Chronic aquatic toxicity (Category 1)	20-30
Isopropyl Alcohol	67-63-0	Flammable liquids (Category 2); Eye irritation (Category 2A); Specific target organ toxicity - single exposure (Category 3, Central nervous system)	< 6
The remaining components of this product are not classified as hazardous in their existing concentrations.			Balance

## SECTION 4: FIRST AID MEASURES

### 4.1 DESCRIPTION OF FIRST AID MEASURES

**Eyes:** Flush with copious amounts of water for 15 minutes. "Roll" eyes during flush. Seek medical attention if symptoms continue. **Skin:** Flush area with warm, running water for 15 minutes. **Inhalation:** If mists/sprays of this product are inhaled, remove victim to fresh air. **Ingestion:** Contact a Poison Control Center or physician for instructions. If professional advice is not available, do not induce vomiting. Victim should drink milk, egg whites, or large quantities of water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow.

### 4.2 MOST IMPORTANT ACUTE AND CHRONIC EXPOSURE SYMPTOMS

- **ACUTE:**

- **AREA EXPOSED**

- **Eye Contact**

- Can cause mild to moderate eye irritation, depending on duration of contact.

- **Skin Contact**

- May cause mild skin irritation, depending on duration of contact.

- **Inhalation**

- May cause mild respiratory tract irritation; symptoms may include coughing and sneezing depending on volume of mist/spray inhaled.

- **Ingestion**

- May cause gastrointestinal system irritation; symptoms may include pain, diarrhea, nausea and vomiting if large volumes are ingested. Ingestion of the product may also cause central nervous system effects.

- **CHRONIC:** None reported.

- **TARGET ORGANS:** Acute – eyes. Chronic – none.

### 4.3 INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

- **RECOMMENDATIONS TO PHYSICIANS:** Treat symptoms and eliminate exposure.

- **MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:** Disorders associated with the target organs may be aggravated after either acute or chronic exposures.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1 EXTINGUISHING MEDIA

- **RECOMMENDED FIRE EXTINGUISHING MEDIA:** Water Spray, Water Jet, Dry Powder, Foam, Carbon Dioxide, Halon, or any other.
- **UNSUITABLE FIRE EXTINGUISHING MEDIA:** None known.

### 5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

- **NFPA FLAMMABILITY CLASSIFICATION:** Not flammable
- **UNUSUAL HAZARDS IN FIRE SITUATIONS:** This product is non-combustible. It will not contribute to the intensity of a fire. Use extinguishing material suitable to the surrounding fire.
  - Sensitivity to Mechanical Impact: Not sensitive.
  - Explosion Sensitivity to Static Discharge: Not sensitive.



### 5.3 ADVICE FOR FIREFIGHTERS

- Wear Self Contained Breathing Apparatus and full protective equipment for fire response. Move containers from fire area if it can be done without risk to personnel. Otherwise, use water spray to keep fire-exposed containers cool. Contaminated equipment should be rinsed thoroughly with water before returning to service.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES

- **RESPONSE TO INCIDENTAL RELEASES:** Personnel who have received basic chemical safety training can generally handle small-scale releases. Wear gloves, safety glasses when cleaning-up spills. Use caution during clean-up; avoid stepping on damp surfaces, as they may be slippery.
- **RESPONSE TO NON-INCIDENTAL RELEASES:** In the event of a non-incident release (more than 10 gallons.), Minimum Personal Protective Equipment should be **Level C: triple-gloves, chemical resistant apron, boots, and splash goggles and an Air-Purifying respirator with high efficiency particulate filter.** Use absorbent pad or other absorbent material to clean-up release. If necessary, triple-rinse contaminated area or items with water.
- **RESPONSE PROCEDURES FOR ANY RELEASE:** Absorb spilled material, triple-rinse contaminated area or items with water.

### 6.2 ENVIRONMENTAL PRECAUTIONS

- Avoid response actions that can cause a release of a significant amount of the substance (10 gallons or more) into the environment.

### 6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

- **SPILL RESPONSE EQUIPMENT:** Polypad or other absorbent material.

### 6.4 REFERENCES TO OTHER SECTIONS

- **SECTION 8:** For exposure levels and detailed personal protective equipment recommendations.
- **SECTION 13:** For waste handling guidelines.

## SECTION 7: HANDLING AND STORAGE

### 7.1 PRECAUTIONS FOR SAFE HANDLING

- **HYGIENE PRACTICES:** Keep out of reach of children. Follow good chemical hygiene practices. Do not smoke, drink, eat, or apply cosmetics in the chemical use area. Avoid inhalation of mists/sprays. Use in well-ventilated area. Avoid contact with skin or eyes. Remove contaminated clothing promptly. Clean up spilled product immediately.
- **HANDLING RECOMMENDATIONS:** Employees must be appropriately trained to use this product safely as needed. Keep containers closed when not in use.

### 7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

- **STORAGE RECOMMENDATIONS:** Ensure all containers are correctly labeled. Store containers away from direct sunlight, sources of intense heat, or where freezing is possible. Store this product away from incompatible chemicals (See Section 10, Stability and Reactivity). Empty containers may contain residual material; therefore, empty containers should be handled with care. Material should be stored in secondary containers, or in a diked area, as appropriate. Storage and use areas should be covered with impervious materials. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.
- **INCOMPATIBILITIES:** See Section 10 (Stability and Reactivity).

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 CONTROL PARAMETERS

#### AIRBORNE EXPOSURE LIMITS:

COMPONENT	ACGIH TLV	OSHA PEL	NIOSH REL	OTHER
Zinc Oxide	TWA = 2 mg/m <sup>3</sup> (Respirable Fraction); STEL- 10 mg/m <sup>3</sup> (Respirable Fraction)	TWA = 15 mg/m <sup>3</sup> (Total Dust); 5 mg/m <sup>3</sup> (Respirable Fraction)	TWA = 5 mg/m <sup>3</sup> (Dust only); C = 10 mg/m <sup>3</sup> (Dust Only)	NE
Isopropyl Alcohol	TWA= 200 ppm; STEL = 400 ppm	TWA = 400 ppm	TWA= 400 ppm; STEL = 500 ppm	NE

- BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS:** The following BEIs have been established for components of this product.
  - ISOPROPYL ALCOHOL:** Acetone in Urine; End of Shift; 40 mg/L

### 8.2 EXPOSURE CONTROLS

- ENGINEERING CONTROLS:** Use this product in well-ventilated environment. Safety showers, eye wash stations, and hand-washing equipment should be available.
- RESPIRATORY PROTECTION:** None needed under normal conditions of use. Use NIOSH approved respirators if ventilation is inadequate to control particulates.
- HAND PROTECTION:** Nitrile or neoprene gloves should be used. If necessary, refer to U.S. OSHA 29 CFR 1910.138, or appropriate local, state, or national standards.
- EYE PROTECTION:** Splash goggles or safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133, or appropriate local, state, or national standards.
- BODY PROTECTION:** Use a body protection appropriate to task (e.g., lab coat, coveralls, or apron). Care should be taken to select protection for potentially exposed areas when prolonged exposure could occur in occupational settings.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

- |   |  |
|---|--|
| (a) <b>APPEARANCE:</b> Clear, yellowish liquid.                                   | (k) <b>VAPOR PRESSURE (mmHg @ 20°C):</b> Not determined.           |
| (b) <b>ODOR:</b> Mild, alcohol-like.  | <b>VAPOR DENSITY:</b> Not applicable.                              |
| (c) <b>ODOR THRESHOLD:</b> 19 ppm (Isopropyl alcohol).                            | (m) <b>DENSITY:</b> Approximately 1.0 g/mL (8.34 lb/gal).          |
| (d) <b>pH:</b> Not determined.  | (n) <b>SOLUBILITY:</b> Insoluble.                                  |
| (e) <b>MELTING POINT/FREEZING POINT:</b> Less than 0 °C (32 °F).                  | (o) <b>PARTITION COEFFICIENT: N-OCTANOL/WATER:</b> Not applicable. |
| (f) <b>INITIAL BOILING POINT AND BOILING RANGE:</b> Approximately 93 °C (200 °F). | (p) <b>AUTO-IGNITION TEMPERATURE:</b> Not applicable.              |
| (g) <b>FLASH POINT:</b> Not applicable  | (q) <b>DECOMPOSITION TEMPERATURE:</b> Not determined.              |
| (h) <b>EVAPORATION RATE (water=1):</b> Not determined.                            | (r) <b>VISCOSITY:</b> Not determined.                              |
| (i) <b>FLAMMABILITY:</b> Not applicable.  | (s) <b>EXPLOSIVE PROPERTIES:</b> Not applicable.                   |
| (j) <b>UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:</b> Not applicable.          | (t) <b>OXIDIZING PROPERTIES:</b> Not an oxidizer.                  |

### 9.2 OTHER INFORMATION

- VOC (less water & exempt):** < 60 g/L
- WEIGHT% VOC:** < 6 %

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 REACTIVITY

- Not reactive under typical conditions of use or handling.

### 10.2 CHEMICAL STABILITY

- Normally stable under standard temperatures and pressures.

### 10.3 POSSIBILITY OF HAZARDOUS REACTIONS

- This product is not self-reactive or air-reactive; it will not undergo hazardous polymerization.

### 10.4 CONDITIONS TO AVOID

- Avoid contact with incompatible chemicals.

### 10.5 INCOMPATIBLE MATERIALS

- Strong oxidizers; water-reactive materials.

### 10.6 HAZARDOUS DECOMPOSITION PRODUCTS

- Thermal decomposition of this product generates zinc oxides and carbon oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

#### • **ACUTE TOXICITY:**

- **DEGREE OF IRRITATION:** Mechanical irritation through contact with mists/sprays.
- **SENSITIZATION:** Not reported to be a skin or respiratory sensitizer.
- **PRODUCT ESTIMATED TOXICITY**
  - **Acute Toxicity Estimate (Oral) > 5000 mg/kg Acute Toxicity Estimate (Dermal) > 5,000 mg/kg**
- **TOXICOLOGY DATA:** The following toxicology data are available for components of this product.

**ZINC OXIDE**  
LDLO (Human, Oral) = 500 mg/kg  
TCLo (Inhalation, Human) = 600 mg/kg; LUNGS,  
THORAX, OR RESPIRATION: OTHER  
CHANGES  
LD50 (Oral, Mouse) = 7950 mg/kg  
LD (Oral, Rat) > 8437 mg/kg

**ISOPROPYL ALCOHOL**  
LD<sub>50</sub> (Oral, Rat) = 5,045 mg/kg Remarks:  
Behavioral: Altered sleep time (including  
change in righting reflex). Behavioral:  
Somnolence (general depressed activity). LC50  
Inhalation - Rat - 8 h - 16000 ppm  
LD<sub>50</sub> (Dermal, Rabbit) = 12,800 mg/kg  
LDLo (Human, Unreported) = 2 mL/kg  
LDLo (Human, Oral) = 3570 mg/Kg (vomiting,  
respiratory depression, coma)
- **REVIEW OF ACUTE SYMPTOMS AND EFFECTS:** See Section 2 (Hazards Information) and Section 4 (First-Aid Measures) for further details.
  - **EYES:** Can cause eye irritation.
  - **SKIN:** May cause skin irritation, especially upon prolonged exposure.
  - **INHALATION:** Mists/sprays of this product may cause nasal irritation.
  - **INGESTION:** Although not anticipated to be a significant route of occupational over-exposures, ingestion of this product may cause gastrointestinal problems.

#### • **CHRONIC TOXICITY:**

- **CARCINOGENICITY STATUS:** The following carcinogenicity data are available for components of this product.

CHEMICAL	IARC	NTP	NIOSH	OSHA	OTHER
Zinc Oxide	NO	NO	NO	NO	EPA-D: Not Classifiable as to Human Carcinogenicity.
Isopropyl Alcohol	IARC-3: Unclassifiable as to Carcinogenicity in Humans	NO	NO	NO	TLV-4: Not Classifiable as a Human Carcinogen

- **REPRODUCTIVE TOXICITY INFORMATION:** The components of this product are not reported to cause reproductive effects under typical circumstances of exposure at the concentrations present in this product.

## SECTION 11: TOXICOLOGICAL INFORMATION

- **MUTAGENIC EFFECTS:** The components of this product are not reported to cause reproductive effects under typical circumstances of exposure at the concentrations present in this product.
- **SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE:** Not applicable.
- **SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE:** Not applicable.
- **OTHER INFORMATION**
  - **TOXICOLOGICALLY SYNERGISTIC PRODUCTS:** None known.
  - **ADDITIONAL TOXICOLOGY:** None known.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 TOXICITY

- Based on available data, this product may be harmful or fatal to contaminated terrestrial or aquatic plants or animals, depending on the volume released into the environment.
- The following data are available for components of this product:

#### ZINC OXIDE

LC50 - Oncorhynchus mykiss (rainbow trout) - 1.1 mg/l - 96.0 hours  
EC50 - Daphnia magna (Water flea) - 0.098 mg/l - 48 hours

#### ISOPROPYL ALCOHOL

LC50 (Pimephales promelas): 9,640.00 mg/L - 96 hours  
EC50 (Daphnia magna): 5,102.00 mg/L - 24 hours  
Immobilization EC50 (Daphnia magna) : 6,851 mg/L - 24 hours  
EC50 (Desmodesmus subspicatus) > 2,000.00 mg/L - 72 hours  
EC50 - Algae > 1,000.00 mg/L - 24 hours

### 12.2 PERSISTENCE AND DEGRADABILITY

- When released into the soil, the components of this product are expected to biodegrade, dissipate in soils via oxidation, or otherwise chemically degrade or photo-decompose via solar radiation.

### 12.3 BIOACCUMULATIVE POTENTIAL

- The components of this product are not anticipated to bioaccumulate in any significant quantities.

### 12.4 MOBILITY IN SOIL

- It is to be expected this product will have small mobility in soil. Some of the components may get into the soil and, ultimately, the ground water.

## SECTION 13: DISPOSAL CONSIDERATION

### 13.1 WASTE TREATMENT METHODS

- **WASTE HANDLING RECOMMENDATIONS:** Prepare, transport, treat, store, and dispose of waste product according to all applicable local, U.S. State and U.S. Federal regulations, the applicable Canadian standards, or the appropriate standards of the nations of the European Community.
- **PRECIOUS METAL RECLAMATION:** When applicable and practical, users of the product may wish to utilize precious metal reclamation services for final disposition of wastes.

## SECTION 14: TRANSPORT INFORMATION

### 14.1 DANGEROUS GOODS BASIC DESCRIPTION AND OTHER TRANSPORT INFORMATION

- This material is not hazardous for shipment, based on the volume of material shipped, per the Hazardous Materials Regulations. Please contact the manufacturer for information.

### 14.2 ENVIRONMENTAL HAZARDS

- None described, as related to transportation.

### 14.3 SPECIAL PRECAUTIONS FOR USERS

- Not applicable.

### 14.4 TRANSPORT IN BULK

- Not applicable.



## SECTION 15: REGULATORY INFORMATION

### 15.1 SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT.

#### • OTHER IMPORTANT U.S. REGULATIONS

- **U.S. SARA THRESHOLD PLANNING QUANTITY:** Not applicable.
- **U.S. SARA HAZARD CATEGORIES (SECTION 311/312, 40 CFR 370-21):** ACUTE: Yes; CHRONIC: No; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No
- **U.S. CERCLA REPORTABLE QUANTITY (RQ):** Not applicable.
- **U.S. SARA 313:** Zinc Oxide (as Zinc Compound) is subject to SARA Title III Section 313 requirements.
- **U.S. TSCA INVENTORY STATUS:** All components are listed on the TSCA Inventory.
- **CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) STATUS:** Not applicable.

#### • INTERNATIONAL REGULATIONS

- **CANADIAN DSL/NDSL INVENTORY STATUS:** The listed components of this product are on the DSL/NDSL Inventory.
- **CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS:** The components of this product are not on the CEPA Priorities Substances Lists.

## SECTION 16: OTHER INFORMATION

### 16.1 INDICATION OF CHANGE.

- **CHANGE INDICATED:** Update per OSHA Hazard Communication Standard (29 CFR 1910.1200).
- **DATES OF PUBLICATION:** January 20, 2016.
- **SUPERCEDES:** May 4, 2013.

### 16.2 KEY LITERATURE REFERENCES AND SOURCES FOR DATA

- ECHA: European Chemical Hazards Agency <http://echa.europa.eu/en/information-on-chemicals/>
- TOXNET: <http://toxnet.nlm.nih.gov/>

### 16.3 ABBREVIATIONS AND ACRONYMS.

**ALL SECTIONS:** OSHA: U.S. Federal Occupational Safety and Health Administration. WHMIS: Canadian Workplace Hazardous Materials Standard. GHS: Globally Harmonized System of Classification of Chemical Substances. REACH: European Union regulation, Registration, Evaluation, Authorization and Restriction of Chemical substances.

**SECTION 2:** CAS Number: Chemical Abstract Service Number, which is used by the American chemical Society to uniquely identify a chemical. EINECS: European Inventory of Existing Commercial Substances.

**SECTION 3:** HAZARDOUS MATERIALS IDENTIFICATION SYSTEM RATING: This is a rating system used by industry to summarize physical and health hazards to chemical users and was originally developed by the National Paint and Coating Association. 0 = No Significant Hazard. 1 = Slight Hazard. 2 = Moderate Hazard. 3 = Severe Hazard. 4 = Extreme Hazard.

**SECTION 5:** NFPA: National Fire Protection Association. NFPA FLAMMABILITY CLASSIFICATION: The NFPA uses the flash point (F.P.) and boiling point (BP) to classify flammable or combustible liquids. Class IA: F.P. below 73°F and BP below 100°F. Class IB: F.P. below 73°F and BP at or above 100°F. Class IC: F.P. at or above 73°F and BP at or above 100°F. Class II: F.P. at or above 100°F and below 140°F. Class IIIA: F.P. at or above 140°F and below 200°F. Class IIIB: F.P. at or above 200°F. NFPA HAZARDOUS MATERIALS RATING: This is a rating system used to summarize physical and health hazards to firefighters. 0 = No Significant Hazard. 1 = Slight Hazard. 2 = Moderate Hazard. 3 = Severe Hazard. 4 = Extreme Hazard.

**SECTION 8:** NE: Not established. ACGIH: American Conference of Government Industrial Hygienists; TWA: Time-Weighted Average (over an 8-hour work day); STEL: Short-Term Exposure Limit (15 minute average, no more than 4-times daily and each exposure separated by one-hour minimally); C: Ceiling Limit (concentration not to be exceeded in a work environment). PEL: Permissible Exposure Limit. NIOSH: National Institute of Occupational Safety and Health; REL: Recommended Exposure Limit; IDLH: Immediately Dangerous to Life and Health Concentrations. Note: In July 1992, a court ruling vacated the more protective PELs set by OSHA in 1989. Because OSHA may enforce the more protective levels under the "general duty clause", both the current and vacated levels are presented in this document. ppm: Parts per Million. mg/m<sup>3</sup>: Milligrams per cubic meter. mppcf: Millions of Particles per Cubic Foot. BEI: Biological Exposure Limit. EL: Exposure Limit (

United Kingdom). Federal Republic of Germany (DFG) Maximum Concentration Values in the Workplace (MAKs)

**SECTION 9:** pH: Scale (0 to 14) used to rate the acidity or alkalinity of aqueous solutions. For example, a pH value of 0 indicates a strongly acidic solution, pH of 7 indicates a neutral solution, and a pH value of 14 indicates an extremely basic solution. FLASH POINT: Temperature at which a liquid generates enough flammable vapors so that ignition may occur. AUTOIGNITION TEMPERATURE: Temperature at which spontaneous ignition occurs. LOWER EXPLOSIVE LIMIT (LEL): The minimal concentration of flammable vapors in air which will sustain ignition. UPPER EXPLOSIVE LIMIT (UEL): The maximum concentration of flammable vapors in air which will sustain ignition. ≈: Approximately symbol.

**SECTION 11:** CARCINOGENICITY STATUS: NTP: National Toxicology Program. IARC: International Agency for Research on Cancer. REPRODUCTIVE TOXICITY INFORMATION: Mutagen: Substance capable of causing chromosomal damage to cells. Embryotoxin: Substance capable of damaging the developing embryo in an overexposed female. Teratogen: Substance capable of damaging the developing fetus in an overexposed female. Reproductive toxin: Substance capable of adversely affecting male or female reproductive organs or functions. TOXICOLOGY DATA: LDxx or LCxx: The Lethal Dose or Lethal Concentration of a substance which will be fatal to a given percentage (xx) of exposed test animals by the designate route of administration. This value is used to access the toxicity of chemical substances to humans. TDxx or TCxx: The Toxic Dose or Toxic Concentration of a substance which will cause an adverse effect to a given percentage (xx) of exposed test animals by the designate route of administration.

**SECTION 12:** T<sub>LM</sub> – Median Tolerance Limit

**SECTION 13:** RCRA: Resource Conservation and Recovery Act. The regulations promulgated under this act under Act are found in 40 CFR, Sections 260 ff, and define the requirements of hazardous waste generation, transport, treatment, storage, and disposal. EPA RCRA Waste Codes: Defined in 40 CFR Section 261.

**SECTION 15:** CERCLA: Comprehensive Environmental Response Compensation and Liability Act (a.k.a. "Superfund") and SARA: (Superfund Amendment and Reauthorization Act). The regulations promulgated under this Act are located under 40 CFR 300 ff. and provide "community right-to-know" requirements. DSL/NDSL: Canadian Domestic Substances and Non-Domestic Substances Lists.