SAFETY DATA SHEET

KROHN INDUSTRIES
Quality & Service Since 1955

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) and equivalent state Standards. It has also been developed in accordance with the United Nations Globally Harmonized System of Classification of Chemicals (GHS), and the Canadian Workplace Hazardous Materials Information System (WHMIS). 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: **HEAVY DUTY ELECTROCLEANER**
- CHEMICAL NAME/CLASS: Inorganic base solution.

1.2 RELEVANT IDENTIFIED USES OF THE MIXTURE OR USES ADVISED AGAINST

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

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

- MANUFACTURER/ SUPPLIER: **KROHN INDUSTRIES, INC.**
- ADDRESS 303 Veterans Blvd.; Carlstadt, NJ; 07072
- BUSINESS PHONE: 201-933-9696
- EMERGENCY PHONE: 1-800-255-3924/813-248-0573(CHEMTEL; 24 hours/International)

SECTION 2: HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

REGULATION	CLASSIFICATION
OSHA HAZARD COMMUNICATION (GHS)	Corrosive to metals (Category 1), Acute toxicity, Oral (Category 4), Skin corrosion (Category 1C), Serious eye damage (Category 1)

2.2 LABEL ELEMENTS

- BASED ON GLOBALLY HARMONIZED SYSTEM

Symbol: To the right.
Signal Word: Danger.
Hazard statement(s)

- H290: May be corrosive to metals. H314: Causes severe skin burns and eye damage. H318: Causes serious eye damage.

Precautionary statement(s)

- P234 Keep only in original container. P264 Wash skin thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. P363 Wash contaminated clothing before reuse. P390 Absorb spillage to prevent material damage. P405 Store locked up. P406 Store in corrosive resistant stainless-steel container with a resistant inner liner. P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 2: HAZARDS IDENTIFICATION (Continued)

2.3 LABEL ELEMENTS (Continued)

Precautionary statement(s)

- P234 Keep only in original container.
- P264 Wash skin thoroughly after handling.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340 + P310
- IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- P363 Wash contaminated clothing before reuse.
- P390 Absorb spillage to prevent material damage.
- P405 Store locked up.
- P406 Store in corrosive resistant stainless-steel container with a resistant inner liner.
- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 OTHER PERTINENT DATA ON CHEMICAL AND PHYSICAL HAZARDS

- **HAZARDOUS MATERIALS IDENTIFICATION SYSTEM**

Health	**3**	HMIS Personal Protective Equipment Rating: Occupational Use situations: **C -** Safety glasses and gloves, and body protection suitable to specific circumstances of use
Flammability	**0**	
Physical Hazard	**0**	
Protective Equipment	**C**	

- **CANADIAN REGULATORY STATUS**
  - This product is classified as hazardous under Canadian Hazardous Products regulations (SOR 2015-17). See the above section for classification.
  - This SDS contains all the information required by the HPR.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 SUBSTANCES/MIXTURES

COMPONENT	CAS NUMBER	GHS HAZARD CLASSIFICATION	% (w/w)
Potassium Hydroxide	1310-58-3	Corrosive to metals (Category 1), Acute toxicity, Oral (Category 4), Skin corrosion (Category 1A), Serious eye damage (Category 1); Aquatic toxicity (category 3)	1-3
Tetrapotassium Pyrophosphate	7320-34-5	Corrosive to metals (Category 1), Acute toxicity, Oral (Category 4), Skin irritation (Category 2), Serious eye damage (Category 2A);	1-3
Water and other components. Each of the other components is present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens.)			Balance

SECTION 4: FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

AREA EXPOSED	
Eye Contact	Flush with copious amounts of water for 15 minutes. "Roll" eyes during flush. Seek medical attention immediately.
Skin Contact	Flush area with warm, running water for several minutes. Seek medical attention immediately.
Inhalation	Obtain fresh air. Seek medical attention immediately.
Ingestion	If conscious only: Rinse mouth with water. Do not induce vomiting. Contact a Poison Control Center or physician for instructions.
Other Recommendations	Wash clothing after reuse.

4.2 MOST IMPORTANT ACUTE AND CHRONIC EXPOSURE SYMPTOMS

- **ACUTE HEALTH EFFECTS:**

AREA EXPOSED	
Eye Contact	Corrosive to eye tissue; contact will cause pain, redness, and tissue damage. Chemical burns and blindness may occur.
Skin Contact	Corrosive to skin tissue; contact will cause pain, redness, and tissue damage. Chemical burns may occur.
Inhalation	Very irritating to the respiratory system; inhalation of sprays, mists, and vapors can cause coughing, nasal congestion and sore throat.
Ingestion	Corrosive and may cause severe and permanent damage to mouth, throat, and stomach. May be fatal if swallowed.

- **CHRONIC HEALTH EFFECTS:** Prolonged or repeated eye contact may cause conjunctivitis. Prolonged or repeated skin contact may cause dermatitis.
- **TARGET ORGANS:** Skin, eyes.

4.3 INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

- **GENERAL INFORMATION: For all exposures:** In case of accident, or if you feel unwell, seek medical advice immediately. Take this document and a copy of the label to the healthcare professional.
- **RECOMMENDATIONS TO PHYSICIANS:** Treat symptomatically.
- **MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:** None reported.

SECTION 5: FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

- **RECOMMENDED FIRE EXTINGUISHING MEDIA:** Water Spray, Water Jet, Dry Powder, Foam, Carbon Dioxide, or any other.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

- **NFPA FLAMMABILITY CLASSIFICATION:**

NFPA Rating

NFPA Classification Not flammable. Corrosive.

- **UNUSUAL HAZARDS IN FIRE SITUATIONS:**

Decomposition	Generates corrosive vapors, oxides of carbon and compounds containing potassium and phosphorous.
Explosion Sensitivity to Mechanical Impact	Not applicable.
Explosion Sensitivity to Static Discharge	Not applicable.

SECTION 5: FIREFIGHTING MEASURES (Continued)

5.3 ADVICE FOR FIREFIGHTERS

- Self-Contained Breathing Apparatus and full protective equipment for fire response should be worn in any situation. Move containers from fire area if it can be done without risk to personnel. Otherwise, use water spray to keep fire-exposed containers cool. Because this product is a cleaning agent, any equipment that comes in contact with this solution can be rinsed thoroughly with water and then returned 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. Gloves and safety glasses must be worn when cleaning-up spills. Use caution during clean-up; contaminated floors and items may be slippery.
- **RESPONSE TO NON-INCIDENTAL RELEASES:** Generally, releases of this product will be no larger than the loss of one shipment of material. Subsequently, personnel can follow the instructions for incidental releases. As needed, respond to non-incidental chemical releases of this product (such as the simultaneous destruction of several pallets of this product) by clearing the impacted area and contacting appropriate emergency personnel.

  In the unlikely event of a multi-container release of the product**,** and there is no other hazardous condition in the area, the use of an air-purifying respirator with acid high-efficiency-particulate filter cartridge, face-shield, safety glasses, and double gloves (e.g. nitrile over latex gloves), and body protection is recommended if splashes/sprays/mists can be generated during clean-up or the concentration of vapors is high. Use Self-Contained Breathing Apparatus if concentration of oxygen is less than 19.5% or is unknown.
- **RESPONSE PROCEDURES FOR ANY RELEASE:** Absorb spilled liquid with polypads or other suitable absorbent materials. If appropriate, neutralize contaminated area and equipment with base neutralizing agent. Rinse contaminated items and area thoroughly. Confirm that neutralization/decontamination is complete by testing with pH paper.

6.2 ENVIORNMENTAL PRECAUTIONS

- Avoid response actions that can cause a release of a significant amount of the substance into the environment. Avoid accidental dispersal of spilled material into soil, waterways and sewers.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

- **SPILL RESPONSE EQUIPMENT:** Polypad or other absorbent material; base neutralizing agent; pH paper.

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	Follow good chemical hygiene practices. Do not smoke, drink, eat, or apply cosmetics in the chemical use area. Avoid inhalation of vapors, mists and sprays. Use in well-ventilated area. Avoid contact with skin or eyes. Remove contaminated clothing promptly. Clean up spilled product immediately.
Handling Practices	Employees must be appropriately trained to use this product safely as needed. Keep containers closed when not in use.

SECTION 7: HANDLING AND STORAGE (Continued)

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage Practices Store in original container or corrosive resistant container with a resistant inner liner. 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 Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Empty containers may contain residual liquid and should be handled with care.

Incompatibilities See Section 10 (Stability and Reactivity).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

- **U.S. NATIONAL EXPOSURE LIMITS:**

COMPONENT	ACGIH TLV	OSHA PEL	NIOSH REL	OTHER
Potassium Hydroxide	2 ppm, Ceiling	NE	2 ppm, Ceiling	CAL-PEL: 2 ppm, Ceiling

- **BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS:** Not established.

8.2 EXPOSURE CONTROLS

Engineering Controls Use in well-ventilated environment.
Respiratory Protection None needed in normal circumstances of use.
Hand Protection Neoprene or nitrile gloves are recommended. Ensure gloves are intact prior to use.
Eye Protection Safety glasses or safety goggles.
Body Protection Corrosive-resistant protection used in janitorial service (e.g., rubber apron), if excessive splashes or sprays are anticipated.

8.3 PERSONAL PROTECTION SYMBOLS

Hand Protection 

Eye Protection 

Body Protection 

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, colorless liquid.
Odor	Characteristic.
Odor Threshold	No data available.
pH	9-10
Melting Point/Freezing Point	≤ 0°C (32 °F).
Initial Boiling Point/Boiling Range	≥100°C (212 °F).
Flash Point	No data available.
Evaporation Rate (Water = 1)	No data available.
Flammability	No data available.
Upper/Lower Explosive Limits	No data available.
Vapor Pressure	No data available.
Vapor Density	No data available.
Relative Density	Greater than 1
Solubility	Completely soluble in water.
Partition Coefficient/n-octanol/water	No data available.
Autoignition Temperature	No data available.
Decomposition Temperature	No data available.
Viscosity	No data available.

9.2 OTHER INFORMATION

- **VOC (less water & exempt):** No data available. **WEIGHT% VOC:** No data available.

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

- Product is not self-reactive, water-reactive, or air-reactive; it will not undergo hazardous polymerization**.**

10.4 CONDITIONS TO AVOID

- Avoid contact with incompatible chemicals and adverse storage conditions.

10.5 INCOMPATIBLE MATERIALS

- Acids. Soft metals. Aluminum. Do not mix with anything but water.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

- Products of thermal decomposition include corrosive vapors, carbon oxides, and potassium and phosphorous compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

- **ACUTE TOXICITY:**
  - **PRODUCT TOXICITY DATA:**
    - Acute Toxicity Estimate (oral) > 2000 mg/kg
  - **COMPONENT TOXICITY DATA:** The following toxicology data are available for the listed components of this product.

    POTASSIUM HYDROXIDE
    LD50 (Oral, Rat) = 214 mg/kg

    TETRAPOTASSIUM PYROPHOSPHATE
    LD50 (Oral, Rat) > 4640 mg/kg
  - **DEGREE OF IRRITATION:** Moderate to severe especially after prolonged exposure.
  - **SENSITIZATION:** No component is reported to cause sensitization.
  - (Hazards Information) and Section 4 (First-Aid Measures) for additional details.

Eyes	May cause moderate to severe eye irritation and chemical burns.
Skin	May cause moderate to severe skin irritation, and chemical burns.
Inhalation	Mild to severe irritation of membranes of nose, mouth, throat.
Ingestion	Severe irritation and chemical burns of gastrointestinal system. May be fatal if swallowed.

- **CHRONIC TOXICITY:**
  - **CARCINOGENICITY STATUS:** Not applicable; no components of this product are noted on NTP, IARC, or OSHA lists of carcinogens.
  - **REPRODUCTIVE TOXICITY INFORMATION:** The components of this product are not reported to cause reproductive effects under typical circumstances of exposure.
  - **MUTAGENIC EFFECTS** The components of this product are not reported to cause mutagenic effects under typical circumstances of exposure.
  - **SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE:** Not applicable.
  - **SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE:** Not applicable.
  - **ASPIRATION HAZARD:** Not applicable.
- **OTHER INFORMATION**
  - **TOXICOLOGICALLY SYNERGISTIC PRODUCTS:** None known.
  - **ADDITIONAL TOXICOLOGY:** Not applicable.

SECTION 12: ECOLOGICAL INFORMATION

12.1 TOXICITY

- Based on available data, this product is anticipated to be harmful or fatal to contaminated terrestrial and aquatic plants or animals. It has the potential to significantly raise the pH of the surrounding local water systems.
- The following aquatic toxicity data are available for components of this product.

POTASSIUM HYDROXIDE
LC50 (*Gambusia affinis*) - 80 mg/l - 96 hours
LC50 (Pisces; Pure substance) - 28.6 mg/l - 24 hours
LC50 (other aquatic organisms) 100 - 1000 mg/l - 96 hours
Threshold limit other aquatic organisms 100 - 1000,96 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

- This product is not anticipated to bioaccumulate significantly. The following data are available for components of this product:
  - **Potassium Hydroxide:** Log PoW: 0.83

12.4 MOBILITY IN SOIL

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

12.5 OTHER ADVERSE EFFECTS

- None reported.

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, or the applicable Canadian standards.
- **PRECIOUS METAL RECLAMATION:** Users of the product may wish to utilize precious metal reclamation services for final disposition of wastes.

13.2 DISPOSAL CONSIDERATIONS

- **EPA RCRA WASTE CODE:** D002, for wastes consisting only of this product.

SECTION 14: TRANSPORT INFORMATION

14.1 DANGEROUS GOODS BASIC DESCRIPTION AND OTHER TRANSPORT INFORMATION

- **DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIALS SHIPPING REGULATIONS:**

UN/NA Number	Proper Shipping Name	Packing Group	Hazard Class	Label	North American Emergency Response Guide #	Marine Pollutant Status
UN3266	Corrosive liquid, basic, inorganic, n.o.s. (Potassium Hydroxide, Tetrapotassium Pyrophosphate)	III	8		154	Not applicable.

- **CANADIAN TRANSPORTATION INFORMATION**: This product is regulated by Transport Canada as dangerous goods under Canadian transportation standards. Refer to above information.

SECTION 14: TRANSPORT INFORMATION (Continued)

- **IATA DESIGNATION**: This product is regulated as dangerous goods by the International Air Transport Association.
- **IMO DESIGNATION**: This product is regulated as dangerous goods by the International Maritime Organization. Use the following information:

14.2 ENVIRONMENTAL HAZARDS

- Because of the presence of Cyanide compounds, this product would be designated as a Marine Pollutant. However, because of the volume of packaging, the product is exempt from the requirements for Marine Pollutants.

14.3 SPECIAL PRECAUTIONS FOR USERS

- Not applicable.

14.4 TRANSPORT IN BULK

- Not applicable.

SECTION 15: REGULATORY INFORMATION

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):** Metal Corrosion; Skin Corrosion/Irritation; Eye Damage/Irritation.
- **U.S. CERCLA REPORTABLE QUANTITY (RQ):** Potassium Hydroxide = 1000 lb.
- **U.S. SARA 313:** No component is subject to the reporting requirements.
- **U.S. TSCA INVENTORY STATUS:** All components of this product are listed on the TSCA Inventory.
- **CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) STATUS:** Not applicable.

INTERNATIONAL REGULATIONS

- **CANADIAN REGULATORY STATUS: CANADIAN REGULATORY STATUS:** The product is classified as hazardous under Hazardous Products Regulations (SOR-2015-17).
  WHMIS 2015: See section 2.
  This SDS contains all the information required by the HPR.
- **CANADIAN DSL/NDSL INVENTORY STATUS:** The listed components of this product are on inventory or exempted.
- **CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITY SUBSTANCES LISTS:** The listed components of this product are not on the CEPA Priority Substances Lists.

SECTION 16: OTHER INFORMATION

16.1 INDICATION OF CHANGE.

- **ORIGINAL DATE OF ISSUE:** September 23, 2019
- **SUPERCEDES:** Not applicable.
- **CHANGE INDICATED:** Not applicable.

16.2 KEY LITERATURE REFERENCES AND SOURCES FOR DATA

- SAFETY DATA SHEETS FOR COMPONENT PRODUCTS.
- Federal OSHA Hazard Communication Standard: 29 CFR 1910.1200
- SAX – Dangerous Properties of Industrial Materials
- RTECS – Registry of Effects of Toxic Chemicals

16.3 CLASSIFICATION AND PROCEDURE USED TO DERIVE THE CLASSIFICATIONS FOR MIXTURES

- CLASSIFICATION: Section 2 (Hazards Information) provides all relevant classification information used for this product. The assignments were based on data available for the component products, calculations, expert judgment, and weight of evidence.

16.4 WARRANY AND COPYRIGHT

- WARRANTY: 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. Krohn Industries. 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, Krohn Industries 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.
-

16.5 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

SECTION 2: 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 3: CAS Number: Chemical Abstract Service Number, which is used by the American chemical Society to uniquely identify a chemical.

SECTION 5: NFPA: National Fire Protection Association. NFPA FLAMMABILITY CLASSIFICATION: The NFPA uses the flash point (Fl.P.) and boiling point (BP) to classify flammable or combustible liquids. Class IA: Fl.P. below 73°F and BP below 100°F. Class IB: Fl.P. below 73°F and BP at or above 100°F. Class IC: Fl.P. at or above 73°F and BP at or above 100°F. Class II: Fl.P. at or above 100°F and below 140°F. Class IIIA: Fl.P. at or above 140°F and below 200°F. Class IIIB: Fl.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^3: Milligrams per cubic meter. mppcf: Millions of Particles per Cubic Foot. BEI: Biological Exposure Limit.

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: LD*xx* or LC*xx*: 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 assess the toxicity of chemical substances to humans. TD*xx* or TC*xx*: 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: **TLm –** Median Tolerance Limit

SECTION 13: RCRA: Resource Conservation and Recovery Act. The regulations promulgated under this 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.