SAFETY DATA SHEET

ARGENTIUM®
THE FINEST SILVER

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: **ARGENTIUM PASTE SOLDER**
  - ARGENTIUM EASY PASTE SOLDER
  - ARGENTIUM MEDIUM PASTE SOLDER
  - ARGENTIUM HARD PASTE SOLDER

1.2 RELEVANT IDENTIFIED USES OF THE MIXTURE OR USES ADVISED AGAINST

- IDENTIFIED USE: Soldering Operations
- 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(CHEMTEL; 24 hours)

1.4 OTHER PERTINENT INFORMATION

- This product is used for used as a solder; it has limited hazards except when heated to the point fumes are emitted. All pertinent hazards related to soldering are provided in the pertinent sections of this document (i.e., sections 7, 8, and 11).

SECTION 2: HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

REGULATION	CLASSIFICATION
US OSHA HCS CANADA WHMIS	Not classified as hazardous. NOTE: If the product is heated into a molten form, thermal burns are possible upon contact.

- **LABEL ELEMENTS:** BASED ON GLOBALLY HARMONIZED SYSTEM

  - **Symbol:** See information to the right.
  - **Signal Word:** Danger.
  - **Hazard statement(s):** H360: May damage fertility or the unborn child.
  - **Precautionary statement(s):** P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P280: Wear protective gloves/protective clothing/eye protection/face protection. P308+311: IF exposed or concerned: Get medical advice/ attention. P405: Store locked up. P501: Dispose of contents/ container to an approved waste disposal plant.

SECTION 2: HAZARDS IDENTIFICATION (CONTINUED)

2.2 OTHER PERTINENT DATA ON CHEMICAL AND PHYSICAL HAZARDS:

- **HAZARDOUS MATERIALS IDENTIFICATION SYSTEM**

Health	**1***	* Toxic to Reproduction. HMIS Personal Protective Equipment Rating: Occupational use (i.e., soldering): 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**
  - WHMIS 2015: See Previous Section.
  - This SDS contains all the information required by the Hazardous Products Regulations.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 SUBSTANCES/MIXTURES

COMPONENT	CAS NUMBER	GHS HAZARD CLASSIFICATION	% (w/w)
Silver	7440-22-4	In this form: Not classified has hazardous.	55-85%
Zinc	7440-66-6	In this form: Not classified has hazardous.	
Copper	7440-50-8	In this form: Not classified has hazardous.	
Boric acid	10043-35-3	Reproductive toxicity (Category 1B)	0.5 – 5%
Potassium fluoride	7789-23-3	Acute toxicity, Oral (Category 3), Acute toxicity, Inhalation (Category 3), Acute toxicity, Dermal (Category 3)	0.5 – 5%
Potassium tetraborate	1332-77-0	Reproductive toxicity (Category 2)	0.5 – 5%
Germanium	7440-56-4	In this form: Not classified has hazardous.	0.35-1.0%
None of the remaining components of this product contribute health or physical hazards, as defined in OSHA Hazard Communication Standard (29 CFR 1910.1200, Appendices A and B).			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. Check for and remove contact lenses. Seek medical attention if irritation persists.

Skin Contact — Flush area with warm, running water for several minutes. Seek medical attention if irritation persists.

Inhalation — Obtain fresh air. See medical attention if symptoms persist or develop after exposure ends.

Ingestion — If conscious only: Rinse mouth with water. Do not induce vomiting. Contact a Poison Control Center or physician for instructions.

Thermal burns — Rinse area thoroughly with cold water. Cover with a clean bandage and obtain appropriate medical treatment.

4.2 MOST IMPORTANT ACUTE AND CHRONIC EXPOSURE SYMPTOMS

- **ACUTE:** The following symptoms may arise in the event there is exposure to product or its fumes:

AREA EXPOSED

Eye Contact — Can causes eye irritation. Can cause pain and redness upon contact; prolonged contact can be damaging though mechanical irritation.

Skin Contact — May cause skin irritation. May cause pain and redness upon contact through mechanical irritation

SECTION 4: FIRST AID MEASURES (CONTINUED)

Inhalation	May cause respiratory tract irritation; symptoms may include coughing and sneezing depending on volume of product/fumes that is inhaled.
Ingestion	May be harmful if swallowed. Can cause gastrointestinal system irritation; symptoms may include pain, sore throat, nausea and vomiting.
Molten Product	Contact with molten material can cause thermal burns.

- **CHRONIC:** See section 11 for information on Metal Fume Fever.
- **TARGET ORGANS:** Reproductive system.

4.3 INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

- **RECOMMENDATIONS TO PHYSICIANS**: Treat symptoms and eliminate exposure.
- **MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:** None known for product. Inhalation of solder fumes/dusts can aggravate respiratory conditions.

SECTION 5: FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

- **RECOMMENDED FIRE EXTINGUISHING MEDIA:** Water Spray, Water Jet, Dry Powder, Foam, Carbon Dioxide, 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. This product does not significantly 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. For small releases, the minimum Personal Protective Equipment should be rubber gloves and, splash goggles or safety glasses. Use caution during clean-up; contaminated floors and items may be slippery. NOTE: Allow heated material to cool before attempting to clean.
- **RESPONSE TO NON-INCIDENTAL RELEASES:** Use recommendations above for incidental releases.
- **RESPONSE PROCEDURES FOR ANY RELEASE**: Absorb spilled material with polypads or other suitable absorbent materials. If needed, rinse area with soap/water solution followed by a water rinse.

6.2 ENVIRONMENTAL PRECAUTIONS

- Avoid response actions that can cause a release of a significant amount of the substance (1 liter 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 product or its fumes. Use in well-ventilated area. Avoid contact with skin or eyes. Remove contaminated clothing promptly. Clean up spilled product immediately.

- **HANDLING RECOMMENDATIONS:**
    - **General:** Employees must be appropriately trained to use this product safely as needed. Keep containers closed when not in use.
    - **Soldering Applications:** Any surface that comes in contact with molten metal must be preheated or specially coated and rust free. Keep melting/soldering temperatures as low as possible to minimize the generation of fumes.

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. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

- **AIRBORNE EXPOSURE LIMITS:** The following exposure limits are applicable to dusts or fumes of the component metals only:

COMPONENT	ACGIH TLV	OSHA PEL	NIOSH REL	OTHER
Copper (Dust)	TWA = 1 mg/m^3	TWA = 1 mg/m^3	TWA = 1 mg/m^3	NE
Copper (Fume)	TWA = 0.2 mg/m^3	TWA = 0.1 mg/m^3	TWA = 0.1 mg/m^3	NE
Silver (Dust and Fume)	TWA = 0.1 mg/m^3	TWA = 0.01 mg/m^3	TWA = 0.01 mg/m^3	NE
Zinc (oxide, fumes)	NE	TWA = 5 mg/m^3	TWA = 5 mg/m^3 STEL = 10 mg/m^3	NE
Potassium Fluoride (as Fluorides)	2.5mg/m^3 TWA	2.5mg/m^3 TWA	2.5mg/m^3 TWA	NE.
Boric Acid/Potassium Tetraborate (as Borate compounds)	2mg/m^3 TWA; 6 mg/m^3 STEL (Inhalable Fraction of Aerosol)	NE	NE.	NE.

- **BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS:** The following Biological Exposure Indices (BEIs) are for components of this product.
    - Potassium Fluoride (as Fluoride): Fluoride in urine prior to shift = 2 mg/L; Fluoride in urine end of shift = 3 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 fumes. For situations in which significant amounts of fumes could be generated, wear an air-purifying respirator with a high-efficiency particulate filter.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

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- **HAND PROTECTION:** Neoprene gloves should be used. If necessary, refer to U.S. OSHA 29 CFR 1910.138, or appropriate state, local, or national standards.
- **EYE PROTECTION:** Splash goggles or safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate state, local, 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 to fumes could occur in occupational settings.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

(a) APPEARANCE: Various colors; semi-solid.
(b) ODOR: Odorless.
(c) ODOR THRESHOLD: Not determined.
(d) pH: Not applicable.
(e) MELTING POINT/FREEZING POINT: 35 – 80 °C (85 – 176 °F).
(f) INITIAL BOILING POINT AND BOILING RANGE: > 230 °C (446 °F)
(g) FLASH POINT: >93.4 °C (200 °F).
(h) EVAPORATION RATE (water=1): Not determined.
(i) FLAMMABILITY: Not flammable.
(j) UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: Not applicable.
(k) VAPOR PRESSURE (mmHg @ 20˚C): Not **(k) VAPOR PRESSURE (mmHg @ 20˚C):** <0.1 kPa at 20 °C
(l) VAPOR DENSITY: Not determined.
(m) DENSITY: Not determined.
(n) SOLUBILITY: Insoluble.
(o) PARTITION COEFFICIENT: N-OCTANOL/WATER: Not determined.
(p) AUTO-IGNITION TEMPERATURE: Not applicable.
(q) DECOMPOSITION TEMPERATURE: Not determined.
(r) VISCOSITY: Not determined.
(s) EXPLOSIVE PROPERTIES: Not applicable.
(t) OXIDIZING PROPERTIES: Not an oxidizer.

9.2 OTHER INFORMATION

- **VOC (less water & exempt):** Not applicable.

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. This product will not undergo hazardous polymerization**.**

10.4 CONDITIONS TO AVOID

- Avoid contact with incompatible chemicals.

10.5 INCOMPATIBLE MATERIALS

- This product is not compatible with strong oxidizing agents, strong acids, strong bases, amines, combustible material, and peroxides.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

- Heating of this product can release silver, copper and zinc oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

- **ACUTE TOXICITY:**
  - **PRODUCT ESTIMATED TOXICITY:**
    - Acute Toxicity Estimate (Oral) > 2000 mg//kg
    - Acute Toxicity Estimate (Dermal) > 2500 mg/kg
    - Acute Toxicity Estimate (Inhalation) > 5 mg/L (Dust and Mist)
  - **TOXICOLOGY DATA:** The following data are available for hazardous components in this product greater than 1% in concentration

COPPER METAL
Oral-Rat LD50 > 5000 mg/kg
Dermal-Rabbit > 2000 mg/kg

SILVER METAL
Oral-Rat LD50 > 5000 mg/kg
Dermal-Rabbit > 2000 mg/kg

GERMANIUM
Inhalation-Rat LC50 > 5.34 g/m^3, 4 hours

ZINC METAL
Oral - Rat – LD50 = 630 mg/kg

- **COMPONENT TOXICITY DATA**: The following data are available for components of this product.

BORIC ACID
LD50 (oral, rat) = 3500 – 4100 mg/kg
LD50 (dermal, rat) = 2000 mg/kg
LC5-(inhalation, rat) = >2.03 mg/L Rat/4 hours

POTASSIUM FLUORIDE
LD50 (oral, rat) = 245 mg/kg
LD50 (dermal, rat) = 300 mg/kg (estimate)
LC5-(inhalation, rat) = 0.5 mg/L Rat/4 hours (Dust/Mist; Estimate)

POTASSIUM TETRABORATE
LD50 (oral, rat) > 2500 mg/kg
LD50 (dermal, rat) > 2000 mg/kg
LC5-(inhalation, rat) > 2.04 mg/L Rat/4 hours

  - **DEGREE OF IRRITATION:** May cause mild skin or eye irritation, depending on duration of exposure.
  - **SENSITIZATION:** Not reported to have skin or respiratory sensitization effects.
  - **REVIEW OF ACUTE SYMPTOMS AND EFFECTS:** See Section 2 (Hazards Information) and Section 4 (First-Aid Measures) for further details.
    - **EYES:** Contact with product can cause irritation.
    - **SKIN**: Contact with Product can cause irritation.
    - **INHALATION:** Particulates and fumes of this product can cause mild to severe nasal irritation.
    - **INGESTION:** Although not anticipated to be a significant route of occupational over-exposures, ingestion of this product may irritate the mouth, throat, and other contaminated tissue and cause other adverse health effects.
    - **MOLTEN MATERIAL CONTACT:** Can cause thermal burns.
  - **METAL FUME FEVER** Acute overexposure to product fumes result in metal fume fever, which causes symptoms such as sweet metal taste, dry throat, coughing, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue. Symptoms usually disappear within 24 hours. Copper may cause skin and hair discoloration. Inhalation of copper dusts may change the gums and mucous lining of
- **CHRONIC TOXICITY:**
  - **CARCINOGENICITY STATUS:** The following table summarizes the carcinogenicity listing for the components of this product. "NO" indicates that the substance is not considered to be, or suspected to be, a carcinogen by the listed agency.

CHEMICAL	IARC	NTP	NIOSH	OSHA	OTHER
Copper (Dusts and Fumes)	NO	NO	NO	NO	EPA D: Not classifiable as to human carcinogenicity
Silver (Dusts and Fumes)	NO	NO	NO	NO	EPA D: Not classifiable as to human carcinogenicity
Zinc	NO	NO	NO	NO	EPA DII: Not classifiable as to human carcinogenicity; inadequate data.

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- **REPRODUCTIVE TOXICITY INFORMATION: REPRODUCTIVE TOXICITY INFORMATION:** The components of this product are not reported to cause reproductive effects under typical circumstances of exposure associated with use of the product as directed. The following data are available, in terms or reproductive toxicity effects:
    - **POTASSIUM TETRABORATE:** Suspected human reproductive toxicant Suspected of damaging the unborn child, based on studies involving test animals exposed to relative high doses of borate compounds.
    - **BORIC ACID:** Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies with the chemically related boric acid in the rat, mouse and rabbit, at high doses, demonstrate developmental effects on the fetus, including fetal weight loss and minor skeletal variations. The doses administered were many times in excess of those to which humans would normally be exposed. Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust. A recent epidemiological study under the conditions of normal occupational exposure to borate dusts indicated no effect on fertility.
- **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.
- **ASPIRATION HAZARD:** Not applicable.

- **OTHER INFORMATION**
    - **TOXICOLOGICALLY SYNERGISTIC PRODUCTS:** None known.
    - **ADDITIONAL TOXICOLOGY:** None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1 TOXICITY

- Alloys of silver, copper and zinc present no threat to the environment when they occur in the size and form associated with this product. In ionic form, silver compounds can be highly toxic to the aquatic environment.

12.2 PERSISTENCE AND DEGRADABILITY

- Silver, copper and zinc occur naturally in the environment. It is anticipated that they will slowly react with water, salts, and other compounds found naturally in the environment over prolonged periods of time.

12.3 BIOACCUMULATIVE POTENTIAL

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

12.4 MOBILITY IN SOIL

- Alloys in the product's form are not mobile in the environment.

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.
- **METAL RECLAMATION:** When applicable and practical, users of the product may wish to utilize metal reclamation services for final disposition of wastes.

13.2 DISPOSAL CONSIDERATIONS

- **EPA RCRA WASTE CODE:** D011 (Silver); Applicable to wastes consisting only of this product.

SECTION 14: TRANSPORT INFORMATION

14.1 TRANSPORTATION REGULATIONS

- **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
NOT APPLICABLE						

- **CANADIAN TRANSPORTATION INFORMATION**: This product is not regulated by Transport Canada as dangerous goods under Canadian transportation standards. Refer to above information.
- **IATA DESIGNATION**: This product is not regulated as dangerous goods by the International Air Transport Association.
- **IMO DESIGNATION**: This product is not regulated as dangerous goods by the International Maritime Organization.

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 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):** Reproductive toxicity.
  - **U.S. CERCLA REPORTABLE QUANTITY (RQ):** Not applicable. For metals listed under CERCLA (i.e., silver, copper and zinc), no reporting of releases of the solid form is required if the mean diameter of the pieces of the solid metal released is greater than 100 micrometers (0.004 inches).
  - **U.S. TSCA INVENTORY STATUS:** All components of this product are listed on the TSCA Inventory.
  - **US SARA 313:** Silver and copper are subject to the SARA 313 reporting requirements.
  - **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) PRIORITY SUBSTANCES LISTS:** The components of this product are not on the CEPA Priority Substances Lists.

15.2: CHEMICAL SAFETY ASSESSMENT.

- No information available.

SECTION 16: OTHER INFORMATION

16.1 INDICATION OF CHANGE.

- **ORIGINAL DATE OF ISSUE:** August 29, 2022
- **SUPERCEDES:** August 29, 2022
- **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
- TOXNET – http://toxnet.nlm.nih.gov/

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.
- COPYRIGHT - © 2022 by Krohn Industries

SECTION 16: OTHER INFORMATION (Continued)

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.