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: **Eco Gold Plating Solution**
- SYNONYMS: Trade Names are listed below; the document is applicable to both standard solutions and mini-size products.

➢ **Eco 14K Gold Plating Solution**
➢ **Eco 18K Gold Plating Solution**
➢ **Eco 24K Gold Plating Solution**
➢ **Eco Light Rose Gold Plating Solution**

- CHEMICAL NAME/CLASS: Aqueous salt solution.

1.2 RELEVANT IDENTIFIED USES OF THE MIXTURE OR USES ADVISED AGAINST

- IDENTIFIED USE: Jewelry Plating
- USES ADVISED AGAINST: None Specified

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

- MANUFACTURER/SUPPLIER: **Gold Plating Services**
- ADDRESS 378 North Main Street #112 Layton, Utah 84041
- BUSINESS PHONE: 801- 546-6200
- EMERGENCY PHONE: **P.E.R.S.** In the USA #: 1 (800) 633-8253
  Outside USA #: 1 (801) 629-0667

1.4 OTHER PERTINENT INFORMATION

- This product is used as part of metal finishing and polishing processes in relatively small volume (1 kg and less in size). 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
US OSHA HCS CANADA WHMIS	Skin Corrosion/Irritation - Category 2, Serious Eye Damage, Eye Irritation - Category 2A; Reproductive Toxicity (Category 1B).

2.2 LABEL ELEMENTS:

- BASED ON GLOBALLY HARMONIZED SYSTEM

Symbol: To the right.
Signal Word: DANGER.
Hazard statement(s)
- Causes serious eye irritation. Causes skin irritation. May damage fertility or the unborn child.

SECTION 2: HAZARDS IDENTIFICATION

Precautionary statement(s)

- Keep out of reach of children. Read label before use. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.
- IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. 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. If exposed or concerned: Get medical advice/attention.
- Store locked up. 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	**2***	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. * Reproductive toxicity.
Flammability	**0**	
Physical Hazard	**0**	
Protective Equipment	**B/C**	

- **CANADIAN REGULATORY STATUS**
  - WHMIS 2015: See Previous Section.
  - Pre-2015 WHMIS: It is classified D2A/B: Materials Causing Other Toxic Effects/Very Toxic Material/Toxic Material.
  - 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)
Chelating Agent	Proprietary[1]	Eye Irritation (Category 2A)	1-5%
Gold Salt		Eye Irritation (Category 2A); Skin Irritation (Category 2); Single Target Organ Toxicity – Single Exposure (Category 3, Respiratory Irritation)	1-5%
Sulfite Compound		Eye Irritation (Category 2A); Skin Irritation (Category 2)	1-5%
Boron Compound		Reproductive Toxicity (Category 1B)	1-5%
Aqueous solution, with components that are not hazardous or are below 1.0% in concentration (or below 0.1% in concentration for carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens). All ingredients are listed per the requirements of regulations pertinent to Safety Data Sheet requirements under various regulations..			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 irritation persists. **Skin:** Flush area with warm, running water for 15 minutes. Seek medical attention of irritation persists. **Inhalation**: If vapors/mists/sprays of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. I**ngestion:** 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.

[1] The exact identity of the compounds and the percentage of composition have been withheld as a trade secret. All relevant physical and health hazards have been declared, in accordance with regulatory requirements.

SECTION 4: FIRST AID MEASURES (Continued)

4.2 MOST IMPORTANT ACUTE AND CHRONIC EXPOSURE SYMPTOMS

- **ACUTE:** Contact can cause mild to severe eye or skin irritation, depending on point of contact and duration of exposure. Eye contact can cause redness, pain, and tearing. Skin contact may result in redness and irritation. If the product is swallowed, irritation of the mouth, throat, and other tissues of the gastro-intestinal system may occur. Ingestion of large amounts can cause irritation, pain, vomiting, and diarrhea. Overexposure to mists or sprays of this product may cause irritation to the respiratory tract. Symptoms of such exposure can cause coughing, wheezing, and inflammation of the tissues of the nose, throat, and other respiratory system organs.
- **CHRONIC:** Contact with the Chelating Agent may cause allergic skin reactions. Prolonged or repeated exposures to this product may result in dermatitis, eczema, and other allergic skin reactions (depending on dose and route of exposure). Borates (e.g., Boric Acid, a component of this product) can cause severe, adverse effects if swallowed in large quantities. Swallowing this product can cause gastric disturbances, electrolyte imbalances, and potentially cyanosis (a bluish discoloration of the skin due to deficient oxygenation of the blood). Borate poisoning begins with nausea, vomiting, and diarrhea. There is a red rash followed by exfoliation of rash area and mucous membranes. Kidney injury and central nervous system effects have been observed in cases of severe adult and pediatric exposures. Sulfite Compound, a component of this product, may cause allergic skin and respiratory reactions in sensitive individuals. The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.
- **TARGET ORGANS: Skin, eyes, 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:** Disorders impacting target organs.

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. 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 (e.g., under 1 kg). For small releases, the minimum Personal Protective Equipment should be rubber gloves and rubber apron, splash goggles or safety glasses. Use caution during clean-up; avoid stepping into spilled solid or clean-up procedures that generate substantial amounts of splashes or sprays.
- **RESPONSE TO NON-INCIDENTAL RELEASES:** For large-scale releases of this product, minimum Personal Protective Equipment should be Level C: triple-gloves, chemical resistant apron, boots, and splash goggles and air purifying respirator equipped with a HEPA filter. Level B protection should be used when oxygen levels are below 19.5% or are unknown.
- **RESPONSE PROCEDURES FOR ANY RELEASE**: Wipe up spilled liquid with polypads or sponge. Rinse area with soap/water solution followed by a waterrinse.

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/sponge.

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 vapors/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 inuse.

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.

7.3 SPECIFIC END USES

- **RECOMMENDATIONS:** Place product away from children and animals.
- **INDUSTRIAL-SECTOR SPECIFIC SOLUTIONS:** PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT -- Follow practices indicated in Section 6 (Accidental Release Measures).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

- **AIRBORNE EXPOSURE LIMITS:**

COMPONENT	ACGIH TLV	OSHA PEL	NIOSH REL	OTHER
Chelating Agent	NE	NE	NE.	NE.
Gold Salt	NE	NE	NE.	NE.
Sulfite Compound	NE	NE	NE.	NE.
Boron Compound	2mg/m^3 TWA; 6 mg/m^3 STEL	NE	NE.	NE.

- **BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS:** There are no Biological Exposure Indices (BEIs) for components of this product.

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 sprays or mists. For situations in which significant amounts of sprays or mists could be generated, wear an air-purifying respirator with a high-efficiency particulate filter.
- **HAND PROTECTION:** Neoprene gloves or nitrile gloves should be used. Use triple gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. 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 could occur in occupational settings.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

(a) APPEARANCE: Blue/purple liquid.
(b) ODOR: Odorless.
(c) ODOR THRESHOLD: Not determined.
(d) pH: 5-8
(e) MELTING POINT/FREEZING POINT: Approx. 0°C (32 °F).
(f) INITIAL BOILING POINT AND BOILING RANGE: Approximately100°C (212°F).
(g) FLASH POINT: Not applicable.
(h) EVAPORATION RATE (water=1): Approx. 1
(i) FLAMMABILITY: Not flammable.
(j) UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: Not applicable.
(k) VAPOR PRESSURE (mmHg @ 20˚C): Not applicable.
(l) VAPOR DENSITY: Not applicable.
(m) RELATIVE DENSITY (water=1): 1.23
(n) SOLUBILITY: Soluble in water.
(o) PARTITION COEFFICIENT: N-OCTANOL/WATER: Not determined.
(p) AUTO-IGNITION TEMPERATURE: Not applicable.
(q) DECOMPOSITION TEMPERATURE: Not determined.
(r) VISCOSITY: Not applicable.
(s) EXPLOSIVE PROPERTIES: Not applicable.
(t) OXIDIZING PROPERTIES: Not an oxidizer.

9.2 OTHER INFORMATION

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

SECTION 10: STABILITY AND REACTIVITY

10.1 REACTIVITY

- Not reactive under typical conditions of use or handling; contact with water can generate some amount of heat.

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 can release heat upon contact with water.
- 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 oxidizers, strong acids and water-reactive substances.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

- Products of thermal decomposition of this product can include carbon monoxide, carbon dioxide and compounds of sodium, nitrogen, sulfur.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

- **ACUTE TOXICITY:**
  - **PRODUCT ESTIMATED TOXICITY:**
    - Acute Toxicity Estimate (Oral) > 5000 mg/kg
    - Acute Toxicity Estimate (Dermal) > 5000 mg/kg
  - **TOXICOLOGY DATA:** The following data are available for hazardous components in this product greater than 1% in concentration

BORON COMPOUND
Specific Locus Test-Drosophila melanogaster-Oral 714 ppm
Cytogenetic Analysis-Drosophila melanogaster-Oral 714 ppm
Oral-Rat TDLo: 37 g/kg (multi):Reproductive effects
Oral-Infant LDLo :1000 mg/kg
Oral-Man LDLo: 709 mg/kg
Oral-Rat LD50: 2660 mg/kg
Oral-Mouse LD_{50}: 2000 mg/kg
Intraperitoneal-Mouse LD_{50}: 2711 mg/kg
Intravenous-Mouse LD_{50}: 1320 mg/kg
Subcutaneous-Rabbit, adult LDLo:150 mg/kg
Oral-Guinea Pig, adult LD50:5330 mg/kg

GOLD SALT
No data available.

SULFITE COMPOUND
DNA Inhibition-Human: lymphocyte 10 mmol/L
Cytogenetic Analysis-Mouse: other cell types 25 mg/L
Intravenous-Rat LD_{50}: 115 mg/kg

SULFITE COMPOUND (continued)
Intraperitoneal-Mouse LD_{50}: 950 mg/kg
Intravenous-Mouse LD_{50}: 130 mg/kg
Subcutaneous-Dog, adult LDLo: 1300 mg/kg "
Subcutaneous-Cat, adult LDLo: 1300 mg/kg
Intravenous-Cat, adult LDLo: 200 mg/kg
Oral-Rabbit, adult LDLo: 2825 mg/kg
Subcutaneous-Rabbit, adult LDLo: 300 mg/kg
Intravenous-Rabbit, adult LD_{50}: 65 mg/kg

CHELATING AGENT
Cytogenetic Analysis-Mouse-Intraperitoneal 50 mmol/L
DNA Inhibition-Rabbit, adult: kidney 250 nmol/L
Oral-Rat TDLo:7632 mg/kg (female 7-14D post): Teratogenic effects
Oral-Rat TDLo: 7632 mg/kg (female 7-14D post): Reproductive effects
Intraperitoneal-Rat LD_{50}: 397 mg/kg
Intraperitoneal-Mouse LD_{50}: 250 mg/kg

.

  - **DEGREE OF IRRITATION:** Mild to moderate, depending on duration of exposure.
  - **SENSITIZATION:** The Chelating Agent, a component of this product, may cause allergic skin reactions. Sulfite Compound, a component of this product, may cause allergic skin and respiratory reactions in sensitive individuals. However, the effects are generally confined to sensitive individuals and the materials are not rated as sensitizers under GHS rules.

SECTION 11: TOXICOLOGICAL INFORMATION

- **REVIEW OF ACUTE SYMPTOMS AND EFFECTS:** See Section 2 (Hazards Information) and Section 4 (First-Aid Measures) for further details.
  - **EYES:** Can cause mild to moderate irritation.
  - **SKIN**: Can cause mild to moderate irritation.
  - **INHALATION:** Inhalations of vapors/mists/sprays of this product can cause mild to moderate 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.

- **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
Chelating Agent	NO	NO	NO	NO	NO
Gold Salt	NO	NO	NO	NO	NO
Sulfite Compound	NO	NO	NO	NO	NO
Boron Compound	NO	NO	NO	NO	NO

  - **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. The following components have been reported to have reproductive
    - **BORON COMPOUND:** 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:** Exposure to Chelating Agent, Boron Compound, and Sulfite Compound is reported to cause mutagenic effects in microorganisms and/or animal/human tissue studies.
  - **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 to contaminated terrestrial plants or animals.
- Based on available data, this product may be harmful or fatal to contaminated aquatic plants or animals.
- There are the following aquatic toxicity data available for components of this product that are over 1 percent in concentration.

- Chelating Agent
- EC_{50} Fish (catfish); 96 hours, 129ppm
- static test LC_{50} - *Lepomis macrochirus* (Bluegill sunfish) - 41 mg/l - 96 hours
- static test EC50 - Daphnia magna (Water flea) - 625 mg/l - 48 hours

- BORON COMPOUND
- LC_{50} Fish (*Carassium auratus*, goldfish); 72 hours/178 mg/L
- LC_{50} Fish (*Carassium auratus*, goldfish); 72 hours/630mg/L
- LC_{50} Fish (*Onchoryncus mykiss*, rainbow trout); 24 days/ 150 mg/L
- EC_{50} (*Daphnia magna*); 48 hours, 1085-1402mg/L
- IC_{50} (Algae); 96 hours, 158 mg/L

SECTION 12: ECOLOGICAL INFORMATION (Continued)

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. The following bioaccumulation data are available for components of this product.

  CHELATING AGENT: Lepomis macrochirus - 28 d - 80 µg/l; Bioconcentration factor (BCF): 1.8

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. Product spreads on the water surface.

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, state, or national standards.
- **PRECIOUS METAL RECLAMATION:** When applicable and practical, 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:** Not applicable.

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):** ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No.
    - **U.S. CERCLA REPORTABLE QUANTITY (RQ):** Not applicable.
    - **U.S. TSCA INVENTORY STATUS:** All components of this product are listed on the TSCA Inventory.
    - **US SARA 313:** Not applicable.
    - **CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) STATUS:** Nickel Chloride (as a Nickel Compound, present in less than 0.1 percent concentration in this solution) is found on the Proposition 65 Carcinogen List but below levels reportable under GHS rules. "WARNING: This product contains a chemical known to the State of California to cause cancer."
  - **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.

15.2 CHEMICAL SAFETY ASSESSMENT.

- No information available.

SECTION 16: OTHER INFORMATION

16.1 INDICATION OF CHANGE

- **CHANGE INDICATED:** Update of GHS classification information; label updates,
- **ORIGINAL DATE OF ISSUE:** March 1, 2006
- **DATES OF UPDATES:** January 12, 2015; January 13, 2016; July 1, 2019

16.2: KEY LITERATURE REFERENCES AND SOURCES FOR DATA

- SAFETY DATA SHEETS FOR COMPONENT PRODUCTS.
- TOXICOLOIGY DATA NETWORK: http://toxnet.nlm.nih.gov/
- EUROPEAN CHEMICAL HAZARDS AGENCY: http://echa.europa.eu/en/information-on-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 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 2/3: CAS Number: Chemical Abstract Service Number, which is used by the American chemical Society to uniquely identify a chemical. 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 (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. 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: 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 access 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 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.