

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, as well as European Union requirements under REACH (Registration, Evaluation, Authorization and Restriction of Chemical substances, per EC 1907/2006) and Directive 91/155/EC. 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: **EARTHGOLD ACID ACTIVATOR**
- PRODUCT NUMBERS: 2100938, 2100939
- CHEMICAL NAME/CLASS: Salt Compound Mixture

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: **PAUL H. GESSWEIN CO., INC.**
- ADDRESS: 201 HANCOCK AVE., BRIDGEPORT, CT 06605
- BUSINESS PHONE: 203-355-5400
- EMERGENCY PHONE: CHEMTEL - 800-255-3924

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
OSHA HAZARD COMMUNICATION (GHS)	Skin Corrosion/Irritation - Category 2, Serious Eye Damage, Eye Irritation - Category 1, Acute Toxicity - Category 4; Reproductive Toxicity - Category 2
REACH/CLP (GHS)	Skin Corrosion/Irritation - Category 2, Serious Eye Damage, Eye Irritation - Category 1, Acute Toxicity - Category 4; Reproductive Toxicity - Category 2
EU DIRECTIVES 67/548/EEC; 1999/45/EC	Repr. Cat. 2 [T+]; Irritant [Xi]

SECTION 2: HAZARDS IDENTIFICATION (Continued)

2.2 LABEL ELEMENTS:

- OSHA/CLP – BASED ON GLOBALLY HARMONIZED SYSTEM

Symbol: To the right.

Signal Word: Danger.

Hazard statement(s)

- H302 Harmful if swallowed.
- H315: Causes skin irritation.
- H319 Causes serious eye irritation.
- H361: Suspected of damaging 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.
- P264: Wash thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P302+P332+P313: IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.
- P305+P351+P338+P337+P313: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. If eye irritation persists: Get medical advice or attention.
- P312: Call a POISON CENTER if you feel unwell.
- P405: Store locked up.
- P501 Dispose of contents/ container to an approved waste disposal plant.

- EC DIRECTIVE SYMBOLS, RISK AND SAFETY PHRASES

Symbol: Toxic [T+]; Irritant [Xi]

Risk Phrases: May impair fertility. May cause harm to unborn child. [R60-61]. Irritating to skin and eyes. [R:36/38]



Safety Phrases S1/2: Keep locked-up and out of reach of children. (*This safety phrase may be omitted for preparations sold for industrial use only*). S1/2: Keep locked up and out of the reach of children. S13: Keep away from food, drink and animal feedingstuffs. S24/25: Avoid contact with skin and eyes. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S53: Avoid exposure - obtain special instructions before use.

2.3 OTHER PERTINENT DATA ON CHEMICAL AND PHYSICAL HAZARDS:

- EMERGENCY OVERVIEW:

PHYSICAL DESCRIPTION: This product is a white, odorless solid.

HEALTH HAZARDS: The product can mildly to severely irritate the skin and eyes, depending on point of contact and duration of exposure. It may be harmful if swallowed. Inorganic Acid Compound, a component of this product, may cause adverse effects on the reproductive system.

FIRE HAZARDS: This product is not flammable.

PHYSICAL HAZARDS: This product is stable under normal temperatures and pressures.

ENVIRONMENTAL HAZARDS: This product may be harmful to contaminated terrestrial and aquatic life-forms if significant volumes are released into the environment.

- 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.
Flammability	0	
Physical Hazard	0	
Protective Equipment	B/C	

SECTION 2: HAZARDS IDENTIFICATION (Continued)

CANADIAN REGULATORY STATUS

- This product is classified as hazardous under Canadian Controlled Products regulations (SOR-88-66). It is classified D2-A: Materials Causing Other Toxic Effects/Very Toxic Material: E: Corrosive.
- This SDS contains all the information required by the CPR.



SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1/3.2 SUBSTANCES/MIXTURES

COMPONENT	CAS NUMBER	EINECS #	EC Class/Risk Phrases	% (w/w)
Organic Acid	Proprietary ¹	Proprietary	Not Established	35-45%
Sodium Bisulfate	7681-38-1	231-665-7	Hazard Class: Xi [Irritant] Risk Phrases: Risk of serious damage to the eyes. [R41].	35-45%
Inorganic Acid Compound	Proprietary	Proprietary	Hazard Class: Repr. Cat. 2; R60-61 Risk Phrases: May impair fertility. May cause harm to unborn child. [R60-61].	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 immediately. **Skin:** Flush area with warm, running water for 15 minutes. **Inhalation:** If dusts of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. **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:** **CONTACT WITH SKIN or EYES:** Contact causes severe eye or skin irritation. Eye contact can cause redness, pain, and tearing and tissue damage. Skin contact can result in redness and irritation. The dusts of this product may also abrade eye tissue. Prolonged or repeated skin contact may result in severe irritation, skin damage, or dermatitis. Organic Acid and Sodium Bisulfate, components of this product, are reported to be potential skin sensitizers; prolonged or repeated contact with this product may cause allergic skin reactions. **SKIN ABSORPTION:** No component of this product is reported to be absorbed through intact skin. **INGESTION:** If the product is swallowed, irritation of the mouth, throat, and other tissues of the gastro-intestinal system will occur. Ingestion of large amounts can cause severe irritation, pain, vomiting, and diarrhea and may damage tissues of the digestive system. Borates (e.g., Inorganic Acid Compound, 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). Inorganic Acid Compound 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 exposure cases. **INHALATION:** Overexposure to dusts of this product causes 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. Prolonged or repeated overexposures to dusts can lead to severe irritation of the respiratory system, and adverse effects on the central nervous system, kidney and liver.

¹ The exact identify of the compounds and the percentage of composition has 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)

- **CHRONIC:** Prolonged or repeated contact to this product can result in severe irritation to exposed tissue and may lead to damage of exposed tissues. Organic Acid and Sodium Bisulfate, components of this product, are potential skin sensitizers; chronic overexposure to this product can result in allergic skin reactions (e.g., dermatitis, rashes). Chronic inhalation and ingestion exposures to these two compounds have also resulted in erosion of dental enamel. Chronic overexposure to Inorganic Acid Compound, another component of this product) can result in borism (red, dry skin followed by loss of hair, cracked lips and conjunctivitis). Chronic ingestion of Inorganic Acid Compound in large quantities can damage the liver and kidneys, as well as cause central nervous system effects. Animal testing showed risk of impaired fertility for Inorganic Acid Compound after exposures to very high doses.
- **TARGET ORGANS:** Acute - eyes, skin, respiratory system. Chronic – skin, respiratory system, reproductive system, liver, kidneys, central nervous 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:** Eye, skin disorders, and respiratory disorders.

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 dust.
- **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.

SECTION 6: ACCIDENTAL RELEASE MEASURES (Continued)

- **RESPONSE PROCEDURES FOR ANY RELEASE:** Wipe up solid residue with damp polypads or sponge. Rinse area with soap/water solution followed by a water rinse. Alternatively a broom/dustpan can be used for removing spilled solid; these items should be discarded or rinsed thoroughly with water before returning to service.

6.2 ENVIRONMENTAL PRECAUTIONS

- Avoid response actions that can cause a release of a significant amount of the substance (1 kg or more) into the environment.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

- **SPILL RESPONSE EQUIPMENT:** Broom/dustpan or 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 dusts. 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. When mixing this product with water, slowly add the product to the water, to prevent splattering. 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.

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

- U.S. NATIONAL EXPOSURE LIMITS:**

COMPONENT	ACGIH TLV	OSHA PEL (ppm)	NIOSH REL (ppm)	OTHER
Organic Acid	NE	NE	NE.	NE.
Sodium Bisulfate	NE	NE	NE.	NE.
Inorganic Acid Compound	2mg/m ³ TWA; 6 mg/m ³ STEL	NE	NE.	NE.

- INTERNATIONAL EXPOSURE LIMITS:**

COMPONENT	Federal Republic of Germany (DFG) Maximum Concentration Values in the Workplace (MAKs)	OTHER
Organic Acid	NE	NE
Sodium Bisulfate	NE	NE
Inorganic Acid Compound	10 mg/m ³ TWA (inhalable fraction); 1 mg/m ³ C	NE

- BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS:** There are no Biological Exposure Indices (BEIs) for components of this product.
- DERIVED NO EFFECT LEVEL (DNEL):** Not established.
- PREDICTED NO EFFECT CONCENTRATION (PNEC):** Not established.

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 dusts. For situations in which significant amounts of dusts could be generated, wear an air-purifying respirator with a high-efficiency particulate filter.
- HAND PROTECTION:** Nitrile or neoprene 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, appropriate Standards of Canada, or appropriate Standards of the European Economic Community.
- EYE PROTECTION:** Splash goggles or safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, or the European Standard EN166.
- 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: Unless otherwise specified, the following information is for the Organic Acid component of this product.

- | | |
|---|--|
| <ul style="list-style-type: none"> (a) APPEARANCE: White solid (Product). (b) ODOR: Odorless. (c) ODOR THRESHOLD: Not determined. (d) pH: 6.5 (1% w/w solution in water). (e) MELTING POINT/FREEZING POINT: 155-157 °C (311-314 °F) (f) INITIAL BOILING POINT AND BOILING RANGE: Not applicable. (g) FLASH POINT: Not applicable. | <ul style="list-style-type: none"> (h) EVAPORATION RATE (water=1): Not applicable. (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. |
|---|--|

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (Continued)

(m) **RELATIVE DENSITY (water=1):** 1.665

(n) **SOLUBILITY:** 52.9% 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 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 potassium, acid anhydrides, strong oxidizers, strong bases and strong reducing agents

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

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

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

- **ACUTE TOXICITY:** The following data are available for hazardous components in this product greater than 1% in concentration.

ORGANIC ACID

Skin-Rabbit, adult 500 mg/24H Moderate irritation effects

Eye effects-Rabbit, adult 750 mg/24H Severe irritation effects

Oral-Rat LD50:3 g/kg

Intraperitoneal-Rat LD50:883 mg/kg

Subcutaneous-Rat LD50:5500 mg/kg

Oral-Mouse LD50:5040 mg/kg

Intraperitoneal-Mouse LD50:903 mg/kg

Subcutaneous-Mouse LD50:2700 mg/kg

Intravenous-Mouse LD50:42 mg/kg

Oral-Rabbit, adult LDLo:7000 mg/kg

Intravenous-Rabbit, adult LD50:330 mg/kg

SODIUM BISULFATE

Mutation in Microorganisms-other microorganisms 1000 ppm

INORGANIC ACID COMPOUND

Skin-Human 15 mg/3D-I Mild irritation effects

Microorganisms-Escherichia coli 17,000 ppm/24H

Sperm Morphology-Rat-Oral 6 mg/kg

Oral-Rat TDLo:45 g/kg (90D male):Reproductive effects

INORGANIC ACID COMPOUND (Continued)

Oral-cld TDLo:500 mg/kg:Gastrointestinal tract effects

Oral-Man LDLo:429 mg/kg:Cardiovascular effects, Systemic effects

Oral-cld TDLo: 500 mg/kg:

Skin-Infant LDLo:1200 mg/kg

Skin-Child LDLo:4 g/kg/4D

Skin-Man LDLo:2430 mg/kg

Skin-cld LDLo:1500 mg/kg

Subcutaneous-Infant LDLo:1100 mg/kg

Unreported-Man TDLo:170 mg/kg:Gastrointestinal tract effects

Unreported-Man LDLo:147 mg/kg

Oral-Rat LD50:2660 mg/kg

Inhalation-Rat LCLo:28 mg/m³/4H

Inhalation-Rat LCLo:28 mg/m³/4H

Subcutaneous-Rat LD50:1400 mg/kg

Intravenous-Rat LD50:1330 mg/kg

Oral-Mouse LD50:3450 mg/kg

Intraperitoneal-Mouse LDLo:800 mg/kg

Subcutaneous-Mouse LD50:1740 mg/kg

Intravenous-Mouse LD50:1240 mg/kg

Subcutaneous-Dog, adult LDLo:1000 mg/kg

Parenteral-Dog, adult LDLo:1 g/kg

SECTION 11: TOXICOLOGICAL INFORMATION (Continued)

- **DEGREE OF IRRITATION:** Mild to severe, depending on duration of exposure.
- **SENSITIZATION:** Organic Acid and Sodium Bisulfate, components of this product, are potential skin sensitizers.
- **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 severe irritation. Prolonged contact can cause severe injury.
 - **SKIN:** Can cause mild to severe irritation. Prolonged contact may cause burns.
 - **INHALATION:** Dusts 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.
- **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
Organic Acid	NO	NO	NO	NO	NO
Sodium Bisulfate	NO	NO	NO	NO	NO
Inorganic Acid Compound (as borate 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 effects in test animals.
 - **INORGANIC ACID COMPOUND.** Developmental effects were observed in mice, rats and rabbits after oral administration of Inorganic Acid Compound. However, these effects were considered secondary to maternal toxicity (e.g., adverse liver and kidney effects).: Inorganic Acid Compound was found to induce testicular atrophy and effects on spermatogenesis in rats and mice in various studies. Effects occurred at dose-levels (27 mg/kg) without general toxicity. Inorganic Acid Compound has selectively damaged the testes, sperm production and fertility in rats and dogs after ingestion of relatively large doses.
 - **MUTAGENIC EFFECTS:** The components of this product may cause mutagenic effects, based on animal testing.
 - **INORGANIC ACID COMPOUND:** Mutagenic for bacteria and/or yeast.
 - **SODIUM BISULFATE:** Exposure to Sodium bisulfate is reported to cause mutagenic effects in microorganisms and/or animal 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 can be harmful to contaminated terrestrial plants or animals.
- Based on available data, this product can 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.

SECTION 12: ECOLOGICAL INFORMATION (Continued)

INORGANIC ACID COMPOUND

EC₅₀ (*Daphnia magna*); 48 hours, 133 mg/L
LC₅₀ Fish (*Lepomis machochris-Bluegill*); 96 hours/ >
1021 mg/L

SODIUM BISULFATE

EC₅₀ (*Daphnia magna*); 48 hours, 190 mg/L

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.

12.5 RESULTS OF PBT and vPvB ASSESSMENT

- No data are available.

12.6 OTHER ADVERSE EFFECTS

- ENDROCRINE DISRUPTOR INFORMATION: No component is reported to be an endocrine disruptor.

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.

13.2 DISPOSAL CONSIDERATIONS

- EPA RCRA WASTE CODE:** Not applicable **EUROPEAN WASTE CODE:** 11 01 99

SECTION 14: 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
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.
- EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):** This product is not considered to be dangerous goods. Use the above information for transport classification.

SECTION 14: TRANSPORT INFORMATION (Continued)

14.5: ENVIRONMENTAL HAZARDS

- None described, as related to transportation.

14.6: SPECIAL PRECAUTIONS FOR USERS

- Not applicable.

14.7: TRANSPORT IN BULK

- Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1: SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE SUBSTANCE OR MIXTURE.

• 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:** Not applicable.

• INTERNATIONAL REGULATIONS

- **CANADIAN DSL/NDL INVENTORY STATUS:** The listed components of this product are on the DSL/NDL Inventory.
- **CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS:** The components of this product are not on the CEPA Priorities Substances Lists.
- **GERMAN WATER HAZARD CLASSIFICATION:** 1 (no hazard to waters).

15.2: CHEMICAL SAFETY ASSESSMENT.

- No information available.

SECTION 16: OTHER INFORMATION

16.1: INDICATION OF CHANGE.

- **CHANGE INDICATED:** New phone number; volume annotations.
- **ORIGINAL DATE OF ISSUE:** March 25, 2008
- **DATES OF UPDATES:** June 6, 2013; April 8, 2014, July 26, 2014

16.2: KEY LITERATURE REFERENCES AND SOURCES FOR DATA

- SAFETY DATA SHEETS FOR COMPONENT PRODUCTS.
- Regulations (EC) No 1907/2006, 1272/2008 & 453/2010 of the European Parliament and of the Council.
- Federal OSHA Hazard Communication Standard: 29 CFR 1910.1200
- SAX – Dangerous Properties of Industrial Materials
- RTECS – Registry of Effects of Toxic Chemicals
- ESIS -European Chemical Substances Information System <http://esis.jrc.ec.europa.eu/>

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.

SECTION 16: OTHER INFORMATION (Continued)

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. 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.I.P.) and boiling point (BP) to classify flammable or combustible liquids. Class IA: F.I.P. below 73°F and BP below 100°F. Class IB: F.I.P. below 73°F and BP at or above 100°F. Class IC: :F.I.P. at or above 73°F and BP at or above 100°F. Class II: : F.I.P. at or above 100°F and below 140°F. Class IIIA: F.I.P. at or above 140°F and below 200°F. Class IIIB: F.I.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/m³: 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: T_{lm} – 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/NDL: Canadian Domestic Substances and Non-Domestic Substances Lists.