MATERIAL SAFETY DATA SHEET

EPS 1375 ELECTROPOLISH
Product ID: EP137501
Revised: 11-16-2010
Replaces: 08-29-2008

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	EPS 1375 ELECTROPOLISH
Synonyms:	H-95356A
CAS Number:	Mixture
Chemical Family:	Mineral Acid/Organic Acid/Glycol Blend
Formula:	Proprietary Information

Electro Polish Systems, Inc.
W175 N11117 Stonewood Dr.
Suite 101
Germantown, WI 53022
(414) 357-8445
(800) 959-0868

EMERGENCY RESPONSE NUMBERS:
CHEMTREC Emergency #: (800) 424-9300

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! CORROSIVE. Causes severe burns to eyes, skin, and respiratory tract. Harmful or fatal if swallowed. Harmful or fatal if inhaled. May be absorbed through the skin. May react with certain metals to form explosive/flammable Hydrogen gas. DANGER! May react violently with water. Possible birth defect and reproductive hazard.

Physical State:	Liquid.
Color:	Clear. Colorless to faint yellow.
Odor:	Sweet odor.

POTENTIAL HEALTH EFFECTS

Routes of Exposure: Eyes. Skin. Inhalation. Ingestion. Absorption.

Target Organs: Eyes. Skin. Respiratory System. Central Nervous System. Liver. Kidneys.

Eye Contact: CORROSIVE-Causes severe irritation and burns. May cause: permanent eye damage. blindness.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Contact may cause: permanent skin damage. Contact may not produce an immediate burning sensation, delaying awareness that contact has occurred.

Skin Absorption: May be absorbed through skin.

Inhalation: May be corrosive to the respiratory tract. Severe irritation and burns may result. Vapors or mists may irritate: nose. throat. respiratory tract. Symptoms may include: coughing. difficulty breathing. headache. nausea. Inhalation of high concentrations may cause: central nervous system effects. dizziness. vomiting. weakness. incoordination. blurred vision. drowsiness. confusion. disorientation. Extreme exposures may cause: respiratory problems and late pulmonary edema. respiratory depression. tremors. convulsions. loss of consciousness. coma. death.

Ingestion: CORROSIVE-Causes severe irritation and burns. May irritate or burn: mouth. throat. stomach. May cause: nausea. vomiting. abdominal discomfort. abdominal pain. burning sensation. prostration. Severe exposures may cause: shock. circulatory collapse. death. Large amounts may cause: central nervous system depression. cardiopulmonary effects. kidney damage. liver damage. irritability. mental sluggishness. dizziness. malaise. back pain. Changes in urine output and appearance, fluid retention, jaundice (yellowish skin color), kidney and liver damage, respiratory failure, and unconsciousness is evidence of severe poisoning. Death may occur in extreme cases. Kidney damage or fatality may occur from gross overexposure. Aspiration of vomit into lungs must be avoided as even small quantities may result in aspiration pneumonitis.

Medical Conditions Aggravated by Exposure to Product: Eye disorders. Skin disorders. Impaired respiratory function. Respiratory system disorders.

Other: Possible birth defect and reproductive hazard based on animal test data. At the time of this review, no studies were found on the possible reproductive/developmental activity of this material in humans.

Cancer Information:
This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

Potential Environmental Effects: See Section 12.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	% by Wt.
Phosphoric Acid	7664-38-2	< 75 %
Ethylene Glycol	107-21-1	< 35 %
Hydroxyacetic Acid	79-14-1	< 35 %

4. FIRST-AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Remove contact lens if easy to do. Do not permit victim to rub eyes.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. Do not apply oils or ointments unless ordered by the physician. Wash with soap and water. Discard contaminated leather articles such as shoes and belt. Discard footwear which cannot be decontaminated.

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Note to Physicians:
The principal toxic effects of ethylene glycol, when swallowed, are kidney damage and metabolic acidosis. Ethanol is antidotal, and early administration may block the formation of toxic metabolites of ethylene glycol in the liver. Ethanol should be given intravenously, as a 5% solution in sodium bicarbonate, at a rate of about 10 ml/hr. A desired therapeutic level of ethanol in blood is 100 mg/dl. Hemodialysis may be required. Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. The mechanism has not been elucidated, but it appears to be noncardiogenic in origin in ventilation and positive end expiratory pressure may be applied. Correction of acidosis is essential.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Water spray. Dry chemical. Carbon dioxide. Alcohol foam. DO NOT USE: Direct water stream.

Fire Fighting Methods: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers. Product generates heat upon addition of water, with possible spattering. Run-off from fire control may cause pollution. Do not use direct water stream. May spread fire. Move containers from fire area if possible without hazard. Neutralize run-off with Lime, Soda Ash, etc., to prevent corrosion of metals and formation of Hydrogen gas.

Fire and Explosion Hazards: This product may react with certain metals to produce flammable Hydrogen Gas. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture. Container areas exposed to direct flame should be cooled with large quantities of water as needed to prevent weakening of container structure.

Hazardous Combustion Products: Phosphorous oxides. Phosphine. Toxic vapors. Carbon dioxide. Carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

Spill Clean-Up Procedures: CORROSIVE MATERIAL. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit. Contain spill, place into drums for proper disposal. Soak up residue with inert absorbent material. Place in non-leaking containers for immediate disposal. Flush remaining area with water and neutralize with Soda Ash, Lime or Limestone and dispose of properly. Adequate ventilation is required if soda ash is used, because of the consequent release of carbon dioxide gas. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. CORROSIVE MATERIAL.

Storage: CORROSIVE MATERIAL. Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Do not freeze. May react with certain metals to produce flammable hydrogen gas. Keep away from all sources of ignition. Protect containers against physical damage. Do not reuse container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines:

Component	Limits
Phosphoric Acid	1 mg/m3 TWA

ACGIH Exposure Guidelines:

Component	Limits
Phosphoric Acid	1 mg/m3 TWA; 3 mg/m3 STEL
Ethylene Glycol	100 mg/m3 Ceiling (aerosol only)

Engineering Controls: General room ventilation and local exhaust are required. Maintain adequate ventilation. Do not use in closed or confined spaces. Avoid creating dust or mist. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Acid-proof. Gauntlet-type.

Respiratory Protection: Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. If exposure limits are exceeded, wear: NIOSH-Approved respirator. Acid gas cartridge. NIOSH-Approved Supplied Air Respirator (SAR). NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Rubber boots. Protective clothing. Impervious clothing. Full-rubber acid suit.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.
Color: Clear. Colorless to faint yellow.
Odor: Sweet odor.
Boiling Point (deg. F): N.D.
Freezing Point (deg. F): N.D.

Melting Point (deg. F): N.D.
Vapor Pressure (mm Hg): N.D.
Vapor Density (air=1): N.D.
Solubility in Water: Soluble
pH: 1.0
Specific Gravity: 1.482 @25C
% Volatile (wt%): N.D.
Evaporation Rate (nBuAc = 1): N.D.
VOC (wt%): ~15%
VOC (lbs/gal): ~1.85
Viscosity: N.D.
Flash Point: N.A.
Flash Point Method: N.A.
Lower Explosion Limit: N.D.
Upper Explosion Limit: N.D.
Autoignition Temperature: No Data
Fire Point: N.D.

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product. Avoid high temperatures.

Incompatible Materials: Metals. Strong reducing agents. Sulfides. Sulfites. Bases. Fluorine. Sulfur trioxide. Phosphorous pentoxide. Sodium tetrahydroborate. Aldehydes. Amines. Amides. Alcohols. Azo-compounds. Carbamates. Esters. Caustics. Phenols. Cresols. Ketones. Organophosphates. Epoxides. Explosives. Combustible materials. Unsaturated halides. Organic peroxides. Mercaptans. Cyanides. Nitromethane. Glycols. Fluorides. Halogenated organics. Polymerization catalysts. Active metals. Oxidizing agents. Cyanide salts. Sulfide salts. Contact of aqueous ethylene glycol solution with DC-energized silvered copper wires causes ignition of the latter. A mixture of phosphorus (V) sulfide, ethylene glycol, and hexane in a mantle-heated flask spontaneously overheated and exploded at an internal temperature of about 180 C. Mixing of equal weights of ethylene glycol and potassium dichromate at 100 C caused heat to evolve.

Hazardous Decomposition Products: Phosphorous oxides. Phosphine. Carbon dioxide. Carbon monoxide. Acrid smoke. Irritating vapors. Hydrogen gas. Nitrogen oxides. Hydrogen cyanide gas. Hydrogen sulfide gas.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. May react with certain metals to produce flammable hydrogen gas. Mixing with strong bases can cause high heat of reaction and generate steam. Reacts with chlorides + stainless steel to form explosive hydrogen gas. Phosphoric acid forms flammable gases with sulfides, mercaptans, cyanides and aldehydes. Phosphoric acid forms toxic fumes with cyanides, sulfides, fluorides, organic peroxides, and halogenated organics. Phosphoric acid mixtures with nitromethane are explosive. Reacts with active metals (like sodium), oxidizing agents (such as strong nitric acid), cyanide salts or sulfide salts to produce hydrogen, nitrogen oxides, hydrogen cyanide or hydrogen sulfide gases, respectively.

11. TOXICOLOGICAL INFORMATION

Component	Oral LD50	Dermal LD50	Inhalation LC50
Phosphoric Acid	Rat: 1530 mg/kg	Rabbit: 2730 mg/kg	1H Rat: > 850 mg/m3
Ethylene Glycol	Rat: 4000 mg/kg	Rabbit: 9530 µL/kg	No Data
Hydroxyacetic Acid	Rat: 1950 mg/kg	No Data	4H Rat: 7.7 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available.

Chemical Fate Information: Phosphates are plant nutrients and may contribute to the growth of phytoplankton in water.

13. DISPOSAL CONSIDERATIONS

Hazardous Waste Number: D002
Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. Since emptied containers retain product residue, follow label warnings even after container is emptied. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

14. TRANSPORTATION INFORMATION

DOT (Department of Transportation):

Identification Number:	UN1760
Proper Shipping Name:	Corrosive Liquid, N.O.S. (Contains Hydroxyacetic Acid, Phosphoric Acid)
Hazard Class:	8
Packing Group:	III
Label Required:	CORROSIVE
Reportable Quantity (RQ):	5000# (Phosphoric Acid); 5000# (Ethylene Glycol)

15. REGULATORY INFORMATION

TSCA Inventory Status: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA Title III Section 311/312 Category Hazards:

Immediate (Acute)	Delayed (Chronic)	Fire Hazard	Pressure Release	Reactive
Yes	Yes	No	No	No

Regulated Components: Component	CAS Number	CERCLA RQ	SARA EHS	SARA 313	U.S. HAP	WI HAP	Prop 65
Phosphoric Acid	7664-38-2	Yes	No	No	No	Yes	No
Ethylene Glycol	107-21-1	Yes	No	Yes	Yes	Yes	No

***Prop 65 - May Contain the Following Trace Components**
Arsenic
Lead
Cadmium

16. ADDITIONAL INFORMATION

Hazard Rating System
Health: 3*
Flammability: 0
Reactivity: 0
* = Chronic Health Hazard

NFPA Rating System
Health: 3
Flammability: 0
Reactivity: 0
Special Hazard: None

MSDS Abbreviations
N.A. = Not Applicable
N.D. = Not Determined
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound
C = Ceiling Limit
N.E./Not Estab. = Not Established

MSDS Prepared by: NAO

Reason for Revision: New format. Changes made throughout the MSDS.

The data in this Material Safety Data Sheet relates to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which ELECTRO POLISH SYSTEMS, INC. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.