

EPS 2000 ELECTROPOLISH

MSDS ID: EP2000

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : EPS 2000 ELECTROPOLISH
MSDS ID : EP2000
CHEMICAL NAME SYNONYMS : N.A.
CAS NUMBER : MIXTURE
CHEMICAL FAMILY : Mineral Acid
FORMULA : Proprietary Information

DISTRIBUTED BY:
Electro Polish Systems
5678 N. Brown Deer Road
Brown Deer, WI 53223
(414) 357-8445
(800) 959-0868

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

MANUFACTURED BY: HYDRITE CHEMICAL CO.

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS NUMBER	OSHA HAZARD	% BY WT.
Phosphoric Acid	7664-38-2	YES	40 - 80 %
Sulfuric Acid	7664-93-9	YES	5 - 35 %

3. HAZARDS IDENTIFICATION

PHYSICAL STATE: Liquid.
COLOR : Clear. Colorless to faint yellow or pink.
ODOR : No odor.

EMERGENCY OVERVIEW: DANGER! CORROSIVE. Causes severe burns to eyes, skin, and respiratory tract. Harmful if inhaled. Harmful or fatal if swallowed. Aspiration may cause lung damage. Cancer hazard. Water reactive. Not flammable, but reacts with most metals to form explosive/flammable hydrogen gas. Corrosive to mild steel.

POTENTIAL HEALTH EFFECTS

ROUTES OF EXPOSURE:
Eyes. Ingestion. Inhalation. Skin.

TARGET ORGANS:
Eyes. Skin. Respiratory System. Teeth.

EYE CONTACT:
CORROSIVE-Causes severe irritation and burns.
Small amounts may cause: tissue destruction. permanent eye damage.
blindness. May cause: blurred vision. redness. pain.

SKIN CONTACT:
CORROSIVE-Causes severe irritation and burns.
Contact may not produce an immediate burning sensation, delaying awareness

3. HAZARDS IDENTIFICATION (Cont.)

that contact has occurred. Death may result from burns which extend over large portions of the body. Concentrated solutions may cause: severe burns. severe necrosis. Prolonged or repeated exposure with dilute solutions may cause: irritation. redness. pain. drying. cracking. dermatitis (inflammation of the skin). Repeated exposure to mist may cause dermatitis.

SKIN ABSORPTION:

No absorption hazard expected under normal use.

INHALATION:

CORROSIVE-Causes severe irritation and burns. Vapors, dusts, or mists may damage: mucous membranes. respiratory tract. Vapors or mists may cause: bronchospasms. pulmonary edema. death. Effects may be delayed. Chronic exposure may cause: chronic bronchitis. chronic inflammation of the nose and throat. dental erosions. discoloration of teeth.

INGESTION:

CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. esophagus. throat. stomach. gastrointestinal tract. Effects may be delayed. May cause: nausea. vomiting. abdominal discomfort. diarrhea. seizures. death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE TO PRODUCT:

Skin disorders. Respiratory system disorders. Eye disorders.

OTHER:

Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and scanty urine may follow skin contact or ingestion. Circulatory shock is often the immediate cause of death.

CANCER INFORMATION:

This product does not contain greater than 0.1% of the known or potential carcinogens listed in NTP, IARC, or OSHA. The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen (IARC Category 1). This classification is for inorganic acid mists only and does not apply to sulfuric acid or sulfuric acid solutions.

POTENTIAL ENVIRONMENTAL EFFECTS:

See Section 12.

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.

4. FIRST AID MEASURES (Cont.)

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. Discard contaminated leather articles such as shoes and belt.

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 use of gastric lavage is controversial. The advantage of removal of acid must be weighted against the risk of perforation or bleeding. If a large amount of acid (> 1 ml/kg body weight) has been recently ingested, cautious gastric lavage is generally advised if the patient is alert and there is little risk of convulsions. Consultation with a gastroenterologist and/or surgeon is advised. Serious complications such as perforation or stricture of the esophagus may occur requiring care by specialists. Laryngeal edema may develop requiring intubation or tracheostomy. Give artificial resuscitation and appropriate chemotherapy if respiration is depressed. Following exposure the patient should be kept under medical review for at least 48 hours as delayed pneumonitis may occur. DO NOT attempt to neutralize the acid with weak bases since the reaction will produce heat that may extend the corrosive injury.

5. FIRE FIGHTING MEASURES

FLASH POINT: N.A.

FLAMMABILITY LIMITS: LEL: N.A.

UEL: N.A.

AUTOIGNITION TEMPERATURE: No Data

EXTINGUISHING MEDIA:

For fires in area use appropriate media. For example: Water spray. Dry chemical. Carbon dioxide. Alcohol foam.

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 get water inside

5. FIRE FIGHTING MEASURES (Cont.)

containers. Neutralize run-off with Lime, Soda Ash, etc., to prevent corrosion of metals and formation of Hydrogen gas.

FIRE AND EXPLOSION HAZARDS:

Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable hydrogen gas.

Will react with organic materials with evolution of heat and sulfur dioxide.

HAZARDOUS COMBUSTION PRODUCTS:

Phosphorous oxides. Sulfur oxides.

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. Flush remaining area with water and neutralize with Soda Ash or Lime and dispose of properly.

Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

7. HANDLING AND STORAGE

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. Highly corrosive to most metals with evolution of hydrogen gas. Explosive/flammable concentrations of hydrogen gas may accumulate inside metal containers. Elevated temperatures will increase the corrosion rate of most metals. Store in a vented container.

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. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCE OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools.

EPS 2000 ELECTROPOLISH

MSDS ID: EP2000

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Local exhaust ventilation, process enclosures, or other engineering controls are imperative when handling or using this product to avoid overexposure. 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.

RESPIRATORY PROTECTION:

Respiratory protection must be worn when handling this product. If exposure limits are exceeded, wear: NIOSH-Approved air-purifying respirator with: Acid gas cartridge and; Dust/mist filter. 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.

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. Rubber (latex). Neoprene.

OTHER PROTECTIVE EQUIPMENT:

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

GENERAL HYGIENE CONSIDERATIONS:

Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

EXPOSURE GUIDELINES:

COMPONENT	-----OSHA-----		-----ACGIH-----	
	PEL	STEL/C	TWA	STEL/C
Phosphoric Acid	1 mg/m3	Not Estab.	1 mg/m3	3 mg/m3
	1 mg/m3+	3 mg/m3+		
Sulfuric Acid	1 mg/m3	Not Estab.	1 mg/m3	3 mg/m3

NOTE: + Vacated 1989 OSHA PEL(s).

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (DEG. F) : N.D.	SPECIFIC GRAVITY: 1.643 @ 25C
FREEZING POINT (DEG. F): N.D.	% VOLATILE (WT%): N.D.
MELTING POINT (DEG. F) : N.D.	EVAPORATION RATE: N.D.
VAPOR PRESSURE (MM HG) : N.D.	(nBuAc=1)
VAPOR DENSITY (AIR=1) : N.D.	VOC (WT%) : 0

EPS 2000 ELECTROPOLISH

MSDS ID: EP2000

9. PHYSICAL AND CHEMICAL PROPERTIES (Cont.)

SOLUBILITY IN WATER : Complete VOC (LBS/GAL) : 0
pH : < 1

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 contact with heat, sparks, electric arcs, other hot surfaces, and open flames.

INCOMPATIBILITY:

Metals. Strong oxidizing agents. Strong reducing agents. Sulfides. Sulfites. Strong bases. Fluorine. Sulfur trioxide. Phosphorous pentoxide. Water. Alkalies. Carbonates. Cyanides. Carbides. Chlorates. Fulminates. Nitrates. Powdered metals. Organic materials. Combustible materials. and many other reactive substances.

HAZARDOUS DECOMPOSITION PRODUCTS:

Toxic vapors. Phosphorous oxides. Sulfur oxides. Sulfuric acid vapors. Hydrogen gas. May react with certain metals to produce flammable hydrogen gas. Mixing with strong bases can cause high heat of reaction and generate steam. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides, carbides, etc.

HAZARDOUS POLYMERIZATION:

Will not occur under normal conditions.

11. TOXICOLOGICAL INFORMATION

LD50 ORAL : No Data

LD50 SKIN : No Data

LC50 INHALATION: No Data

The International Agency for Research on Cancer (IARC) has concluded that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to man, causing cancer of the larynx (the voice box) and, to a lesser extent, the lung. Although no direct link has been established between exposure to sulfuric acid itself, and cancer in man, exposure to any mist or aerosol during the use of this product should be avoided and, in any case, keep exposures below the occupational exposure limit for sulfuric acid.

EPS 2000 ELECTROPOLISH

MSDS ID: EP2000

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

Harmful to aquatic life in very low concentrations. May be dangerous if it enters water intake.

CHEMICAL FATE INFORMATION:

Inorganic compounds in contact with soil, sub-surface or surface waters may be taken up by plants and utilized as essential nutrients. Phosphates may also form precipitates, usually with calcium or magnesium. The resultant compounds are insoluble in water and become a part of the soil or sediment. The term biodegradability, as such, is not applicable to inorganic compounds. It was reported in literature that while acidity of this material may be reduced readily in natural waters, the phosphate may persist indefinitely.

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.

If approved, neutralize material and flush to sewer. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

14. TRANSPORT INFORMATION (Not meant to be all inclusive)

DOT (Department of Transportation):

Proper Shipping Name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
(CONTAINS PHOSPHORIC ACID, SULFURIC ACID)

Hazard Class : 8

Identification Number : UN3264

Packing Group : II

Label Required : CORROSIVE

Reportable Quantity (RQ): 5000# (Phosphoric Acid); 1000# (Sulfuric Acid)

15. REGULATORY INFORMATION

FEDERAL REGULATIONS:

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:

IMMEDIATE (ACUTE) HEALTH HAZARD : YES

DELAYED (CHRONIC) HEALTH HAZARD : YES

FIRE HAZARD : NO

SUDDEN RELEASE OF PRESSURE HAZARD: NO

REACTIVE HAZARD : NO

EPS 2000 ELECTROPOLISH

MSDS ID: EP2000

15. REGULATORY INFORMATION (Cont.)

SARA SECTION 302/304/313/HAP:

Table with 6 columns: COMPONENT, RQ (LBS) (*1), RQ (LBS) (*2), TPQ (LBS) (*3), SEC 313 (*4), HAP (*5). Rows include Phosphoric Acid and Sulfuric Acid.

NOTE: * Sulfuric acid appears on the Section 313 List. However, the listing only applies to the aerosol forms of sulfuric acid.

FOOTNOTES

- *1 = CERCLA Reportable Quantity
*2 = SARA Reportable Quantity
*3 = SARA EHS Threshold Planning Quantity
*4 = SARA 313 Toxic Chemical/Category
*5 = U.S. EPA Hazardous Air Pollutant

NOTE: ECCN# EAR99

STATE REGULATIONS:

CALIFORNIA--The following components are listed under Prop 65:
This product may contain a detectable level of chemical(s) subject to California's Prop. 65.

WISCONSIN--The following components are listed as a Wisconsin HAP:
Phosphoric acid. Sulfuric Acid

16. OTHER INFORMATION

HMIS RATING SYSTEM

Health : 3*
Flammability: 0
Reactivity : 2
* = Chronic Health Hazard

NFPA RATING SYSTEM

Health : 3
Flammability : 0
Reactivity : 2
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: KJV/JAK

REASON FOR REVISION: Changes made in Sections 2 and 15.

** ** * The data in this Material Safety Data Sheet relates only 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 a warranty or representation for which ELECTRO POLISH SYSTEMS assumes legal responsibility. This information is provided solely for your

MATERIAL SAFETY DATA SHEET

Page 9 of 9
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EPS 2000 ELECTROPOLISH

MSDS ID: EP2000

16. OTHER INFORMATION (Cont.)

consideration, investigation, and verification.

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