



## Esma-Brite E272

### Electropolishing Electrolyte for Cobalt Chromium

**DESCRIPTION:** Esma-Brite E272 is a very mild electrolyte for electropolishing of Cobalt-Chrome. This newly developed solution is considered to be the very best on the market and is noted for the outstanding shine and penetration that it achieves. Esma-Brite is used in many markets including dental labs and medical device manufacturing. This product is currently used to polish stents, implants, dental castings and other implantable devices. Esma-Brite will yield unprecedented luster and superior shine and finish. Because there is no muriatic acid in the formula there are no corrosive fumes to manage. The low % acidity makes Esma-Brite very mild and relatively safe to handle.

#### PROPERTIES:

Appearance	Clear to light straw
Specific Gravity	1.21 - 1.24
% Acidity	13%
Odor	Mild
Specific Vapor Density	2.20 Air=1
Evaporation Rate	Slower than Ether
Boiling Point	199°C
Freezing Point	below 0°C

#### PRECAUTIONS:

Acidic solution, may cause eye and skin irritation. Avoid contact with skin, eyes, clothing. Wear goggles or safety glasses. Wash thoroughly after handling. Use in conjunction with proper ventilation. If spilled, will damage clothing, carpet, benches, tools. Keep out of reach of children. For additional information, refer to MSDS.



ESMA Incorporated  
450 Taft Drive  
South Holland, IL 60473  
800-276-2466

## Esma-Brite E272

Emergency telephone: Chemtrec 800-424-9300

Product information: 800-276-2466

Prepared by: Tim Beezhold

Date: 8/29/2007

### SECTION 1 - PRODUCT IDENTIFICATION

**Chemical family:** Electropolishing solution

**C A S number:** Not applicable

**Formula:** Trade secret

### SECTION 2 - HAZARDOUS INGREDIENTS

**Common name:** Ethylene glycol < 85 % by weight

**OSHA PEL:** 50 ppm 8-hour TWA (*vacated 1989 Final Rule limit*)

**ACGIH TLV:** Ceiling: 100 mg/m<sup>3</sup> 8-hour TWA (40 ppm)

**C A S #:** 107-21-1

**Common name:** 2-Hydroxyethyl hydrogen sulfate < 25 % by weight

**OSHA PEL:** Not established

**ACGIH TLV:** Not established

**C A S #:** None

### SECTION 3 - HAZARD IDENTIFICATION

**Acute toxicity: Data below are based on ethylene glycol**

**Oral:** LD<sub>50</sub>, rat: 4,700 mg/kg;  
LD<sub>Lo</sub>, human: 398 mg/kg caused headaches and nausea, higher levels resulted in more serious effects

**Dermal:** LD<sub>50</sub>, rabbit 9.53 ml/kg

**Inhalation:** LC<sub>50</sub>, rat: 10,876 mg/m<sup>3</sup>; TC<sub>Lo</sub>, human: 10,000 mg/m<sup>3</sup>

**Eye irritant:** Rabbit, standard Draize test: 100 mg/1 hour – mild irritation

**Skin Irritant:** Rabbit, open Draize test: 555 mg – mild irritation

**Primary route of entry:** Dermal, inhalation, eye contact, ingestion

**Signs and symptoms of exposure:**

**Ingestion:** Nausea, gastric distress

**Inhalation:** Dizziness, loss of coordination, fainting; CNS depression

**Skin contact:** Mild to severe burning, redness, irritation

**Eye contact:** Severe burning, redness, irritation

**SECTION 3 - HAZARD IDENTIFICATION (cont.)**

**Tumorigenicity:** NTP - not listed IARC – not listed OSHA - not listed  
**Mutagenicity:** Suspected  
**Reproductive hazard:** Rat, oral – 8,580 mg/kg resulted in fetotoxicity

**SECTION 4 - FIRST AID MEASURES**

**Notice:** Eye wash and shower must be accessible wherever hazardous chemicals are used or stored. This product may be used in tandem with other hazardous chemicals. First aid measures must consider effects of all chemicals.

**Ingestion:** DO NOT induce vomiting. Contact a poison control center. Never give anything by mouth to an unconscious person. Gastric lavage may be required. Call a physician immediately.

**Inhalation:** Remove affected person to fresh air. Support breathing as needed. If breathing has stopped, initiate CPR. Get medical attention.

**Skin contact:** Rinse with water for 15 minutes. Remove contaminated clothing and wash affected areas. If irritation or redness persists, seek medical attention.

**Eye contact:** DO NOT ALLOW VICTIM TO RUB EYES. Rinse affected areas with eyelid opened for at least 15 minutes. Consult a physician immediately. Removal of contact lenses should be done only by qualified medical personnel.

**SECTION 5 - FIREFIGHTING MEASURES**

**Flash point:** 232<sup>0</sup> F / 111<sup>0</sup> C (Closed cup)

**Autoignition temperature:** 748<sup>0</sup> F / 398<sup>0</sup> C

**Flammability limits:** LEL - 3.2 % UEL – 15.3 %

**Extinguishing media:** Water spray or fog for large fires;  
CO<sub>2</sub> or dry chemical for smaller fires

**Special firefighting procedures:** Wear self-contained breathing apparatus. Containers may explode in heat of fire. If safe, remove containers from fire area; otherwise, try to cool containers with water spray or fog.

**Fire/explosion hazards:** This product contains an OSHA Class III B flammable solvent. It is also volatile; high temperatures give off flammable vapors. Explosion hazard when vapors are exposed to fire, flame, spark, or other ignition sources.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

**Spill/leak clean-up procedures:** Dike area of spill for containment and prevent access to drains. Remove all uninvolved personnel. Provide sufficient ventilation to prevent build-up of fumes to explosive concentration. DO NOT use any metal or spark-producing equipment during clean-up. Absorb spill with vermiculite or other absorbent material. Collect residues and place into a flammables waste container. Dispose of wastes in accordance with all applicable federal, state, and local regulations.

**EPA hazardous substance reportable quantity:** Not applicable

**SECTION 7 - HANDLING AND STORAGE**

**Proper storage:** Store in a properly identified flammables storage area that is cool, dry, and properly ventilated. Store away from heat, flame, sparks, and other ignition sources. Store separately from oxidizing and other incompatible materials.

**Precautionary methods:** Avoid contact with skin or inhalation of fumes. Wash thoroughly after handling. Wear NIOSH-approved mask and suitable protective equipment during handling and usage.

**Disposal:** Dispose of with flammable liquid waste in accordance with all federal, state, and local regulations.

**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Special precautions:** Irritating and dizzying fumes may be released when product is used. This product may be used in tandem with other hazardous chemicals. Exposure controls must consider all of the potential hazards of the operation.

**Ventilation:** Use only with ventilation that maintains airborne concentrations below the OSHA PEL. Ventilation must also be sufficient for other chemicals present in the plant.

**Respiratory protection:** Wear NIOSH-approved respirator when handling or working with. Fumes from this product contain hazardous chemicals and can be highly irritating.

**Skin protection:** Chemical-resistant rubber gloves and suitable protective clothing should be worn. Butyl or natural rubber or neoprene are recommended.

**Eye protection:** Face mask or safety goggles should be worn when handling and when working with this product or its prepared solutions.

**Personal hygiene:** Wash thoroughly after any handling or usage. Because mists from working area may be on skin and clothes, removal of clothing and showering after extended use are recommended.

**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION continued**

**Protective measures during repair and maintenance of equipment:** Esma-Brite E272 and the products it is used with are corrosive and flammable and may cause various physical effects. This and related products should be removed to a suitable storage area and working area thoroughly cleaned and ventilated before any repair or maintenance.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Clear liquid	<b>Odor:</b>	Slight alcoholic odor
<b>Boiling point:</b>	388 <sup>0</sup> F/198 <sup>0</sup> C	<b>Vapor pressure:</b>	0.06 mm Hg at 68 <sup>0</sup> F/20 <sup>0</sup> C
<b>Vapor density (Air = 1):</b>	2.14	<b>Solubility in water:</b>	Completely miscible
<b>Specific gravity (Water = 1):</b>	1.24	<b>pH of solution:</b>	Approximately 1.00, neat

**SECTION 10 - STABILITY AND REACTIVITY**

**Stability:** Stable

**Hazardous polymerization:** Will not occur

**Conditions to avoid:** Elevated temperatures; enclosed areas; flame and spark sources

**Incompatible materials:** Oxidizers, strong acids and alkalis, halogenated solvents

**Hazardous decomposition products:** Various carbon and sulfur oxides

**SECTION 11 - TRANSPORTATION INFORMATION**

**D O T Shipping name:** Corrosive liquid, acidic, organic n.o.s. (contains ethylene glycol and sulfuric acid)      ERG # 153

**Hazard Class:** 8

**I D Number:** U N 3265

**Packing Group:** III

**Label(s) required:** Corrosive

**SECTION 12 - REGULATORY INFORMATION**

**EPA Regulations:**

RCRA Hazardous Waste (40 CFR 261.24): Not listed

CERCLA Hazardous substance (40 CFR 302.4) listed per CAA, Section 112  
 CERCLA Reportable Quantity (RQ) for ethylene glycol is 5,000 pounds.

SARA Toxic Chemical (40 CFR 372.65): Listed for ethylene glycol

SARA Extremely Hazardous Substance (40 CFR 355): Not listed

**OSHA Regulations:**

Ethylene glycol is listed as an air contaminant (29 CFR 1910.1000, Table Z-1-A) (*vacated 1989 Final Rule limit*)