



Nickel Electropolish E581

Electropolishing Electrolyte for Chromium-Nickel

DESCRIPTION: Nickel Electropolish E581 is a very mild electrolyte for electropolishing chromium-nickel. Provides unprecedented "luster" on chromium-nickel parts. Is safe to use and emits no corrosive fumes (no muriatic acid in the formula).

PROPERTIES:

| | |
|------------------------|-----------------------|
| Appearance | Clear, slightly amber |
| Odor Threshold | N/A |
| Vapor Pressure | <0.10 mm Hg |
| Specific Vapor Density | 2.20 Air=1 |
| Specific Gravity | 1.3 – 1.5 |
| Evaporation Rate | Slower than Ether |
| Boiling Point | 199°C |
| Freezing Point | below 0°C |
| PH | Acidic |

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

MATERIAL SAFETY DATA SHEET

Section 1- Product Identification and Use

Product Identifier—Nickel Electropolish

Product Identification Number—E581

Product Use—Electropolishing Solution

Manufacturer's Name—Esma, Inc.

450 W. Taft Drive

South Holland, IL 60473

1-800-246-2466

Emergency Telephone Numbers— US/North America: Chemtrec 800-262-8200 24 hrs everyday

International: Chemtrec 703-527-3887

Section 2 - Hazardous Components

| Hazardous Ingredients | % | CAS Number | LD ₅₀ | LC ₅₀ |
|-----------------------|----|------------|----------------------|----------------------------|
| Ethylene Glycol | 50 | 107-21-1 | 5.89 g/kg (Oral Rat) | 10.9 g/kg (Inhalation Rat) |
| Glycol Sulfa Ester | 50 | | N/A | N/A |

Section 3 - Physical Data

Physical State—Liquid

Odor Threshold—N/A

Specific Vapor Density—2.20 Air=1

Evaporation Rate—Slower than Ether

Freezing Point—below 0 degrees C

Coeff. Water/Oil Dist.—N/A

Odor and Appearance—Clear, slightly amber

Vapor Pressure—<0.10 mm Hg

Specific Gravity—1.38

Boiling Point—199 degrees C

PH—Acidic

Section 4 - Fire and Explosion Data

Flammability—No

Flash Point—111.1 degrees C (TCC)

Explosive Limit (% by Volume)—Lower-3.2%, Upper-15.3%

Auto Ignition Temp.—N/A

Hazardous Combustion Products (may form)

—Carbon Dioxide, Carbon Monoxide, Acid Vapors

Explosion Data—Sensitivity to Impact—N/A

Sensitivity to Static Discharge—N/A

Section 5 - Reactivity Data

Chemical Stability—Stable

Incompatibility—Organic and Inorganic Chemicals

Reactivity—Strong Oxidizers

Hazardous Decomposition Products (may form)

--Carbon Dioxide, Carbon Monoxide, Toxic Vapors

Section 6 - Toxicological Properties

Route of Entry—Eyes, Skin/Skin Absorption, Breathing, Swallowing

Effects of Acute Overexposure—

Eyes—May cause severe damage and even blindness

Skin—Skin absorption is possible, exposure may cause irritation and possible ulceration.

Breathing—Fumes can cause irritation and damage to nasal/respiratory passages.

Swallowing—Can result in damage to mucous membranes and deep tissues.

Effects of Chronic Exposure—Chronic irritation of the eyes and chronic inflammation of nose, throat, and lungs.

Section 6 - Toxicological Prop. (cont'd)

Exposure Limits—OSHA VPEL 50.000 ppm-ceiling
 ACGIH TLV 50.000 ppm-ceiling vapor and mist
 Irritancy of Product—Skin, Eyes, Nose, and Throat
 Sensitization to Product—N/A Carcinogenicity—NO
 Teratogenicity—N/A Reproductive Toxicity—NO
 Mutagenicity—NO Synergistic Products—N/A

Section 7 - Preventive Measures

Personal Protective Equipment—
 Gloves—Rubber, Neoprene Respirator—Chemical Cartridge
 Eyes—Chemical Splash Goggles Clothing—Lab Coat
 Engineering Controls—Mechanical Ventilation Sufficient
 Leak and Spill Procedure—Cover the contaminated surface with sodium bicarbonate or a soda ash/slaked lime mixture (50/50). Collect for disposal, wash site with soda ash/water solution
 Waste Disposal—Dispose according to federal, provincial/state, and local regulations
 Handling Procedures—Persons must wear proper personal protective equipment.
 Storage Requirements—Store away from incompatible materials.
 Special Shipping Information—
 DOT Information—49CFR172.101
 -DOT Description—
 --Corrosive liquid, acidic, organic, N.O.S., 8, UN3265, 111
 -Labeling Exceptions for Class 8—49CFR173.154
 --Each package may not exceed 30 kg (66 pounds)
 --Inner packaging not over 4.0 L (1 gallon)

Section 8 - First Aid Measures

Skin—Immediately flush exposed area with running water for at least 15 minutes; if ulceration, get medical help; remove contaminated clothing and launder prior to reuse; discard contaminated shoes.

Eyes—Immediately flush with large amounts of running water for at least 15 minutes, lifting upper and lower lids. Get immediate medical attention; if physician unavailable continue flushing with water; do not use chemical antidote.

Swallowing—Dilute by drinking water and milk of magnesia, then induce vomiting; never give anything orally to unconscious person; get immediate medical help.

Breathed—Move individual to fresh air; if breathing difficult administer oxygen; if breathing has stopped, give artificial respiration; keep person warm, quiet, and get immediate medical help.

NOTE TO PHYSICIANS—This product contains ethylene glycol. Ethanol decreases the metabolism of ethylene glycol to toxic metabolites. Ethanol should be administered as soon as possible in cases of severe poisoning, since the elimination half-life of ethylene glycol is 3 hours. If medical care will be delayed several hours, use three to four 1-ounce oral “shots” of 86-proof or higher whiskey before or during transport to the hospital. Hemodialysis effectively removes ethylene glycol and its metabolites from the body.

Section 9 - Preparation Date of MSDS

Prepared by—Tim Beezhold Op/Mgr
 708-331-1855
 May 25, 2004