

MATERIAL SAFETY DATA SHEET

SECTION I - GENERAL INFORMATION

Trade Name:
Product No.:

Manufacturer: LeaRonal, Inc.
Address: 272 Buffalo Avenue
Freeport, N.Y. 11520

HMIS/NFPA HAZARD RATINGS:

Health: 1
Flammability: 0
Reactivity: 0
Personal
Protection: C

Emergency Number: LeaRonal (516) 868-8800
(24 hours, day or night)

Product Information: (516) 868-8800

(See Sec. XI for meaning)

Chemical Family: Polyglycol
End Use: Copper plating additive
Description: Aqueous solution of polyethylene glycol

SECTION II - HAZARDOUS INGREDIENTS

CHEMICAL OR COMMON NAME	CAS REG.NO.	PERCENT	EXPOSURE LIMITS
Sulfuric acid	7664-93-90	< 2% v/v	TLV 12 mg/m3

NOTES: TLV reported as 8-hr TWA value. Remaining ingredients are regarded to be non-hazardous under criteria in Appendix A of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point @ 1 atm.: Approx 212 deg F
Evaporation Rate: Slower than n-butyl acetate
Vapor Density: Heavier than air
Specific Gravity @ 20 C: 1.00 - 1.01
Percent volatiles: Less than 99 %
Solubility in Water: Miscible in all proportions
Acidity/alkalinity: Moderately acidic, pH < 2.0
Appearance and Odor: Clear, reddish liquid. Mild typical odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: Noncombustible liquid
Flash Point: N/a
Flammability Limits: N/a
Extinguishing Media: Water spray, alcohol foam, carbon dioxide, dry chemical.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus and full turn-out gear.

UNUSUAL FIRE AND EXPLOSION HAZARDS: May emit small amounts of toxic and irritating gases and fumes upon thermal decomposition at flame temperatures.

*** MSDS continued on next page ***

MATERIAL SAFETY DATA SHEET

SECTION V - REACTIVITY DATA

Stability: Stable
Conditions to Avoid: High temperatures.
Incompatible Materials: Strong oxidizing agents, strong alkalies, cyanides.

HAZARDOUS DECOMPOSITION PRODUCTS: Small amounts of carbon monoxide and carbon dioxide.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION VI - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY/EXPOSURE: Eyes, skin.

HEALTH HAZARDS - EFFECTS OF OVEREXPOSURE:

- Eyes: May cause eye irritation with discomfort and tearing and possible temporary inflammation of the conjunctiva. Unlikely to cause eye corrosion due to low levels of acid present.
- Skin: May cause skin irritation with discomfort or rash. Unlikely to cause corrosion due to low levels of acid present.
- Inhalation: If mists are inhaled, irritation of respiratory tract and mucous membranes.
- Ingestion: Industrial chemicals are never to be taken internally. Will cause irritation of mouth, throat, esophagus and stomach. Unlikely to cause corrosion due to low levels of acid present.

EFFECTS OF CHRONIC OVEREXPOSURE: Unknown to the best of our knowledge. No evidence of adverse effects from available information.

CARCINOGENICITY REVIEW: This product is not considered to be a carcinogen according to criteria in Appendix A of the OSHA Hazard Communication Standard [Ref. (1)].

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Due to its irritating properties, this mixture may aggravate existing dermatitis.

FIRST AID PROCEDURES FOR:

- Eye Contact: Flush eyes with copious water for at least 15 minutes, ensuring thorough rinsing under eyelids. If irritation develops, seek prompt medical attention.
- Skin Contact: Remove contaminated clothing and wash skin with soap and water. If signs of irritation are evident, seek prompt medical attention.
- Inhalation: Remove victim to fresh air. If victim experiences continued breathing difficulties, administer oxygen until medical assistance can be rendered. If breathing stops, give artificial respiration and seek medical attention immediately.
- *** MSDS continued on next page ***

MATERIAL SAFETY DATA SHEET

SECTION VI - HEALTH HAZARD DATA (continued)

Ingestion: Give water, milk or milk of magnesia to dilute and neutralize in stomach, unless victim is unconscious, and induce vomiting. Seek immediate medical attention.

SECTION VII - EXPOSURE CONTROL MEASURES

RESPIRATORY PROTECTION: Use a NIOSH-approved cartridge respirator for acid gas under severe mist conditions. Otherwise, no special protection required under normal handling conditions.

Ventilation: General ventilation recommended.
Protective Gloves: Rubber, neoprene or PVC-coated.
Eye Protection: Safety goggles or face shield.

OTHER PROTECTIVE EQUIPMENT: Use of apron or coveralls and rubber/neoprene boots is also recommended.

EMERGENCY EQUIPMENT: Safety showers, eye wash, oxygen supply and first aid kits must be readily accessible in areas where this product is used.

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Wear safety equipment. Contain spill and neutralize/absorb with lime or soda ash. Sweep/shovel as much as possible into polyethylene container and seal until material can be disposed of. Rinse spill areas with copious water into waste treatment system.

WASTE DISPOSAL METHODS:

Dispose of in accordance with applicable local, state and federal regulations by processing in an approved waste treatment facility. Consult authorities to ascertain proper disposal procedures.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Store in a cool, dry area, away from incompatible materials (See Section V). Protect from physical damage. Avoid breathing mists and contact with eyes and skin. Avoid overexposure. Always wear safety equipment when handling. Keep containers closed when not using.

OTHER PRECAUTIONS:

For industrial use only. Industrial chemicals are never to be taken internally. Use in a manner or application different than that described here or in the product's technical literature may result in a potential

*** MSDS continued on next page ***

MATERIAL SAFETY DATA SHEET

SECTION IX - SPECIAL PRECAUTIONS (continued)

hazard to the user and result in serious injury!

*
* NOTE: The data contained in this Material Safety Data Sheet apply only *
* to the product itself, not to the solutions in which it is used. *
* The user is urged to refer to the product's technical literature *
* to identify the solution's basic ingredients and to assess their *
* occupational hazards accordingly. *
*

SECTION X - OTHER REGULATORY REQUIREMENTS

TOXIC SUBSTANCES CONTROL ACT (TSCA): The chemical ingredients in this product are listed on the TSCA Inventory.

MASSACHUSETTS TOXIC SUBSTANCE LIST: This product does not contain ingredients listed on the Massachusetts Toxic Substance List (Ref. 6) besides the substances listed on the HAZARDOUS INGREDIENTS Section.

CALIFORNIA PROPOSITION 65: This product may contain small amounts of chemicals listed as being known to the State of California to cause cancer or birth defects or other reproductive harm, under the California Safe Drinking Water & Toxic Enforcement Act of 1986 (Proposition 65). It does not contain sufficient amounts of such chemicals to make it subject to federal rules on hazard communication for carcinogens administered by OSHA [29 CFR 1910.1200 (d), Reference (1)].

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986

This product contains the following chemicals subject to the reporting requirements of sec. 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372:

CHEMICAL NAME	CAS REG. NO.	WT. PERCENT
Sulfuric acid	7664-93-9	4.0 max.

SECTION XI - DOCUMENTARY INFORMATION

EFFECTIVE DATE: 6-04-1991 APPROVAL: (on file)
SUPERSEDES: 6-01-1989

REFERENCES: (1) 29 CFR 1910.1200, 29 CFR 1910.1000 (Subpart Z).
(2) TLV's And Biological Exposure Indices for 1990-1991, ACGIH.
(3) IARC Monographs.
(4) Registry of Toxic Effects of Chemical Substances (RTECS), 1985-1986. NIOSH, April, 1987.
(5) National Toxicology Program (NTP) Annual Report on Carcinogens.

*** MSDS continued on next page ***

MATERIAL SAFETY DATA SHEET

SECTION XI - DOCUMENTARY INFORMATION (continued)

(6) 105 CMR 670.000 3/31/86 - Massachusetts Toxic Substance List.

(7) Raw Material Safety Data Sheets.

HMIS HAZARD RATING: 4 = Severe hazard "*" on HEALTH indicates
3 = Serious hazard Chronic hazard
2 = Moderate hazard
1 = Slight hazard
0 = Insignificant hazard

ABBREVIATIONS: > = greater than, < = less than, N/a = not applicable
ca. or - = approximately.

The information and recommendations contained herein are based upon data believed to be correct and are presented to comply with the OSHA Hazard Communication Standard (29 CFR 1910.1200). However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein or to the results to be obtained from their use thereof. Seller assumes no responsibility for injury to buyer or to third persons or for any damage to any property and buyer assumes all such risks.

*** End of MSDS ***