

IN THE EVENT OF A CHEMICAL EMERGENCY INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT, NOTIFY: CHEMTREC AT 1-800-424-9300

SECTION 1 IDENTIFICATION

PRODUCT NAME: Quick ElectrolyteTM General Chemical Description: Copper Plating Solution Rating (Scale 0-3): Health-2, Fire-0, Reactivity-2 Formula: Proprietary Formulation. MSDS Date: 2-1-02

SECTION 2 INGREDIENTS

| Component | % by weight | Exposure Guidelines C. A. S .# | TLV |
|---------------------------|-------------|-----------------------------------|---------|
| Copper Sulfate | 3.5 | 7758-98-7 | 1 mg/M3 |
| Sulfuric Acid | 3 | 7664-93-9 | 1 mg/M3 |
| Non-hazardous Proprietary | >93% | n/a | n/a |
| Ingredients | | | |

Other component being withheld as a Trade Secret

SECTION 3 PHYSICAL DATA

| Boiling Point (Degree F): | 212 | |
|-------------------------------|-----|---------------------------|
| Vapor Pressure (mm Hg @25C): | | N/A |
| Percent Volatiles by Weight: | | N/A |
| Specific Gravity (water = 1): | | 1.15 |
| Solubility in Water: | | Good |
| Vapor Density: | | N/A |
| Evaporation Rate: | | N/A |
| pH: | | <1.0 |
| Appearance and Odor: | | Dark blue color - no odor |
| | | |

SECTION 4 FIRE AND EXPLOSION HAZARD DATA

| Flash Point (Degree F): | N/A |
|-----------------------------------|---|
| Flammable Limits: | Non Flammable |
| Extinguishing Media: | Use carbon dioxide, dry chemical, water |
| Unusual Fire or Explosion Hazard: | None |
| Special Fire fighting Procedures: | Use self-contained breathing apparatus |

SECTION 5 REACTIVITY DATA

| Product Stability: | Product is stable under normal handling and storage c | onditions. |
|---------------------------------|---|------------|
| Incompatibility: | Avoid mixing with strong alkalis. | |
| Hazardous Decomposition Product | s: N/A | |
| Conditions to Avoid: | N/A | |
| Hazardous Polymerization: | Hazardous Polymerization will not occur. | |

SECTION 6 RELEASE RESPONSE DATA

Spill response operations must be conducted in accordance with the provisions of OSHA 29 CFR1910.120. Review the entire MSDS before proceeding with spill response.

Small Spills:

Activate available exhaust ventilation equipment in the immediate spill area. Wipe up or absorb spilled material with vermiculite or other similar material. Wash area with soapy water to remove residue. Collect absorbed material and water rinses in appropriate containers. Dispose of in accordance with current Federal, State, and local regulations. Avoid disposal methods due to high copper contents.

Large Spills:

Limit access to the immediate spill area. Shut off source of the release if this can be done without risk of injury. Activate available exhaust ventilation systems in the area. Dike area to contain the spill and prevent releases to sewers, drains or other waterways. Collect spilled material for salvage/disposal. Apply absorbent material to soak up residue. Wash area with soapy water. Prevent runoff from entering waterways. Transfer absorbed material and water rinses to appropriate waste containers. Dispose of in accordance with current Federal, State and local regulations. Avoid disposal methods due to high copper contents.

SECTION 7 HANDLING PRECAUTIONS

The recommendations described in this section are provided as general guidance for minimizing exposure when handling this product. Because usage conditions will vary depending on customer application, specific safe handling procedures should be developed by a person knowledgeable in the intended usage conditions and equipment. Employees must be properly trained in safe handling of this product prior to use.

Personal Protection:

This produce can cause eye irritation. Prevent eye contact through the use of chemical safety glasses, splash-proof chemical goggles, or face shield selected with regard to conditions of usage and exposure potential. This product can cause skin irritation. Wear appropriate protective

gloves, a proper chemical-resistant apron and additional impervious clothing to prevent skin contact, contamination of clothing and possible skin absorption. Normal work clothing should be washed before re-use. Wash hands and face thoroughly after handling this product and before eating, drinking or smoking. Emergency eye wash facilities and safety shower should be available.

Ventilation Recommendations and Respiratory Protection:

Provide effective mechanical exhaust ventilation to draw vapors, mists or fumes generated during processing away from the worker and prevent routine inhalation.

Storage:

Store in a cool, dry location with adequate ventilation. Keep container tightly sealed when not in use. Keep away from open flames and heat sources.

SECTION 8 HEALTH DATA

| Routes of Exposure: | Skin and eye contact; inhalation of vapors. |
|--|--|
| Medical Conditions Aggravated by Exposure: | Exposure may aggravate preexisting skin and/or eye |
| | disorders. |
| Eye Contact | Contains materials which causes eye irritation. |
| Skin Contact: | Contains materials which cause skin irritation. |
| Inhalation: | Vapors that may cause respiratory irritation, nausea |
| | and headaches. |
| Ingestion: | Harmful if swallowed. |

SECTION 9 FIRST AID PROCEDURES

| Eye Contact: | Flush eyes thoroughly with water for at least 15 minutes while holding eyelids open. Get medical attention. |
|---------------|---|
| Skin Contact: | Remove any contaminated clothing and flush the affected area of the skin thoroughly with plenty of water. Follow by washing with soap and water. Get medical attention if irritation persists. Do not reuse contaminated clothing until properly cleaned. |
| Inhalation: | Remove victim to fresh air. Provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get immediate medical attention. |

SECTION 10 ADDITIONAL INFORMATION

Medical Conditions Aggravated By Exposure: Irritant to eyes, skin and respiratory tract. May damage mucous membranes if swallowed.

Special Notes:

Date Prepared –February 2003. Document No. - 222220 Revision Information: Abbreviations: Supersedes April, 1998

Limit NA = Not Applicable

NE = Not Established ND = Not Determined ppm = Parts per Million C = Ceiling Concentration mg/M3 = Milligrams Per Cubic Meter