

MATERIAL SAFETY DATA SHEET

TRANSENE COMPANY INC.
10 Electronics Avenue
Danvers MA 01923
978-777-7860 fax: 978-739-5640
www.transene.com

Emergency Contact #: Chemtrec 1-800-424-9300

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SECTION I - PRODUCT IDENTIFICATION

Product Name: **COPPER ELECTROPLATING SOLUTION**
Chemical Synonyms: Copper Plating Solution
Chemical Family: Copper Sulfate Solution

SECTION II - HAZARDOUS INGREDIENTS

<u>Hazardous mixtures of other liquids, solids, or gases</u>	<u>CAS #</u>	<u>%</u>	<u>TLV(units)</u>
Copper Sulfate	7758-99-8	20-25	100 ppm
Sulfuric Acid		5-10	1mg/M ³
Non-hazardous aqueous solution		balance	

SECTION III - PHYSICAL DATA

Boiling Point: N/A	Specific Gravity: 1.06
Vapor Pressure (mm Hg.) N/A	% Volatiles by volume: approx. 75
Vapor Density (air=) N/A	Evaporation rate: N/A
Solubility (H ₂ O): Complete	

Appearance and odor: Clear blue solution, mild odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash point: Non-flammable Flammable limits: N/A
Fire extinguishing media: water fog, foam, CO₂, dry chemical
Unusual fire & explosion hazards: toxic fumes of sulfur dioxide, and sulfur trioxide
Special fire fighting procedures: wear NIOSH approved self-contained breathing apparatus.

SECTION V - HEALTH HAZARD DATA

Threshold limit value: N/A
Effects of overexposure: May cause severe burns strong irritant to skin and mucous membranes.
May cause dizziness, diarrhea, nausea, gastrointestinal discomfort.
Emergency and first aid procedures: In case of eye or skin contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing. If swallowed do not give emetics; if conscious give tap water, milk or milk of magnesia.
Call a physician.

SECTION VI - REACTIVITY DATA

Stability: stable

Conditions to avoid: heat, increased pressure

Incompatibility: oxidizers such as chlorates or nitrates, strong bases

Hazardous decomposition products: flammable H₂ gas, hydrogen sulfide SO₂ or sulfur trioxide

Hazardous Polymerization: Will not occur Conditions to avoid: N/A

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: absorb with paper or other absorbent material - wash area with water. Neutralize spill with sodium bicarbonate or soda ash - slaked lime mixture and dilute with water. Scoop up slurry and dispose of as below.

Waste disposal methods: Treat with lime to precipitate basic copper salts - dispose in accordance with local, state, and federal regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection: NIOSH approved respirator

Ventilation: local exhaust preferred to maintain employee exposure. Mechanical: below airborne exposure limits.

Protective gloves: rubber

Eye protection: safety goggles

Other protective equipment: eye wash or shower facilities near workplace. Use appropriate industrial hygiene

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Tightly closed containers. Store in cool, well ventilated place.

Other precautions: Do not get in eyes, on skin or clothing. Avoid breathing vapors, wash after handling. Store separate from incompatible materials.

The information published in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available.

Prepared by: M.E. Hecht

ADDENDUM TO MATERIAL SAFETY DATA SHEET REGULATORY STATUS

THIS ADDENDUM MUST NOT BE
DETACHED FROM THE MSDS
IDENTIFIES SARA 313 SUBSTANCE(S)
Any copying or redistribution of the MSDS
must include a copy of this addendum
(Chem.Key: PHACD)

HAZARD CATEGORIES FOR SARA

Section 311/312 Reporting

Product or Components Of Products	SARA EHS Sect. 302		SARA Section 313 Chemicals		CERCLA Sec. 103	RCR
	RQ (lbs.)	TPQ (lbs.)	Name List	Chemical Category	RQ (lbs.)	Section 26
Copper Sulfate (Copper Compound)	No	No	No	Yes	10	No
Sulfuric Acid (7664-93-9)	1000	1000	Yes	No	1000	No

Applicable Products:

SARA Section 302 EHS RQ: Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.
 SARA Section 302 EHS TPQ: Threshold Planning Quantity of Extremely Hazardous Substance. An asterisk (*) following a threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity + 10,000 LBS.
 SARA Section 313 Chemicals: Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.
 CERCLA Sec 103: Comprehensive Environmental Response, Compensation and Liability Act (Superfund). Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center (800-424-8802); Listed at 40 CFR 302.4
 RCRA: Resource Conservation and Reclamation Act. Commercial chemical product wastes designated as acute hazards and toxic under 40 CFR 261.33

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ALUMINUM OXIDE