MATERIAL SAFETY DATA SHEET

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: TRANSENE COMPANY, INC. ADDRESS: DANVERS INDUSTRIAL PARK 10 ELECTRONICS AVENUE DANVERS, MA 01923, TEL: (978) 777-7860 FAX: (978)-739-5640 WWW.TRANSENE.COM EMERGENCY NO. 1-800-424-9300 CHEMTREC

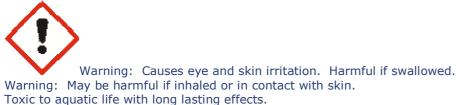
MATERIAL NAME: **COPPER ETCHANT BTP** REVISED: December 2009 CHEMICAL FAMILY: Copper Chloride Solution

SECTION 2. HEALTH HAZARD INFORMATION

GHS Classifications

Oxidizing liquids : Not classified Corrosive to Metals: Not classified Acute toxicity Oral : Category 4 Acute Toxicity Dermal: Category 5 Acute toxicity Inhalation : Category 5 Skin corrosion / Skin irritation : Category 2 Serious eye damage / Eye irritation : Category 2A Respiratory or skin sensitization : Not classified Special target organ systemic toxicity single exposure: Not classified Special target organ systemic toxicity repeated exposure : Not classified Acute aquatic environmental hazards : Category 2 Chronic aquatic environmental hazards: Category 2

Pictograms or Hazard symbols



Precautionary Statement Prevention

Use only in a well-ventilated area. Do not eat, drink or smoke when using this product. Do not breathe fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing /eye protection/face protection.

Wash hands thoroughly after handling.

Avoid release to the environment

SECTION 3.COMPOSITION/INFORMATION ON INGREDIENTS

Material Copper (II) Chloride REV 2 Wt % CAS# 10125-13-0 < 10 Copper Etchant BTP GHS Version Toxicity

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Ammonium Hydroxide	CAS# 1336-21-6	< 5	50 ppm
Water	CAS# 7732-18-5	> 85	

SECTION 4. FIRST AID MEASURES

EFFECTS OF OVEREXPOSURE

FIRST AID: Overexposure to mist can cause tissue damage, especially to eyes and lungs.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point and Method Autoignition Temp. Flammability Limits In Air LOWER UPPER NA NA NA

Extinguishing media: Water spray or fog, carbon dioxide and dry chemical. **Special fire fighting procedures:** None

SECTION 6. ACCIDENTAL RELEASE MEASURES

SPILLS, LEAKS: Ventilate area of leak or spill. Dike and cover the contaminated areas with absorbent, non-combustible material such as earth, sand, or vermiculite.

SECTION 7. HANDLING AND STORAGE

Wash thoroughly after handling. Remove contaminated clothing and wash before re-use. Do not breathe mist or vapor. Do not expose eyes, skin, or clothing. Keep container closed tightly. Use with adequate ventilation or respiratory protection. Do not store near combustibles or in direct sunlight. Store in a cool, dry, well-ventilated area away from incompatible substances. Separate from strong acids.

SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

Respiratory protection: None required.

Ventilation: Where adequate ventilation is not available, use NIOSH approved vapor respirator with dust, fume and mist filters. Local ventilation through fume hoods or laminar flow stations is also preferred. Keep fumes away from strong bases.

Protective gloves: Skin contact should be minimized through use of rubber gloves.

Other protective equipment: Steel tipped shoes/eye wash station/chemical safety chemical retardant clothing. Eye protection: Safety goggles / face shield

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form :	Liquid	
Appearance :	Deep blue-purple	
Odor :	Mild ammonia	
рН:	> 9	
Melting point:	$0 {}^{\mathrm{o}}\mathrm{C}$	
Boiling point/Boiling range :	100 °C (water)	
Flash point :	Non-flammable.	
Ignition point :	Will not ignite.	
Danger of explosion:	Product is not explosive	

Vapor density (Air = 1) : Volatiles, %: Vapor pressure at 15° C, mm Hg: Specific gravity : Solubility in / Miscibility: Evap. Rate (Water = 1): Not available > 80 Not available 1.02 g/cc Completely miscible in water > 1

SECTION 10. STABILITY AND REACTIVITY

Stability

Stable X Conditions to avoid: Excess heat , light, confined spaces Unstable

Incompatible with: Strong acids; oxidizers

Hazardous decomposition products: Carbon and carbon oxides; ammoniaHazardousMay occurConditions to avoid: Excess heat, damp.polymerization:Will not occur X

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE, Copper Chloride LD₅₀ (oral, rat): 584 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

Bioaccumulation : When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater. When released into water, this material is not expected to biodegrade. When released into water, this material is not expected to biodegrade. When released into water, this material is not expected to evaporate significantly. This material is expected to significantly bioaccumulate. Copper has an experimentally determined bioconcentration factor (BCF) of greater than 100.

Ecotoxicity : This material is expected to be toxic to aquatic life. The LC50/96 hour values for fish are less than 10 mg/L. The IC50/72 hour values for algae are less than 10 mg/L (toxicity data for copper).

SECTION 13. DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose of in accordance with all federal state and local regulations. Send waste to an approved waste disposal facility.

SECTION 14. TRANSPORTATION INFORMATION

Ammonia Solution, UN2672, PGIII

SECTION 15. REGULATORY

Symbol: C, Corrosive R-Phrase: R21/22: Harmful in contact with skin and if swallowed. S-Phrases: S17: Keep away from combustible material.

SECTION 16. OTHER INFORMATION

NFPA Codes: Health: 2 Flammability: 0 Reactivity: 0 All ingredients of this product are listed on the US TSCA inventory under their parent anhydrous compounds.