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: PC ELECTROLESS COPPER SOLUTION C REVISED: August 2012 CHEMICAL FAMILY: Precious metal formulation Product Number: 110-0090000

SECTION 2. HEALTH HAZARD INFORMATION

GHS Classifications

Oxidizing liquids : Not classified Corrosive to Metals: Not classified Acute toxicity Oral : Category 4 Acute toxicity Inhalation : Not classified Acute toxicity Dermal: Not classified Skin corrosion / Skin irritation : Category 3 Serious eye damage / Eye irritation : Category 2B 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 : Not classified Chronic aquatic environmental hazards: Not classified

Pictograms or Hazard symbols



Warning: Harmful if swallowed.

Warning: Causes mild skin irritation and eye irritation.

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

Wt %

REV 3

PC Copper C GHS Version

Hydrochloric Acid	CAS# 7647-01-0	1-5
Stannous Chloride	CAS# 7772-99-8	1-5
Water	CAS# 7732-18-5	90-98
Total		100

SECTION 4. FIRST AID MEASURES

EFFECTS OF OVEREXPOSURE

FIRST AID:

Eye Contact: Harmful to the naked eye; in case of contact flush eyes well for 15 minutes, lifting the lower and upper eyelids occasionally. May cause permanent eye damage. Seek medical attention.

Skin Contact: Obtain medical attention: Harmful to exposed skin. Flush skin well with water for 15

minutes, wash with soap and water. Remove affected clothing, get medical attention.

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration. Seek medical attention. Inhalation of vapors may cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract. **Ingestion:** Will cause burns to the mouth and damage to the digestive tract. Get medical attention immediately. Do not induce vomiting; give large quantities of water.

SECTION 5. FIRE FIGHTING MEASURES

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

Extinguishing media: Water spray. Neutralize with soda ash or slaked lime.

Special fire fighting procedures: Wear chemically retardant gear and NIOSH approved self-contained breathing apparatus. Thermal decomposition produces irritating and toxic fumes. Extreme heat or contact with metals can release flammable hydrogen gas.

Toxic gases released: Hydrochloric acid, hydrogen.

SECTION 6. ACCIDENTAL RELEASE MEASURES

SPILLS, LEAKS: Ventilate area of leak or spill. Stop leak if possible to do so without risk. Clean-up personnel should wear protective clothing and NIOSH approved respirator. Dike and cover the contaminated areas with absorbent, non-combustible material such as earth, sand, or vermiculite. Neutralize with alkaline material such as soda ash or lime. Do not use combustibles. Do not flush to sewer.

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. Avoid contact with combustibles. Do not use with metal tools or items. 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 metals, alkali, and organics. Residue in empty containers may still be hazardous.

SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

Ventilation: Where adequate ventilation is not available, use NIOSH approved vapor respirator complying with requirements of 29CFR 1910.134 with dust, fume and mist filters. Local ventilation through fume hoods or laminar flow stations is also preferred. Keep fumes away from strong bases and nitric acid fumes. **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 : **Appearance : Odor**: pH: **Melting point: Boiling point/Boiling range :** Flash point : **Ignition point : Danger of explosion: Decomposition temperature:** Vapor density (Air = 1): Volatiles, %: Vapor pressure at 15° C, mm Hg: **Specific gravity :** Solubility in / Miscibility: Evap. Rate (Water = 1):

Liquid Colorless Acrid, pungent < 1 Not available 102 °C Non-flammable. Will not ignite. Product is not explosive $> 150 \,{}^{\circ}\text{C}$ No information > 92 190 mm Hg at 25 °C 1.01 Completely miscible in water No information found

SECTION 10. STABILITY AND REACTIVITY

Stability

Incompatible with:

Stable X Conditions to avoid: Excess heat , sunlight, confined spaces

Unstable

Most common metals, strong bases, metal oxides, amines, hydroxides, cyanides, sulfides, sulfites, formaldehyde, and carbonates.

Hazardous decomposition products: Hydrogen chloride fumes, hydrogen gas

HazardousMay occurConditions to avoid: Excess heat, direct sunlight.polymerization:Will not occur X

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE: Inhalation rat LC50: 90 pp7/1 hr Oral rabbit LD50: 27 g/kg Investigated as a tumorigen, mutagen, reproductive effector Carcinogenicity: NTP: No IARC: No Z List: No OSHA reg: No IARC Category 3

OTHER DATA: Corrosive. Vapor inhalation burns mucous membranes; causes coughing, dyspnoea.

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.

Environmental Toxicity: This material is not expected to be toxic to aquatic life.

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

DOT shipping Name: Non-regulated

SECTION 15. REGULATORY

Symbol: C, Corrosive

R-Phrase: 20/21/22: Harmful by inhalation, in contact with skin and if swallowed. S-Phrases: 23-36/37/39-45 Do not breathe vapor. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

The following component of this product is regulated as a toxic chemical under section 313 or Title III SARA, and 40CFR 372:

Hydrochloric Acid CAS# 7647-01-0

SECTION 16. OTHER INFORMATION

NFPA Codes: Health: 1 Flammability: 0 Reactivity: 0 Ingredients are TSCA listed.