

Material Safety Data Sheet

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

Emergency #: Chemtrec 1-800-424-9300

Revised: 5-08

SECTION I

Trade Name: **IRON OXIDE MASK ETCHANT ME-10**
Chemical Name: ferrous chloride aqueous solution
Chemical Family: Inorganic acid solution
Formula: FeCl₂ Aqueous Solution

SECTION II - HAZARDOUS INGREDIENTS

| <u>Hazardous mixtures of other liquids, solids, or gases</u> | <u>%</u> | <u>TLV (Units)</u> |
|--|----------|--------------------|
| Hydrochloric Acid (HCl) 7647-01-0 | 20-25 | 5ppm / ceiling |
| Ferrous Chloride (FeCl ₂) 7758-94-3 | 15-20 | N/A * |
| *FeCl ₂ : orl-rat LD ₅₀ : 984mg/kg | | |

SECTION III - PHYSICAL DATA

| | |
|-------------------------------------|-----------------------------------|
| Boiling Point: N/A | Specific Gravity: approx. 1.14 |
| Vapor Pressure (mmHg): N/A | % Volatiles by volume: approx. 85 |
| Vapor Density (air=1): N/A | Evaporation Rate: N/A |
| Solubility (H ₂ O): 100% | pH : <1 |

Appearance and odor: clear-amber/green solution, pungent odor

SECTION IV - FIRE AND EXPLOSION DATA

Flash point: Non-flammable

Flammable limits: Upper - N/A Lower - N/A

Extinguishing media: Any media suitable for extinguishing the supporting fire.

Special fire fighting procedures: Wear full protective clothing and self-contained breathing apparatus.

Unusual fire & explosion hazards: Contact with metals produces hydrogen, which forms explosive mixtures with air. Strongly corrosive.

SECTION V - HEALTH HAZARD DATA

Threshold limit value: 5ppm (ceiling)

Effects of overexposure: Concentrated solutions cause severe burns; permanent visual damage may occur. Inhalation: cough, choking, inflammation of respiratory tract. Ingestion: corrosion of mucous membranes, nausea, vomiting, diarrhea.

Emergency and first aid procedures: Skin contact: water flush immediately and call doctor. Inhalation: give artificial respiration if breathing has stopped: call doctor. Eye contact: immediately wash with water for 15 minutes; call doctor. Ingestion: call doctor: if patient is conscious, give water. Do not induce vomiting. Never administer anything by mouth to an unconscious person.

SECTION VI - REACTIVITY DATA

Stability: Stable X Conditions to avoid: contact with metals produces H₂ gas.

Incompatibility: Alkalies and metals, acetic anhydride, ethylenediamine, NH₄OH, chlorosulfonic acid.

Hazardous decomposition products: fumes of hydrogen chloride and hydrogen in contact with metals; chlorine from oxidizers.

Hazardous polymerization: will not occur X

Conditions to avoid: excess heat and pressure

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Cover contaminated surface with sodium bicarbonate or a soda ash, slaked lime mixture (50-50). Mix and add water if necessary to form a slurry. Segregate waste in approved container and dispose of as described below. Wash site with soda ash solutions.

Waste disposal method: Neutralize and dilute in large amount of water. Check with disposal agency ensuring compliance with local, state and federal regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory protection: Gas mask with acid vapor canister or self-breathing apparatus.

Ventilation: Local exhaust: local preferred. Keep employee eye bath and shower facilities close to work area.

 Mechanical: exposure below airborne exposure limit.

Protective gloves: rubber or neoprene

Eye protection: chemical goggles or splash-proof face shield.

Other protective equipment: rubber suit or lab coat

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Protect against physical damage. Store in cool, well-ventilated place, separate from all oxidizing agents.

Other precautions: insure that material is isolated from other incompatible chemicals.

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

Acute Chronic Fire Pressure Reactive

| Product or Components Of Products | SARA EHS Sect. 302 | | SARA Section 313 Chemicals | | CERCLA Sec. 103 | RCRA |
|--------------------------------------|--------------------|------------|----------------------------|-------------------|--------------------|----------------|
| | RQ (lbs.) | TPQ (lbs.) | Name List | Chemical Category | RQ (lbs.) | Section 261.33 |
| Hydrochloric Acid (7647-01-0) | 5000 | 500 | Yes | No | 5000 | No |

Applicable Products:
PC Copper Etchant (CE-100, CE-200),
CRE-473, Iron Oxide Mask Etchant, TFP,
TFTN, Electroless Nickel Plating Strike, PC
Electroless Copper D, Bright Electroless
Tin Part B, SF50

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

Effective Date 09-16-02 Supersedes 02-17-87