

MATERIAL SAFETY DATA SHEET

TRANSENE COMPANY, INC.
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EMERGENCY NO.CHEMTREC 1-800-424-9300

SECTION I. MATERIAL IDENTIFICATION

Manufacturer Name: Transene Company, Inc.
Address: 10 Electronics Avenue Danvers MA 01923
Trade Name and Synonyms: PC Electroless Copper Solution B

Reviewed April 2004

HMIS Code: Health 3 Flammability 2 Reactivity 1

SECTION II. HAZARDOUS INGREDIENTS

		%	Toxicity (mg/M ³)
Hazardous Mixtures of Other Liquids, Solids, or Glass			
Methanol	CAS REG# 67-56-1	25	200ppm
Formaldehyde (37%)	CAS REG# 50-00-0	4	1ppm
Aqueous solution non-hazardous		71	-----
Formalin: oral-woman 36mg/kg LDLO, inhalation-HUM TCLP, 8ppm			

SECTION III. PHYSICAL DATA

Boiling point at 1 atm, deg C	>200 F	Specific gravity, 20/4°C	1.05
Vapor pressure at 15°C, mm Hg	1mm	Evap. Rate(BuAc = 1)	100
Vapor density (Air = 1)	1.04	Volatiles, %	
Water solubility at 20°C	complete	Evaporation Rate	N/A
Appearance & Odor: Colorless liquid with pungent odor (odor threshold = 1 ppm)			

SECTION IV. FIRE AND EXPLOSION DATA

<u>Flash Point and Method</u>	<u>Auto-ignition Temp.</u>	<u>Flammability Limits In Air</u>	LOWER	UPPER
Approx. 120 F closed cup	N/A	N/A		

Extinguishing media: Water, dry chemical, foam, carbon dioxide

Special fire fighting procedures: Use water to keep fire exposed containers cool and to dilute spills to non-flammability. Use self-contained breathing apparatus.

Usual fire and explosion hazards Violent reaction with CrO₃, HClO₄, P₂O₃. DANGEROUS WHEN EXPOSED TO HEAT, FLAME OR OXIDIZERS.

SECTION V. HEALTH HAZARD DATA

2ppm. HCHO is a definite animal carcinogen, indefinite human carcinogen. Chronic formaldehyde exposure may promote the formation of square cell nasal carcinomas, and may cause liver failure and chronic heart disease. HCHO in concentrations over 100 ppm is immediately dangerous to life. In lower concentrations HCHO causes mucous membrane irritation and upper-respiratory tract infection. Methanol poisoning may lead to blindness, contact dermatitis, skin and respiratory sensitizing.
SEE ATTACHMENT

Emergency and First Aid Procedures: Contact a Physician immediately!

Eyes: Wash eyes immediately with large amounts of water, lifting lids occasionally.

Skin: Remove contaminated clothing. Wash affected areas with liberal soap and water.

Inhalation: Remove to fresh air. If unconscious, administer artificial respiration.

Ingestion: If victim is breathing, give 2-4 glasses of water and induce vomiting by eliciting the gag reflex.

SECTION VI. REACTIVITY DATA

Stable

Conditions to avoid: heat, sparks flames, chronic anhydride, iodide, ammonium alkalies, tannin, nitromethane, nitrogen peroxide.

Incompatibility: (materials to avoid)

Fe salts, gelatine, bisulfides, oxidizing materials, $MgCO_3$, H_2O_2 , acids, bases

Hazardous decomposition products: CO, CO₂, and toxic oxides of carbon.

Hazardous polymerization: Will not occur. Conditions to avoid: heat, open flame, container may explode.

SECTION VII. SPILL AND LEAK PROCEDURES

Steps to be taken incase material is released or spilled. Shut off ignition sources. Contain spill in a well-ventilated area. Wear protective equipment. Use water spray to reduce vapors. Use absorbent materials such as sand or vermiculite to take up material. Place in containers for disposal labeled "combustible and cancer hazard". Isolate hazard area and deny entry. Keep out of sewers and water sources.

Waist disposal method: Be sure disposal container is labeled "combustible and cancer hazard" Ensure that disposal is in absolute compliance with local, state and federal regulations.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Respiratory protection (specify type) Provide local exhaust ventilation system to meet permissible exposure limits. Exposure limit to 30ppm type "C" supplied air respirator

Special: laminar flow hood

Protective gloves: impervious rubber

Eye protection: Do not wear contact lenses. Use safety goggles or splash shield.

Other protective equipment: Eye wash station, safety shower in close proximity.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Precautions to be taken when handling and storing: Keep away from heat, sparks, and flames.

Retain in tightly close container at room temperature.

Other precautions: Store away from incompatible materials DOT hazard class ORM-A

ATTACHMENT ON FORMALDEHYDE

Toxicity:

36mg/kg oral-woman LDLO, 8ppm inhalation-human TCLO, 800mg/kg oral-rat LD50, 590mg/kg inhalation-rat LD50, 270mg/kg skin-rabbit LD50, mutagenic data (RTECS), reproductive effects data (RTECS) definite animal carcinogen (LARC), indefinite human carcinogen (LARC NIP). Formaldehyde has caused squamous cell carcinomas of the nasal cavities in rats. The evidence for carcinogenicity in humans is inadequate. Formaldehyde is an eye, skin, and mucous membrane irritant. It is also a skin and respiratory sensitizer.

HEALTH EFFECTS AND FIRST AID

Inhalation:

Toxic/irritant. 100ppm (formaldehyde) immediately dangerous to life or health. Acute exposure - formaldehyde in vapors or mist at concentrations of 1ppm cause mucous membrane and respiratory tract irritation with tearing and mild tingling sensations in the nose and throat. High concentrations may cause cough, headache, nausea, weakness, palpitation, dyspnea, burning of the nose and throat, bronchitis, pulmonary edema, pneumonitis and death.

Chronic exposure: May cause mucous membrane irritation. There is evidence that suggests that chronic formaldehyde inhalation may promote the formation squamous cell nasal carcinomas, and may cause cirrhosis of the liver and chronic heart disease. See human and animal carcinomic and animal mutagenic, reproductive effects, and tumorigenic references in toxicity section. Formaldehyde causes respiratory tract sensitizations.

First aid - Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention.

Skin contact - Irritant.

Acute Exposure - may cause irritation. Sensitization dermatitis may occur in previously exposed workers. Lesions may occur due to a sudden eczematous reaction on the eyelids, face, neck, scrotum and flexor surface of the arms, which may come only a few days after exposure. Eczematous reacting may also occur after a number of years on the hands, wrists, forearms, and parts of the body that are exposed to friction from clothing. Friction from the mucous membranes and necrosis may occur.

Chronic exposure - Repeated or prolonged contact may cause hardening and cracking of the skin, and sensitization dermatitis.

First aid - Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains approximately 15-20 minutes. Get medical attention.

Eye contact:

Irritant

Acute exposure - Formaldehyde vapors or mists may cause irritation and mild lacrimation. Concentrations of 10ppm can be withstood for only a few minutes and causes profuse lacrimation in all subjects. Ocular damage has been stated to result with exposure to formaldehyde vapors. Solution of 25-44% splashed in the eyes may cause burns, severe injury and corneal damage.

Chronic exposure - may cause conjunctivitis.

First Aid - wash eyes immediately with large amounts of water, occasionally lifting upper or lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention.

Ingestion:

Toxic/irritant

Acute exposure - may cause burning in the mouth and esophagus; nausea and vomiting, severe abdominal pain, diarrhea, vertigo, anuria, unconsciousness, jaundice, albuminuria, hematuria, acidosis and convulsions. Liver and kidney damage may occur, death occurs from circulatory failure. A mean fatal dose is about 2 ounces (60 76) of 37% solution.

First aid - if victim is conscious and not convulsive, immediately give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. From sitting position, head rest must be lower than hips to prevent aspiration. Keep patient warm and at rest. Get medical attention immediately.

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
Methanol (67-56-1)	No	No	Yes	No	5000	U154
Formaldehyde (50-00-0)	1000	500	yes	no	1000	4122

Applicable Products:

PC Electroless Copper Solution A

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 May 2002 Supersedes February 1987