

**Material Safety Data Sheet**

May be used to comply with  
OSHA's Hazard Communication Standard.  
29 CFR 1910.1200. Standard must be  
consulted for specific requirements.

**U.S. Department of Labor**

Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OMB NO. 1218-0072

<b>Identity</b> ( As used on Label and List) ALUMINUM ETCHANT TYPE A	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.
<b>Section I</b>	
Manufacture's Name TRANSENE COMPANY INC.	Emergency Telephone Number 800-424-9300 CHEMTREC 24 HOURS
Address (Number, Street, City, State and ZIP Code) 10 ELECTRONICS AVENUE	Telephone Number for Information 508-777-7860 Fax No: 508-739-5640
DANVERS INDUSTRIAL PARK	Date Prepared June 19, 1997
DANVERS MA 01923	Signature of Preparer (optional)
<b>Section II - Hazardous Ingredients / Identity Information</b>	

Hazardous Components ( Specific Chemical Identity; Common Name(s)) (optional)	OSHA PEL	ACGIH TLV	Other Limits Recommended	%
PHOSPHORIC ACID H <sub>3</sub> PO <sub>4</sub> CAS # 7664-38-2 %			1.0 mg/M <sup>3</sup>	80
NITRIC ACID HNO <sub>3</sub> CAS # 7697-37-2		ACGTH TLV: 2ppm (TWA) 4ppm (STEL)	2 ppm	5 %
ACETIC ACID C <sub>2</sub> H <sub>4</sub> O <sub>2</sub> CAS # 64-19-7			10 ppm	5 %
BALANCE DISTILLED WATER - NON HAZARDOUS				
NONE OF THE INGREDIENTS IN THIS PRODUCTS ARE SUSPECTED CARCINOGENS.				

**Section III - Physical / Chemical Characteristics**

Boiling Point	100 <sup>0</sup> C	Specific Gravity ( H <sub>2</sub> O = 1)	1.45
Vapor Pressure (mm Hg.)	N/A	Melting Point	---
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water at 20 <sup>0</sup> c Miscible			
Appearance and Odor CLEAR, COLORLESS, SYRUPY LIQUID, ODORLESS			

**Section IV - Fire and Explosion Hazard Data**

Flash Point (Method Used) NON-FLAMMABLE	Flammable Limits NOT APPLICABLE	LEL -----	UEL ----
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Extinguishing Media WATER SPRAY, DRY CHEMICAL, OR FOAM. CONTACT WITH COMMON METALS PRODUCES HYDROGEN (H<sub>2</sub>) WHICH MAY FORM FLAMMABLE MIXTURES WITH AIR UNDER CONDITIONS OF FIRE, TOXIC VAPORS MAY FORM, CORROSIVE LIQUID !

Special Fire Fighting Procedures WEAR SELF-CONTAINED BREATHING APPARATUS DURING THE FIRE AND  
PROTECT SKIN FROM VAPORS OR MIST.

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(Reproduce locally)  
Sept. 1985

OSHA 174,

**Section V - Reactivity Data**

Stability	Unstable		Conditions to Avoid AVOID CONTACT WITH COMMON METALS, STRONG BASES, OXIDIZERS AND COMBUSTIBLE ORGANICS.
	Stable	X	

Incompatibility ( Materials to Avoid) STRONG BASES, OXIDIZERS, MOST METALS AND COMBUSTIBLE ORGANICS.

Hazardous Decomposition or By products VARIOUS OXIDES OF PHOSPHORUS, NITROGEN & SOME CARBON DIOXIDE(CO<sub>2</sub>)

Hazardous Polymerization	May Occur		Conditions to Avoid
	May Not Occur	X	NOT APPLICABLE

**Section VI - Health Hazard Data**

Route(s) of Entry:	Inhalation ? YES	Skin? YES	Ingestion? YES
Health Hazards (Acute and Chronic) SOLUTION IS MODERATELY IRRITATING TO THE EYES, SKIN, AND MUCOUS MEMBRANES. CONCENTRATED SOLUTIONS MODERATELY TOXIC BY INGESTION.			
DIRECT CONTACT CAN CAUSE SEVERE BURNS. PERSONS WITH PRE-EXISTING SKIN DISORDERS OR DISEASE MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS SUBSTANCE.			
Carcinogenicity N/A	NTP? N/A	IARC Monographs? N/A	OSHA Regulated? N/A
Signs And Symptoms of Exposure <b>EYE CONTACT:</b> FLOOD WITH EXCESS OF WATER FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN			
PHYSICIAN <b>SKIN CONTACT:</b> FLOOD WITH WATER & COVER WITH MOIST BAKING SODA. CONTACT A			
PHYSICIAN <b>INHALATION:</b> REMOVAL TO CLEAN AIR IS USUALLY SUFFICIENT. IF NOT BREATHING,			
GIVE ARTIFICIAL RESPIRATION. CONTACT A PHYSICIAN.			
<b>INGESTION: DO NOT INDUCE VOMITING !</b> GIVE WATER WITH MILK OF MAGNESIA OR			
BEATEN			
Medical Conditions SEE SIGNS & SYMPTOMS OF EXPOSURE			
Generally Aggravated by Exposure N/A			

First Aid : PHYSICIAN	<b>EYE CONTACT:</b> FLOOD WITH EXCESS OF WATER FOR AT LEAST 15 MINUTES. CONTACT A
PHYSICIAN	<b>SKIN CONTACT:</b> FLOOD WITH WATER & COVER WITH MOIST BAKING SODA. CONTACT A
PHYSICIAN	<b>INHALATION:</b> REMOVAL TO CLEAN AIR IS USUALLY SUFFICIENT. IF NOT BREATHING,
GIVE	ARTIFICIAL RESPIRATION. CONTACT A PHYSICIAN.
BEATEN	<b>INGESTION: DO NOT INDUCE VOMITING !</b> GIVE WATER WITH MILK OF MAGNESIA OR

**Section VII - Precautions For Safe Handling And Use**

Steps to Be Taken in Case Material is Released or Spilled COVER CONTAMINATED AREA WITH SODA ASH, SLAKED LIME MIXTURE  
(50:50) MIX AND ADD WATER TO FORM A SLURRY. SCOOP UP SLURRY AND SAVE FOR DISPOSAL.

Waste Disposal Method ADD ABOVE SLURRY OF MIXTURE (AS IS) SLOWLY TO A LARGE VOLUME OF SODA ASH SOLUTION WITH AGITATION. NEUTRALIZE AND FLUSH TO SEWER WITH RUNNING WATER IN A CONCENTRATION PERMITTED BY LOCAL, STATE AND FEDERAL REGULATIONS.

Precautions to be taken in handling and storing PROTECT CONTAINERS AGAINST PHYSICAL DAMAGE. STORE IN COOL, DRY, WELL VENTILATED LOCATION, AWAY FROM AREA WHERE FIRE HAZARDS MAY BE ACUTE. KEEP AWAY FROM OXIDIZERS

AND BASES. PROTECT UNITS FROM DIRECT SUNLIGHT. LOOSEN CONTAINER CAUTIOUSLY.

Other Precautions **VENTILATION:** A SYSTEM OF LOCAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL

THE EMISSIONS OF THE DUST OR VAPOR AT ITS SOURCE PREVENTING DISPERSION INTO THE GENERAL WORK AREA. REFER TO ACGIH DOCUMENT, "INDUSTRIAL VENTILATION, A MANUAL OF RECOMMENDED PRACTICES" FOR DETAILS.

### Section VIII - Control Measures

Respiratory Protection (Specify Type) ORGANIC VAPORS/ ACID GASES (NIOSH APPROVED). HN03 IS AN OXIDIZER AND SHOULD

NOT COME IN CONTACT WITH CARTRIDGES AND CANISTERS THAT CONTAIN OXIDIZABLE MATERIALS, SUCH AS ACTIVATED CHARCOAL.

Ventilation	Local Exhaust X	Special
	Mechanical (General)	Other
Protective Gloves	VITON WITH COTTON LINING	Eye Protection FACE SHIELD OR SPLASH-PROOF GOGGLES. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH THIS PRODUCT.
Other Protective Clothing or Equipment	LAB COAT, COVERALLS, OR APRON.	
Work/Hygienic Practices	HANDLE WITH CARE. WASH AFTER HANDLING.	
<b><u>DOT CLASS: CORROSIVE LIQUID ACIDIC INORGANIC NOS</u></b> <b><u>UN 3264</u></b>		