

**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



IDENTITY (As Used on Label and List)

CHROMIUM ETCHANT TYPE 1020

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.

**Section I**

Manufacturer's Name

TRANSENE COMPANY INC.

Emergency Telephone Number

CHEMTREC 24HR# 1-800-424-9300

Address (Number, Street, City, State, and ZIP Code)

ROUTE ONE

Telephone Number for Information

1-508-948-2501

ROWLEY, MA 01969

Date Prepared

AUGUST 1985 REVISED 1987 AND MAY 1992

Signature of Preparer (optional)

**Section II — Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
CERIC AMMONIUM NITRATE CAS# 16774-21	orl rat LC <sub>50</sub>	244ppm *		16
NITRIC ACID (HNO <sub>3</sub> ) CAS# 7697-37-2		2ppm		6
NON-HAZARDOUS AQUEOUS SOLUTION				
* AS NITRATE				

(THIS PRODUCT CONTAINS NO MORE THAN 6% BY WT. NITRIC ACID WHICH IS CONSIDERED TO BE A TOXIC  
CHEMICAL UNDER TITLE III. EMISSIONS DATA MUST BE SUBMITTED ANNUALLY TO THE EPA FOR COMPANIES  
WHO MANUFACTURE, PROCESS OR OTHERWISE USE THIS PRODUCT IN EXCESS OF CERTAIN QUANTITIES  
ESTABLISHED BY THE EPA. THIS INFORMATION MUST BE INCLUDED IN ALL MSDS THAT ARE COPIED AND  
DISTRIBUTED FOR THIS MATERIAL.)

**Section III — Physical/Chemical Characteristics**

Boiling Point (100°C)	212°F	Specific Gravity (H <sub>2</sub> O = 1) @ 25°C	1.16
Vapor Pressure (mm Hg.)	N/A	Melting Point % VOLATILES:	85 %
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	Similar to water
Solubility in Water	COMPLETE		
Appearance and Odor	ORANGE LIQUID WITH PRACTICALLY NO ODOR.		

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

Flash Point (Method Used)	Flammable Limits	LEL	UEL
NON-FLAMMABLE	N/A	---	---
Extinguishing Media	WATER SPRAY IN CASE OF FIRE CAUSED BY SPILLAGE. DO NOT USE ORGANIC FIRE EXTINGUISHING AGENTS.		
Special Fire Fighting Procedures	WEAR NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS AND APPROPRIATE PROTECTIVE APPAREL		

Unusual Fire and Explosion Hazards SPILLAGE MAY CAUSE FIRE OR LIBERATE DANGEROUS GAS. INCREASES  
FLAMMABILITY OF COMBUSTIBLE ORGANICS AND DEADLY OXIDIZABLE MATERIALS. MAY CAUSE IGNITION.

Reproduce (optional)

OSHA 101-106-100-100

**Section V — Reactivity Data**

Stability	Unstable		Conditions to Avoid
	Stable	X	ORGANIC MATERIALS, STRONG OXIDANTS, HEAT

Incompatibility (Materials to Avoid) METALLIC POWERS, CARBIDES, HYDROGEN SULFIDE AND EASILY OXIDIZED MATERIALS.

Hazardous Decomposition or Byproducts OXIDES OF NITROGEN, STRONG BASES, AND METALS

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	NOT APPLICABLE, EXCESSIVE HEAT

**Section VI — Health Hazard Data**

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	YES	YES	YES

Health Hazards (Acute and Chronic) MAY CAUSE IRRITATION TO LUNGS AND RESPIRATORY SYSTEM.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
NO	NO	NO	YES

Signs and Symptoms of Exposure MAY CAUSE IRRITATION AND BURNS.

Medical Conditions MAY CAUSE IRRITATION AND BURNS. VAPOR OR SPRAYS CAN BE HAZARDOUS TO Generally Aggravated by Exposure

THE LUNGS AND RESPIRATORY SYSTEM. MATERIAL IS CORROSIVE TO EYES, SKIN, AND MUCOUS MEMBRANES. Emergency and First Aid Procedures EYE CONTACT: IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MIN. GET MEDICAL ATTENTION. SKIN: REMOVE CONTAMINATED CLOTHING AND SHOES. WASH EXPOSED AREAS WITH SOAP AND WATER. GET MEDICAL ATTENTION. INHALATION: REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. INGESTION: DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION !!!

**Section VII — Precautions for Safe Handling and Use**

Steps to Be Taken in Case Material is Released or Spilled ISOLATE OR ENCLOSE THE AREA OF SPILL OR LEAK. NEUTRALIZE WITH CALCIUM CARBONATE. WASH WITH EXCESS WATER. PICK UP WITH ABSORBENT MATERIAL (SAND OR VERMICULITE) AND DISPOSE IN A RCRA APPROVED WASTE FACILITY.

Waste Disposal Method CLEAN UP PERSONNEL SHOULD WEAR PROTECTIVE CLOTHING AND RESPIRATORY EQUIPMENT SUITABLE FOR TOXIC FUMES. DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE OR FEDERAL ENVIRONMENTAL REGULATIONS

Precautions to Be Taken in Handling and Storing STORE IN WELL VENTILATED AREA. ROOM TEMPERATURE STORAGE-SEALED BOTTLES.

Other Precautions STORE AWAY FROM INCOMPATIBLE MATERIALS. PROTECT FROM PHYSICAL DAMAGE AND DIRECT SUNLIGHT.

**Section VIII — Control Measures**

Respiratory Protection (Specify Type)

Ventilation	IF TLV IS EXCEEDED, WEAR A NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS.		
	Local Exhaust		Special
	Mechanical (General)	EXPOSURE TO LIMITS BELOW AIRBORNE EXPOSURE LIMITS.	Other

Protective Gloves RUBBER Eye Protection CHEMICAL SAFETY GOGGLES OR FACE SHEILD

Other Protective Clothing or Equipment PROTECTIVE CLOTHING. RUBBER APRON/USE APPROPRIATE INDUSTRIAL PRACTICES FOR HANDLING ACIDS.

Work/Hygienic Practices USE APPROPRIATE INDUSTRIAL PRACTICES FOR HANDLING ACIDS.



# Material Safety Data

TRANSENE COMPANY, INC.

ROUTE ONE, ROWLEY, MASS. 01969  
Tel. (617) 948-2901, 948-2811

## Addendum to Material Safety Data Sheet

### REGULATORY STATUS

This Addendum Must Not Be

Detached from the MSDS

Identifies SARA 313 substances

Any copying or redistribution of the MSDS

must include a copy of this addendum

Hazard Categories for SARA  
Section 311/312 Reporting  
Acute Chronic Fire Pressure Reactive  
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Product or Components of Product:	SARA EHS Sec. 302		SARA Section 313 Chemicals		CERCLA Sec. 103	RCRA
	RQ (lbs.)	TPO (lbs.)	Name List	Chemical Category	RQ (lbs.)	Sec. 261.33
Nitric Acid (7697-37-2)	No	No	Yes	No	No	No

#### Applicable Products:

Reagent Semiconductor Etchants (RSE100-RSE1155),  
Nitric Acid 70%, Wright Etchant, TFB, TFD, TFC,  
TFN/1020, Chromium Mask Etchant

SARA Section 302 EHS RQ: Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPO: 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: 02-17-87 Supersedes 04-30-86

#### ADDITIONAL PRECAUTIONS

MAY CAUSE BURNS TO EYES, SKIN AND MUCOUS MEMBRANES. AVOID CONTACT AND AVOID BREATHING SPRAYS OR MISTS. PROTECT CONTAINER AGAINST PHYSICAL DAMAGE. WASH THOROUGHLY AFTER HANDLING. KEEP OUT OF SUN AND AWAY FROM HEAT. LOOSEN CLOSURE CAREFULLY. NEVER USE PRESSURE TO EMPTY. REPLACE CLOSURE AFTER EACH WITHDRAWAL. MAKE SURE CLOSURE IS SECURED. STORE IN WELL VENTILATED AREA. KEEP AWAY FROM COMBUSTIBLE MATERIALS.