

MATERIAL SAFETY DATA SHEET

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

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MATERIAL NAME: NICKEL ETCHANT TFB

Reviewed: July 2006

TRADE NAME: Nickel Etch TFB

CHEMICAL NAME: Nitric acid Aqueous solution

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Nitric Acid	CAS# 7697-37-2	15-20%	toxicity 2ppm (TLV)
Potassium Perfluoroalkyl Sulfonate	CAS# 2795-39-3	<1%	0.1 mg/m ³
Water	CAS# 7732-18-5	Balance	

SECTION 3. HEALTH HAZARD IDENTIFICATION

Effects of overexposure: Oxides of nitrogen or nitric acid are highly irritant to the mucous membranes of the eyes, respiratory tract and the skin.

Eye Contact: Severe burning of eye tissue.

Skin Contact: Irritation and burning of the skin

Inhalation: Causes burning and irritation of respiratory tract

Ingestion: Ingestion of large quantities may be fatal. Severe burning of gastrointestinal tract.

SECTION 4. FIRST AID MEASURES:

Eye Contact: Irritant to naked eye; in case of contact flush eyes well for 15 minutes. Obtain medical attention.

Skin Contact: Irritant to exposed skin, flush skin well with water for 15 minutes, remove affected clothing, get medical attention.

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration. Seek medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Flash point and method	Autoignition Temp.	Flammability Limits in Air	Lower	Upper
Non-flammable	N/A	N/A	N/A	N/A

Extinguishing media: Water spray or fog, carbon dioxide, and dry chemical.

Special fire fighting procedures: Water may cause frothing/wear chemically retardant gear and NIOSH approved self-contained breathing apparatus. Thermal decomposition produces toxic (NOx) fumes. Moderate hazard by chemical reaction with reducing agents/ wood and other organics may ignite spontaneously or have increased flammability.

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPILLS, LEAKS: Cover the contaminated areas with soda ash and slaked lime mixture (50-50). Mix and add water if necessary to form slurry. Scoop up gross quantities. Place in DOT approved container.

SECTION 7. HANDLING AND STORAGE

Storage & Handling information

Store below 80 degrees Fahrenheit. Store in cool, dry place. Do not store near incompatible products or open flame. Store away from direct sunlight.

SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

Respiratory protection: NIOSH approved organic vapor respirators where adequate ventilation is not present.

Ventilation: Where adequate ventilation is not available, use NIOSH approved vapor respirator with dust, fume and mist filters. Local ventilation through fume hoods or laminar flow stations is also preferred. Keep fumes away from strong bases or cyanide salts.

Protective gloves: Skin contact should be minimized through use of rubber gloves

Other protective equipment: Steel-tipped shoes, eye wash station, chemical safety shower, chemical retardant clothing.

Eye protection: Safety goggles, face shield

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling point at 1atm, deg C>200F	Specific, 20/4C	1.25
Vapor pressure at 15C, mmHg>1	Evap. Rate (BuAc=1)	N/A
Vapor density (air=1) N/A	Volatiles, %	N/A
Water solubility at 20 °C complete	Molecular weight	N/A

Appearance and odor: Clear, colorless liquid with an acrid odor

SECTION 10: STABILITY AND REACTIVITY

Stability stable X conditions to avoid: excess heat, cyanide salts bases
Unstable

Incompatible with; Strong reducing agents, water, formic acid.

Hazardous decomposition products: Oxides of nitrogen

NFPA CODES
Health - 3 Flammability - 0 Reactivity - 1

SECTION 11: TOXICOLOGICAL INFORMATION

No information found for product.

SECTION 12: ECOLOGICAL INFORMATION

No information found for product.

SECTION 13. DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose of in accordance with all federal state and local regulations. Aqueous waste treatment if allowed. If not, contact professional disposal agency.

SECTION 14. TRANSPORTATION INFORMATION

DOT CLASS: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
 (NITRIC ACID & FLUOROCARBON SURFACTANT
 AQUEOUS SOLUTION) UN 3264

SECTION 15. REGULATORY INFORMATION

Health: 3
 Reactivity: 2
 Flammability: 0

SECTION 16. OTHER INFORMATION

Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, Transene extends no warranties, makes no representations and assumes no responsibility as to accuracy or suitability of such information for application to purchaser's intended purpose of for consequences of ifs use.

**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
NITRIC ACID, 70% (7697-37-2)	1000	1000	Yes	No	1000	No

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 02-17-87 Supersedes 04-30-86

NITRIC ACID, 70%