

Zhihong Zhang 01/15/2004

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SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: NICKEL ETCHANT TFB

Reviewed: M.E. Hecht 04/03

TRADE NAME: Nickel Etch TFB

CHEMICAL NAME: Nitric acid Aqueous solution

SECTION II. INGREDIENTS AND HAZRDS

Nitric Acid	CAS# 7697-37-2	10-20%	toxicity 2ppm (TLV)
Potassium Perfluoroalkyl Sulfonate	CAS# 2795-39-3	<1%	0.1 mg/M3
Water	CAS# 7732-18-5	Balance	

SECTION III: PHYSICAL DATA

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 20C complete	Molecular weight	N/A

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

SECTION IV: FIRE AND EXPLOSION DATA

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 V: REACTIVITY DATA

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

SECTION VI. HEALTH HAZARD INFORMATION

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

FIRST AID:

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

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

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

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.

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

SECTION VIII. SPECIAL PROTECTION INFORMATION

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 IX. SPECIAL PRECAUTIONS AND COMMENTS

Storage & Handling information

Store below 60 degrees Fahrenheit. Store in cool, dry place. Do not store near incompatible products or open flame. Store away from direct sunlight.

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

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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%