

MATERIAL SAFETY DATA SHEET

ETCHING SOLUTION




1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: ETCHING SOLUTION

PRODUCT NUMBER: 2501

UPC NUMBER:

PREPARED BY: Mike Rooney

DATE PREPARED: 12/2/1999

LAST REVISION: 3/19/1996

DOT Proper Shipping Name: Corrosive liquid, toxic, n.o.s.(hydrogen fluoride, ammonium bifluoride)

UN NUMBER: 2922

PACKING GROUP: II

GUIDE NUMBER: 154

DOT CLASS: 8 (corrosive)

SYNONYMS: Acidic solution

SECTION II - HAZARDOUS INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV	NOTE
Hydrogen fluoride	7664-39-3	<10	3 ppm (as F)	3 ppm (as F)	
Ammonium difluoride	1314-49-7	<20	2.5 mg/m3 (mist as F)	2.5 mg/m3 (mist as F)	

SECTION III - PHYSICAL CHARACTERISTICS

BOILING POINT: 150-230

VAPOR PRESSURE: NDA

EVAPORATION: Slower than ether

POUNDS PER GALLON: N/A

SPECIFIC GRAVITY: 1.03-1.1

MELTING POINT: NDA

VAPOR DENSITY: Heavier Than Air

PH: >12

SOLUBILITY IN WATER: Infinite in water

APPEARANCE AND ODOR: Clear, colorless liquid with sharp, acrid odor.

SECTION IV - FIRE/EXPLOSION

FLASH POINT: None

FLASH POINT METHOD USED: N/A

LEL: 0

UEL: 0

EXTINGUISHING MEDIA:

Suitable for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:

Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece in positive pressure mode. Move containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Material can generate explosive hydrogen gas on contact with certain metals and react violently with water.

SECTION V - REACTIVITY DATA**STABLE:**

Stable

INCOMPATIBILITY:

Alkalies, glass and ceramics

HAZARDOUS DECOMPOSITION OR BY PRODUCTS:

Fluorides and hydrogen gas on contact with certain metals; These fumes can be highly corrosive.

HAZARDOUS POLYMERIZATION:

Will Not Occur

SECTION VI - HEALTH HAZARD DATA**ACUTE HEALTH EFFECTS**

- EYE CONTACT:** Corrosive to the eyes and may cause severe damage including conjunctivitis and corneal burns.
- INHALATION:** Hydrofluoric acid is extremely irritating and corrosive to the skin and mucous membranes. Inhalation of the vapor may cause ulcers of the upper respiratory tract. Concentrations at 50 to 200 ppm are dangerous.
- INGESTION:** Corrosive and may cause severe and permanent damage to mouth, throat, and stomach.
- SKIN CONTACT:** Substance is corrosive. Causes severe skin burns which are slow in healing. The subcutaneous tissue may be affected, becoming blanched and bloodless. Gangrene of the affected area may follow.

SIGNS AND SYMPTOMS OF EXPOSURE:

As noted above including; severe skin burns with ulceration, pain behind the breastbone, cough, spitting blood, dyspnea, difficulty breathing, bronchopneumonia, cyanosis, shock, jaundice, muscle spasms.

AGGRAVATED MEDICAL CONDITIONS:

Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. Impaired function from preexisting disorders may be aggravated by exposure to this product.

SUPPLEMENTAL HEALTH INFORMATION:

None identified

EMERGENCY FIRST AID PROCEDURES

- EYE CONTACT:** If even minute quantities of this material enter the eyes, immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. A physician, preferably an eye specialist should be called at once.
- INHALATION:** Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately. Victim must not be allowed to return home or back to work until examined and discharged by a physician.
- INGESTION:** If swallowed, do not induce vomiting. Give victim large amounts of water to drink. Call a physician immediately.
- SKIN CONTACT:** Flush skin immediately with plenty of water. Contaminated clothing should be removed as quickly as possible. After all material has been flushed away, calcium gluconate gel (2.5%) should be rubbed in continuously until pain subsides. Seek emergency medical attention.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Clear area of unauthorized personnel. Wear protective equipment as given in Section 8. Dike around large spills to prevent spreading. Absorb small spills with inert material (clay, sand).

WASTE DISPOSAL METHOD:

The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

A large amount of heat may be generated upon contact with water. This product will attack glass, concrete and certain metals. It must be shipped and stored in proper containers (teflon or approved plastics).

OTHER PRECAUTIONS:

Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION:

If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-supplying respir. or an air-purifying respir. for organic vapors.

VENTILATION:

Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PROTECTIVE GLOVES:

Heavy duty PVC gauntlet gloves

EYE PROTECTION:

Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required.

WORK / HYGENIC PRACTICES:

Use good personal hygiene when handling this product. Wash hands after use, before smoking, or using the toilet.

The information contained herein is based on the data available to us and is believed to be accurate. However, Tarr, Incorporated makes no warranty, expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Tarr, Inc. assumes no responsibility for injuries from the use of the product described herein.