Safety Data Sheet

Poly Etch 4

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Poly Etch 4
Brand	High Purity Product

1.2 Other means of identification

Poly Etchant

1.3 Recommended use of the chemical and restrictions on use

Industrial, Manufacturing, or Laboratory use only.

1.4 Supplier's details

Name	High Purity Products
Address	14546 N. Lombard Street Portland OR 97203 United States of America
Telephone	503-227-1616
email	help.desk@highpp.com

1.5 Emergency phone number

CHEMTREC: 1-800-424-9300

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: OSHA (29 CFR 1910.1200)

- Corrosive to metals, Cat. 1
- Acute toxicity, inhalation, Cat. 1
- Acute toxicity, dermal, Cat. 3
- Acute toxicity, oral, Cat. 4
- Eye damage/irritation, Cat. 1

- Skin corrosion/irritation, Cat. 1A

2.2 GHS label elements, including precautionary statements

Pictogram

Signal word **Danger**

Hazard statement(s)

H290	May be corrosive to metals
H302	Harmful if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H330	Fatal if inhaled

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/...
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310	Immediately call POISON CENTER
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P405	Store locked up.

SECTION 3: Composition/information on ingredients

3.1 Mixture

Components	Cas Number	Concentration
Nitric Acid	7697-37-2	50 - 60 % (weight)
Hydrofluoric Acid	7664-39-3	5 - 10% (weight)
Water	7732-18-5	30 – 45 % (weight)

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled — If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact	Take off contaminated clothing and shoes immediately. Rinse thoroughly with plenty of water for at least 15 minutes. Apply calcium gluconate gel (2.5%) into the affected area. Immediately take the patient to the hospital.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital. Keep the eyelids apart and away from the eyeballs during irrigation. Do not use oily drops or ointment or HF skin burn treatments on the eyes.
If swallowed	Call a physician or poison control center immediately. Rinse mouth. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media
Product is not flammable. Use appropriate media for adjacent fire.
Cool containers with water, keep away from common metals.

5.2 Specific hazards arising from the chemical
Emits toxic fumes (nitrogen oxides, hydrogen fluoride gas) under fire conditions. Material may react with metals to produce flammable hydrogen gas. (See also Stability and Reactivity section)

5.3 Special protective actions for fire-fighters
Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. Material can react violently with water (spattering and misting) and react with metals to produce flammable hydrogen gas.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Nitric acid

REL – TWA 2 ppm, (ST) 4 ppm (NIOSH)

2. Hydrofluoric acid
REL - TWA 3 ppm (NIOSH)

8.2 Appropriate engineering controls
Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Pictograms

Eye/face protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH.

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection
SCBA Full Face Respirator advised for Nitric Acid.

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid
Appearance	Clear
Color	Colorless
Odor	Acrid, suffocating odor
Odor threshold	No data available.
pH	<1
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flash point	No data available.
Evaporation rate	No data available.
Flammability	No data available.
Vapor pressure	16.636 mmHg at 20°C (Est)
Relative vapor density	No data available.
Density and/or relative density	1.356
Solubility	No data available.
Partition coefficient n-octanol/water (log value)	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Kinematic viscosity	No data available.
Explosive properties	No data available.

Particle characteristics
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
None under normal use conditions.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Corrosive to metals. Contact with metals may evolve flammable hydrogen gas.

10.4 Conditions to avoid
Exposure to moisture. Excessive heat.

10.5 Incompatible materials
Moisture, bases, organic material, metals, glass, ceramics, aluminum, stainless steel, carbonates, cyanides, sulfides. May react violently with acetic anhydride, ammonium hydroxide, arsenic trioxide, calcium oxide, potassium permanganate, sodium, sodium hydroxide, sulfuric acid, flammable liquids, strong bases.

10.6 Hazardous decomposition products
Nitrogen oxides, hydrogen, Hydrogen fluoride

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Nitric acid:
LC50 - Inhalation – rat - 244 ppm 30M; Investigated as a mutagen, reproductive effector.

Hydrofluoric Acid:
LC50 - Inhalation – ATE Value - 1276 ppm 1hr
LD50 – Oral – ATE Value – 5-50 mg/kg
LD50 – Dermal – ATE Value - <50 mg/kg

Skin corrosion/irritation
Causes severe skin burns, and can penetrates the skin.

Serious eye damage/irritation
Risk of serious damage to eyes.

Respiratory or skin sensitization
Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Germ cell mutagenicity
May cause genetic effects based on animal data.

Carcinogenicity
Not listed as carcinogenic

Reproductive toxicity
May cause fetal toxicity based on animal data.

STOT-single exposure
No data available.

STOT-repeated exposure
No data available.

SECTION 12: Ecological information

Toxicity
Aquatic fish; EC50 (48 hours): 270 mg/l (Hydrofluoric Acid)
Aquatic fish; LC50 (96 hours): 72 mg/l (Nitric Acid)

Persistence and degradability
Soluble in water Persistence is unlikely based on information available.

Bioaccumulative potential
No data available.

Mobility in soil
Will likely be mobile in the environment due to its water solubility.

SECTION 13: Disposal considerations

Product disposal
Waste material must be disposed of in accordance with the national and local regulations.
Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.
EPA Waste Code: **D002**

SECTION 14: Transport information

DOT (US)
UN Number: UN2922
Class: 8 (6.1)
Packing Group: II
Proper Shipping Name: Corrosive liquids, toxic, n.o.s., (Nitric Acid, Hydrofluoric Acid)
Reportable quantity (RQ): 1,400 lbs

IMDG
UN Number: UN2922
Class: 8 (6.1)
Packing Group: II
Proper Shipping Name: Corrosive liquids, toxic, n.o.s., (Nitric Acid, Hydrofluoric Acid)

IATA
UN Number: UN2922
Class: 8 (6.1)
Packing Group: II
Proper Shipping Name: Corrosive liquids, toxic, n.o.s., (Nitric Acid, Hydrofluoric Acid)

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Massachusetts Right To Know Components
Chemical name: Hydrofluoric acid
CAS number: 7664-39-3
Chemical name: Nitric acid
CAS number: 7697-37-2

New Jersey Right To Know Components
Common name: HYDROGEN FLUORIDE
CAS number: 7664-39-3
Chemical name: Nitric acid
CAS number: 7697-37-2

Pennsylvania Right To Know Components
Chemical name: Hydrofluoric acid
CAS number: 7664-39-3
Chemical name: Nitric acid
CAS number: 7697-37-2

Canadian Domestic Substances List (DSL)
Chemical name: Hydrofluoric acid
CAS: 7664-39-3
Chemical name: Nitric acid
CAS number: 7697-37-2

EPCRA Section 302 (EHS) TPQ Extremely Hazardous Substances
Nitric Acid: 1,000 lbs
Hydrofluoric Acid: 100 lbs

EPCRA Section 304 EHS RQ Reportable Quantities
Nitric Acid: 1,000 lbs
Hydrofluoric Acid: 100 lbs

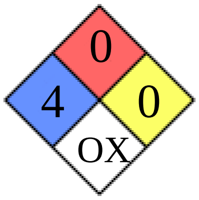
CERCLA RQ Hazardous Substances
Nitric Acid: 1,000 lbs
Hydrofluoric Acid: 100 lbs

EPCRA Section 313 Toxic chemicals
Nitric Acid
Hydrofluoric Acid

HMIS Rating

Poly Etch 4	
HEALTH	4
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

NFPA Rating



SECTION 16: Other information

Disclaimer:

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