SAFETY DATA SHEET

Hydrofluoric Acid 0.5% (100:1)

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Hydrofluoric Acid 0.5% (100:1)

1.2 Other means of identification

Hydrofluoric acid solution; Fluohydric acid; Fluoric acid

1.3 Recommended use of the chemical and restrictions on use

For Laboratory, Research or Manufacturing Use.

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

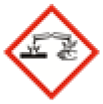
2.1 Classification of the substance or mixture

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

- Corrosive to metals, Cat. 1
- 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
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

Precautionary statement(s)

P262	Do not get in eyes, on skin, or on clothing.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	In case of inadequate ventilation wear respiratory protection.
P301+P310	IF SWALLOWED: Immediately call POISON CENTER
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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 a POISON CENTER
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

SECTION 3: Composition/information on ingredients

3.1 Mixture

Component	CAS #	Concentration
Hydrofluoric acid	7664-39-3	0.1 - 1 % (weight)
Water	7732-18-5	99 – 99.9 % (weight)

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
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
Use extinguishing media appropriate for surrounding fire.

5.2 Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed. Product is highly caustic. Product is acidic. Wear appropriate protective gear if spilled during firefighting.

5.3 Special protective actions for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary. Emits toxic fumes (hydrogen fluoride) under fire conditions.

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
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Neutralize with lime or soda ash. Neutralize spill area and washings with dilute acetic acid. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dike far ahead of larger spill for later recovery and disposal.

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

Hydrogen fluoride (7664-39-3)
TWA 3 ppm (2.5 mg/m3) (NIOSH)
C 6 ppm (5 mg/m3) [15-minute] (NIOSH)

8.2 Appropriate engineering controls
Use ventilation adequate to keep exposures (airborne levels of vapor) below recommended exposure limits.

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

Pictograms

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

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
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid
Appearance	Clear Liquid
Color	Colorless
Odor	Mild pungent
Odor threshold	No data available.
pH	1.9
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flash point	Not Flammable
Evaporation rate	No data available.
Flammability	Not Flammable
Vapor pressure	19.63 mmHg at 20°C (est.)
Relative vapor density	No data available.
Density and/or relative density	1.0013 g/cm^3
Solubility	Miscible
Auto-ignition temperature	Not Flammable
Decomposition temperature	No data available.
Kinematic viscosity	No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
Reacts violently with strong alkaline substances.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Metals, Cyanides, Sulfides, Bases, Fluorine

10.4 Conditions to avoid
Heat, sparks, flames. Contact with incompatible materials.

10.5 Incompatible materials
Strong oxidizing agents. Acids. Strong bases. Ammonia. Organic compounds. Glass. Cyanides. Fluorine. Metals. May attack some plastics, rubber and coatings

10.6 Hazardous decomposition products
Gaseous hydrogen fluoride

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
LD50 Inhalation - guinea pig – 4327 ppm/15 M
LD50 Inhalation - mouse – 342 ppm/ 1 H

Skin corrosion/irritation
Causes severe burns by all exposure routes

Serious eye damage/irritation
Burns, pain, watering eyes

Inhalation
Burning, choking, coughing, wheezing, laryngitis, shortness of breath, headache or nausea.

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

Carcinogenicity
Not listed by IARC NTP ACGIH OSHA

Reproductive toxicity
Reproductive Effects – Inhalation - Rat – 4980 µg/m3/ 4H - Effects on embryo or fetus: Fetal death

STOT-single exposure
Blood. Cardiovascular system, Respiratory system, Skin

STOT-repeated exposure
Bones, Endocrine system, Teeth

SECTION 12: Ecological information

Toxicity
Aquatic fish; EC50 (48 hours): 270 mg/l
Leuciscus idus; LC50 (48 hours): 660mg/L

Persistence and degradability
No data available.

Bioaccumulative potential
Inherently biodegradable.

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: **U134**

SECTION 14: Transport information

DOT (US)
UN Number: UN3264
Class: 8
Packing Group: III
Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S., (Hydrofluoric Acid)
Reportable quantity (RQ): 20,000 lbs
Marine pollutant: No
Poison inhalation hazard: No

IMDG
UN Number: UN3264
Class: 8
Packing Group: III
Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S., (Hydrofluoric Acid)

IATA
UN Number: UN3264
Class: 8
Packing Group: III
Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S., (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

New Jersey Right To Know Components
Common name: HYDROGEN FLUORIDE
CAS number: 7664-39-3

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

Canadian Domestic Substances List (DSL)
Chemical name: Hydrofluoric acid
CAS: 7664-39-3

EPCRA Section 302 (EHS) TPQ Extremely Hazardous Substances
Hydrofluoric acid: 100 lbs

EPCRA Section 304 EHS RQ Reportable Quantities
Hydrofluoric acid: 100 lbs

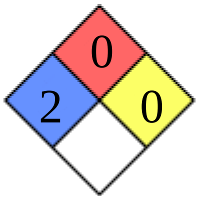
CERCLA RQ Hazardous Substances
Hydrofluoric acid: 100 lbs

EPCRA Section 313 Toxic chemicals
Hydrofluoric acid

HMIS Rating

Hydrofluoric Acid 0.5% (100:1)	
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

NFPA Rating



SECTION 16: Other information

16.1 Further information/disclaimer

Disclaimer:

****

High Purity Products provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. HIGH PURITY PRODUCTS MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, HIGH PURITY PRODUCTS WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

****