

## SAFETY DATA SHEET

Creation Date 06-Jul-2010

Revision Date 09-Jan-2020

Revision Number 6

### 1. Identification

**Product Name** HYDROFLUORIC ACID

**Cat No. :** A463-1; A463-2; A463-250; A463-500

**Synonyms** Hydrofluoric acid solution; Fluohydric acid; Fluoric acid

**Recommended Use** Laboratory chemicals.

**Uses advised against** Food, drug, pesticide or biocidal product use.

**Details of the supplier of the safety data sheet**

**Company**

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

**Emergency Telephone Number**

CHEMTREC®, Inside the USA:  
800-424-9300  
CHEMTREC®, Outside the USA:  
001-703-527-3887

### 2. Hazard(s) identification

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals	Category 1
Acute oral toxicity	Category 2
Acute dermal toxicity	Category 1
Acute Inhalation Toxicity - Vapors	Category 2
Skin Corrosion/Irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

**Label Elements**

**Signal Word**

Danger

**Hazard Statements**

May be corrosive to metals  
Causes severe skin burns and eye damage  
May cause respiratory irritation  
Fatal if swallowed, in contact with skin or if inhaled

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Do not get in eyes, on skin, or on clothing  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Do not breathe dust/fume/gas/mist/vapors/spray  
 Use only outdoors or in a well-ventilated area  
 Wear respiratory protection  
 Keep only in original container

**Response**

Immediately call a POISON CENTER or doctor/physician

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

**Skin**

Wash contaminated clothing before reuse  
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Ingestion**

Rinse mouth  
 Do NOT induce vomiting

**Spills**

Absorb spillage to prevent material damage

**Storage**

Store locked up  
 Store in a well-ventilated place. Keep container tightly closed  
 Store in corrosive resistant polypropylene container with a resistant inliner  
 Store in a dry place

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Hydrogen fluoride	7664-39-3	40-60
Water	7732-18-5	40-60

### 4. First-aid measures

**General Advice**

Immediate and specialised first aid and medical treatment is required. Speed is of the essence. Flush with plenty of water immediately. Continue flushing during transport to hospital or medical center.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical

advice.

<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required. Dermal burns may be treated with calcium gluconate gel or slurry in water or glycerine. This compound binds the active fluorides in an insoluble form and limits burn extension and pain. Soaking or immersion with iced 0.13% Benzalkonium chloride solution may be used for skin burns and should be continued until the pain is relieved. Do not use in eyes.
<b>Inhalation</b>	If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. Immediate medical attention is required. A nebulized solution of 2.5% Calcium gluconate may be administered with Oxygen by inhalation.
<b>Ingestion</b>	Do NOT induce vomiting. Call a physician or poison control center immediately.
<b>Most important symptoms and effects</b>	Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation
<b>Notes to Physician</b>	Treat symptomatically

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	No information available
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

### Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

### Hazardous Combustion Products

Gaseous hydrogen fluoride (HF).

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

<b>Health</b> 4	<b>Flammability</b> 0	<b>Instability</b> 1	<b>Physical hazards</b> N/A
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## 6. Accidental release measures

<b>Personal Precautions</b>	Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
<b>Environmental Precautions</b>	Should not be released into the environment.
<b>Methods for Containment and Clean</b>	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Up

**7. Handling and storage**

**Handling**                                      Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest.

**Storage**                                        Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Do not store in metal containers.

**8. Exposure controls / personal protection**

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Hydrogen fluoride	TWA: 0.5 ppm TWA: 2.5 mg/m <sup>3</sup> Ceiling: 2 ppm Skin	(Vacated) TWA: 3 ppm (Vacated) TWA: 2.5 mg/m <sup>3</sup> (Vacated) STEL: 6 ppm TWA: 3 ppm	IDLH: 30 ppm IDLH: 250 mg/m <sup>3</sup> TWA: 3 ppm TWA: 2.5 mg/m <sup>3</sup> Ceiling: 6 ppm Ceiling: 5 mg/m <sup>3</sup>	TWA: 0.5 ppm TWA: 2.5 mg/m <sup>3</sup> Ceiling: 2 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists  
 OSHA - Occupational Safety and Health Administration  
 NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures**                      Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment**

- Eye/face Protection**                      Tight sealing safety goggles. Face protection shield.
- Skin and body protection**                Wear appropriate protective gloves and clothing to prevent skin exposure.
- Respiratory Protection**                  Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
- Hygiene Measures**                         Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and chemical properties**

<b>Physical State</b>	Liquid
<b>Appearance</b>	Colorless
<b>Odor</b>	pungent
<b>Odor Threshold</b>	No information available
<b>pH</b>	< 1.0
<b>Melting Point/Range</b>	-35 °C / -31 °F
<b>Boiling Point/Range</b>	105 °C / 221 °F
<b>Flash Point</b>	No information available
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid,gas)</b>	Not applicable
<b>Flammability or explosive limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Vapor Pressure</b>	No information available

Vapor Density	2.21
Specific Gravity	1.15-1.20
Solubility	miscible
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	H F
Molecular Weight	20

## 10. Stability and reactivity

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat.
<b>Incompatible Materials</b>	Metals, Cyanides, Sulfides, Bases, Fluorine
<b>Hazardous Decomposition Products</b>	Gaseous hydrogen fluoride (HF)
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	Corrosive to metals. Contact with metals may evolve flammable hydrogen gas.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

<b>Oral LD50</b>	Category 2. ATE = 5 - 50 mg/kg.
<b>Dermal LD50</b>	Category 1. ATE < 50 mg/kg.
<b>Vapor LC50</b>	Category 2. ATE = 0.5 - 2 mg/l.

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydrogen fluoride	Not listed	Not listed	LC50 = 0.79 mg/L ( Rat ) 1 h
Water	-	-	-

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Irritation</b>	Causes severe burns by all exposure routes
<b>Sensitization</b>	No information available
<b>Carcinogenicity</b>	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Hydrogen fluoride	7664-39-3	Not listed				
Water	7732-18-5	Not listed				

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Respiratory system

<b>STOT - repeated exposure</b>	None known
<b>Aspiration hazard</b>	No information available
<b>Symptoms / effects, both acute and delayed</b>	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation
<b>Endocrine Disruptor Information</b>	No information available
<b>Other Adverse Effects</b>	The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**

Do not empty into drains. .

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Hydrogen fluoride	Not listed	LC50 = 660 mg/L, 48h (Leuciscus idus)	Not listed	EC50 = 270 mg/L, 48h (Daphnia species)

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available. Miscible with water

**Bioaccumulation/ Accumulation** No information available.

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

Component	log Pow
Hydrogen fluoride	-1.4

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Hydrogen fluoride - 7664-39-3	U134	-

## 14. Transport information

**DOT**

<b>UN-No</b>	UN1790
<b>Proper Shipping Name</b>	HYDROFLUORIC ACID
<b>Hazard Class</b>	8
<b>Subsidiary Hazard Class</b>	6.1
<b>Packing Group</b>	II

**TDG**

<b>UN-No</b>	UN1790
<b>Proper Shipping Name</b>	HYDROFLUORIC ACID
<b>Hazard Class</b>	8
<b>Subsidiary Hazard Class</b>	6.1
<b>Packing Group</b>	II

**IATA**

<b>UN-No</b>	UN1790
<b>Proper Shipping Name</b>	HYDROFLUORIC ACID
<b>Hazard Class</b>	8
<b>Subsidiary Hazard Class</b>	6.1
<b>Packing Group</b>	II

**IMDG/IMO**

<b>UN-No</b>	UN1790
<b>Proper Shipping Name</b>	HYDROFLUORIC ACID

Hazard Class 8  
 Subsidiary Hazard Class 6.1  
 Packing Group II

## 15. Regulatory information

### United States of America Inventory

Component	CAS-No	TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
Hydrogen fluoride	7664-39-3	X	ACTIVE	-
Water	7732-18-5	X	ACTIVE	-

#### Legend:

TSCA - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

### International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	AICS	IECSC	KECL
Hydrogen fluoride	7664-39-3	X	-	231-634-8	X	X	X	X	KE-20198
Water	7732-18-5	X	-	231-791-2	X	X	X	X	KE-35400

### U.S. Federal Regulations

#### SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Hydrogen fluoride	7664-39-3	40-60	1.0

SARA 311/312 Hazard Categories See section 2 for more information

#### CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Hydrogen fluoride	X	100 lb	-	-

#### Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Hydrogen fluoride	X		-

OSHA - Occupational Safety and Health Administration Not applicable

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Hydrogen fluoride	-	TQ: 1000 lb

**CERCLA** This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Hydrogen fluoride	100 lb	100 lb

California Proposition 65 This product does not contain any Proposition 65 chemicals

### U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Hydrogen fluoride	X	X	X	X	X
Water	-	-	X	-	-

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
 DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product contains the following DHS chemicals:

**Legend** - STQs = Screening Threshold Quantities, APA = A placarded amount

Component	DHS Chemical Facility Anti-Terrorism Standard
Hydrogen fluoride	Release STQs - 1000lb (concentration >=50%) Release STQs - 1000lb (anhydrous) Theft STQs - 45lb (anhydrous)

**Other International Regulations****Mexico - Grade** No information available

## 16. Other information

**Prepared By** Regulatory Affairs  
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**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**