

Revision date: 05.2015 Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:	Hydrofluoric acid, BDH Aristar [®] Plus Hydrofluoric acid, BDH Aristar [®] Ultra
Product No.:	87003-257 87003-221, 87003-222, 87003-223
Other means of identification:	EU Index # 009-003-00-1

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For laboratory use only. Not for drug, food, or household use.

1.3. Details of the supplier of the safety data sheet

Manufactured for	VWR International, LLC Radnor Corporate Center 100 Matsonford Road Radnor, PA 19087-8660	VWR International Co 2360 Argentia Road Mississauga, ON L5N 5Z7 CANADA
Telephone	610.386.1700	800.932.5000

1.4. Emergency Telephone number

CHEMTREC	800.424.9300
CANUTEC	613.996.6666

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) and WHMIS HPR

For the full text of the H-Statement(s) and P-Statement(s) mentioned in this Section, see Section 16.

Hazard classes and hazard categories	Hazard statements
Acute toxicity, oral, category 2	H300
Acute toxicity, dermal, category 1	H310
Acute toxicity, inhalation, category 2	H330
Skin corrosion, category 1A	H314
Corrosive to metals, category 1	H290

2.2. GHS Label elements, including precautionary statements

Pictograms:



Signal word: Danger

Hazard statements	
H300 + H310 + H330	Fatal if swallowed, in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.

Precautionary statements	
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
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 or doctor.
P501	Dispose of contents/containers in accordance with local, state and federal regulations.

2.4. Hazards not otherwise classified (HNOC) or not covered by GHS or WHIMS

None known.

SECTION 3: Composition / information on ingredients

3.1. Hazard components

Chemical name	Formula	Molecular weight	CAS#	Weight%
Hydrofluoric acid	HF	20.01	7664-39-3	47-51%
Water	H ₂ O	18.02	7732-18-5	Balance

SECTION 4: First aid measures

4.1. General information

In case of inhalation: Take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment, use the "buddy" system). Remove source of contamination or move victim to fresh air. If breathing is difficult, trained personnel should administer oxygen and 2.5% calcium gluconate, preferably with a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. If breathing has stopped, trained personnel should begin artificial respiration (AR) or, if the heart has stopped, cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED) immediately. Avoid mouth-to-mouth contact by using mouth guards or shields. Quickly transport victim to an emergency care facility.

In case of skin contact: Avoid direct contact. Wear chemical protective clothing, if necessary. As quickly as possible, remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately flush with lukewarm, gently flowing water. Limit flushing with water to 5 minutes if 0.13% benzalkonium chloride (Zephiran[®]) solution or 2.5% calcium gluconate gel is available. If these treatments are not available, continue flushing until medical treatment is available. BENZALKONIUM CHLORIDE: Begin soaking the affected area in iced 0.13% benzalkonium chloride

(Zephiran[®]) solution. Use ice cubes, not shaved ice, to prevent frostbite. If immersion is not practical, towels should be soaked with iced 0.13% benzalkonium chloride (Zephiran[®]) solutions and used as compresses for the burned area. Compresses should be changed every 2-4 minutes. Benzalkonium chloride (Zephiran[®]) soaks or compresses should be continued until medical attention is available. CALCIUM GLUCONATE GEL: Wearing chemical protective gloves, start massaging 2.5% calcium gluconate gel into the burn site. Apply gel frequently and massage continuously until medical attention is available. Quickly transport victim to an emergency care facility. Double bag, seal, label and leave contaminated clothing, shoes and leather goods at the scene for safe disposal.

In case of eye contact: Avoid direct contact. Wear chemical protective gloves if necessary. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Take care not to rinse contaminated water into the unaffected eye. DO NOT use benzalkonium chloride (Zephiran[®]) for eye contact. If sterile 1% calcium gluconate is available, limit water flushing to 5 minutes. Then, use the 1% calcium gluconate solution to repeatedly rinse the eye(s). Immediately transport victim to an emergency care facility. Continue flushing with water, neutral saline or 1% calcium gluconate during transport, if at all possible.

In case of ingestion: NEVER give anything by mouth if victim is rapidly losing consciousness, is unconscious or is convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. If vomiting occurs naturally, have victim rinse mouth with water again. Quickly transport victim to an emergency care facility.

4.2. Most important symptoms and effects, both acute and delayed

With serious inhalation exposures, throat irritation, coughing, chest pain, nausea and perhaps some difficulty breathing may be experienced during exposure. These symptoms usually resolve once exposure stops. The victim may feel fine and may even return to work. This latent period can last from 1-24 hours, depending on the extent of the exposure. Within 24-48 hours, the victim may experience a rapidly worsening difficulty in breathing, accompanied by coughing. These symptoms are due to the development of a life-threatening accumulation of fluid in the lungs (pulmonary edema). Severe short-term exposures may result in long-lasting effects such as shortness of breath and pulmonary emphysema (larger than normal air spaces in the lungs which decrease lung efficiency).

4.3. Indication of any immediate medical attention and special treatment needed

Consult a doctor and/or the nearest Poison Control Centre for all exposures.

NOTE: Burns caused by weak hydrofluoric acid may go unnoticed for several hours. Therefore, first aid procedures must be followed if any contact is suspected.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Hydrofluoric acid does not burn. Use extinguishing agents compatible with acid and appropriate for fire surrounding hydrofluoric acid containers. The extinguishing medium used depends on the concentration of the acid. Water spray or fog may be used where concentrations below 60% are present. Higher concentrations may react violently with water and a dry agent, e.g. dry chemical powder is recommended. Use water spray to keep fire exposed containers cool.

DO NOT use water or water-based extinguishers with highly concentrated solutions, since they react violently with water.

5.2. Special hazards arising from the substance or mixture

Hydrofluoric acid (HF) is not flammable. However, if it is involved in a fire, extremely corrosive and very toxic hydrogen fluoride gas or fumes may be released into the air. This situation presents a very serious health hazard. Contact of HF (particularly in dilute aqueous solutions) with some metals produces extremely flammable and potentially explosive hydrogen gas. A large amount of heat is generated when highly concentrated hydrofluoric acid solutions are diluted

with water. Closed containers may rupture violently and suddenly release large amounts of product when exposed to fire or excessive heat for a sufficient period of time.

5.3. Special protective equipment for firefighters

Hydrofluoric acid is corrosive and very hazardous to health. Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. A full-body encapsulating chemical protective suit with positive pressure self-contained breathing apparatus (NIOSH approved or equivalent) may be necessary.

5.4. Hazardous combustion products

Corrosive, very toxic hydrogen fluoride gas.

5.5. Advice for firefighters

Evacuate area and fight fire from a safe distance or protected location. Approach fire from upwind to avoid corrosive and very toxic hydrogen fluoride gas.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate spill area. Restrict access to area until completion of clean-up. Remove or isolate flammable and combustible materials. Ensure clean-up is conducted by trained personnel only. Wear adequate personal protective equipment. For maximum protection, a chemical protective full-body encapsulating suit with supplied air respiratory protection should be considered. Ventilate area.

6.2. Environmental precautions

Notify government occupational health and safety and environmental authorities.

6.3. Methods and material for containment and cleaning up

Absolutely no unprotected contact with spilled material. Stop leak if without risk. Keep materials which can burn away from spilled material. Use water spray to knock down gas. Do not get water inside vessels. Dike corrosive water solutions to prevent entry into waterways, sewers or confined spaces.

SMALL SPILLS: Contain spill with absorbent material which does not react with spilled material. Shovel into clean, dry, labeled containers and cover. Contaminated absorbent material will pose the same hazards as the spilled product.

LARGE SPILLS: Contact fire and emergency services and supplier for advice.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

This material is a VERY TOXIC (INHALATION and SKIN CONTACT HAZARD), CORROSIVE liquid. Before handling, it is extremely important that engineering controls are operating and that protective equipment requirements and personal hygiene measures are being followed. People working with this chemical must be properly trained regarding its hazards and its safe use. Maintenance and emergency personnel must be advised of potential hazards.

Unprotected persons should avoid all contact with this chemical including contaminated equipment. Never work alone with this chemical. Another person should be in view at all times and be equipped and trained to rescue. Alternatively, precautions such as regular visual checks made by another person or a telephone call-in procedure should be taken to ensure the continued safety of lone workers or workers in remote locations.

In case of large leaks or spills, escape-type respiratory protective equipment should be available in the work area. If

hydrofluoric acid is released, immediately evacuate the area. Immediately report leaks, spills or ventilation failures. Ensure that emergency eyewash and showers are in the immediate vicinity of work involving hydrofluoric acid. Prior to working with hydrofluoric acid, ensure that appropriate first aid procedures are established and supplies are readily accessible to trained personnel.

Be aware of typical signs and symptoms of poisoning and first aid procedures. Any signs of illness should be reported immediately to supervisory personnel. Seek medical attention for all exposures even if an exposure did not seem excessive. Symptoms of a severe exposure can be delayed.

Closed handling systems for processes involving this material should be used. If closed handling systems are not feasible, use local exhaust ventilation such as a fumehood (sash should not be glass). Keep the fumehood sash as low as possible. If a closed handling system is not possible, use the smallest possible amounts in an area separate from the storage area. Avoid generating vapors or mists. Prevent the release of vapors/mist into workplace air.

Keep away from combustible materials. Protect from accidental contact with water. Do not use with incompatible materials such as metals, water, silicon-bearing materials (e.g. glass, concrete, ceramics, sand), antimony or arsenic containing metal alloys, strong bases, sulfides, sulfuric acid, cyanides. See Section 10 for more information.

Hydrofluoric acid should not be stored in glass or stoneware containers. Metal containers may react with HF to produce flammable hydrogen gas. Materials such as polyethylene or carbon steel are generally acceptable. Secondary protective containers must be used when this material is being stored or carried. Inspect containers for leaks before handling. Prevent damage to containers. Label containers. Open containers carefully on a stable surface. Keep containers tightly closed when not in use. Stand upwind of all opening, pouring and mixing operations. Use corrosion-resistant transfer equipment when dispensing. Pour carefully from the container to avoid splashing and spurting. Carefully dispense into sturdy containers made of compatible materials. Never return contaminated material to its original container.

Never add water to a corrosive. Always add corrosives to water. When mixing with water, cautiously and slowly stir small amounts of acid into water. Use cold water to prevent excessive heat generation. Assume that empty containers contain residues which are hazardous. Keep work areas clean. Use work surfaces that can be easily decontaminated. Have suitable emergency equipment for fires, spills and leaks readily available. Practice good housekeeping. Maintain handling equipment. Comply with applicable regulations.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area, out of direct sunlight and away from combustible materials. Keep quantities stored as small as possible. Store away from incompatible materials, such as metals, water, silicon-bearing materials (e.g. sand, glass, ceramics, concrete), antimony or arsenic containing metal alloys, strong bases, sulfides, sulfuric acid, cyanides. See Section 10 for more information.

Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Keep storage area separate from work areas. Post warning signs. Inspect periodically for damage or evidence of leaks or corrosion. Consider leak detection system with an alarm.

Inspect all incoming containers to make sure they are properly labeled and not damaged. Protect the label and keep it visible. Keep containers tightly closed when not in use and when empty. Protect from damage. Always store in original labeled container. (Hydrofluoric acid should not be stored in glass or stoneware containers. Metal containers may react with HF to produce highly flammable hydrogen gas.) Materials such as polyethylene or carbon steel are generally acceptable. Secondary protective containers must be used when this material is being stored or carried. Inspect containers regularly for corrosion or leaks. Keep empty containers in separate storage area. Empty containers may contain hazardous residues. Keep closed.

Walls, floors, shelving, lighting and ventilation systems in storage area should fire-resistant and be made from materials that resist attack from hydrofluoric acid. Avoid bulk storage indoors. Keep absorbents for leaks and spills readily available. Contain spills or leaks by storing in trays made from compatible materials. Provide raised sills or ramps at doorways or create a trench which drains to a safe location. Floors should be sealed to prevent absorption.

Storage tanks should be above ground and surrounded with a dike capable of holding entire contents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Chemical Name	Limit Value Type	Exposure Limit Value	Source
Hydrofluoric acid	TLV-TWA	0.5 ppm, as F	USA ACGIH
	PEL-T-TWA, REL-TWA	3 ppm (as F)	USA OSHA, USA NIOSH
	IDLH	30 ppm	USA NIOSH
Water	None listed.	Not applicable	Not applicable

8.2. Exposure controls

Appropriate engineering controls: Engineering methods to control hazardous conditions are the preferred means of protecting workers. Methods include mechanical ventilation (dilution and local exhaust), process or personnel enclosure, control of process conditions, and process modification (e.g. substitution of a less hazardous material). Administrative controls and personal protective equipment may also be required.

Because of the high potential hazard of hydrofluoric acid, stringent control measures such as enclosure (closed handling system) should be considered to prevent all contact with this chemical. If this is not feasible, local exhaust ventilation should be used to prevent release of vapor or mist into the workplace air. Consider installation of air monitoring systems that activate alarms in the event of ventilation system failure or leaks. Adequate general (dilution) is also required.

Use a properly designed corrosion-resistant ventilation system separate from other exhaust ventilation systems. Exhaust directly to the outside after taking the necessary precautions to protect the environment. Supply sufficient replacement air to make up for air removed by exhaust systems. Any use of this material in an elevated temperature process should be thoroughly evaluated to determine safe operating conditions.

Personal protective equipment:

Eye/face protection: Chemical safety goggles and a full face shield.

Skin protection: Chemical protective gloves, coveralls, boots, and/or other chemical protective clothing (such as apron, sleeve protectors) to prevent all contact with this chemical. A chemical protective full-body encapsulating suit and respiratory protection may be required in some operations. Protective clothing used specifically for hydrofluoric acid operations should be clearly marked, preferably with a distinctive color, to differentiate it from other protective clothing. Have a safety shower and eyewash fountain readily available in the immediate work area. It is recommended that the safety shower and eye wash are connected to an alarm system so that other workers can assist in the emergency.

Respiratory protection: NIOSH/OSHA RECOMMENDATIONS FOR HYDROGEN FLUORIDE CONCENTRATIONS IN AIR:

Up to 30 ppm: Chemical cartridge respirator with cartridge(s) to protect against hydrogen fluoride or Powered air-purifying respirator with cartridge(s) to protect against hydrogen fluoride or Gas mask with canister to protect against hydrogen fluoride or SAR or Full face piece SCBA.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS: Positive pressure, full face piece SCBA or Positive pressure, full face piece SAR with an auxiliary positive pressure SCBA.

ESCAPE: Gas mask with canister to protect against hydrogen fluoride or Escape-type SCBA.

Hygiene measures: Remove contaminated clothing promptly. Keep contaminated clothing in closed container until they can be safely discarded. Do not eat, drink or smoke in work areas. Maintain good housekeeping.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

a) Appearance:	
Physical state	Liquid
Color	Clear, colorless
b) Odor	Strong odor
c) Odor threshold	0.04-0.14 ppm (0.03-0.11 mg/m ³)
d) pH	50% w/w: 0.9 (calc.)
e) Melting point/freezing point	48% (w/w): -37 °C (-34.6 °F)
f) Boiling point/boiling range	47% (w/w): 108.7 °C (227.7 °F); 38.2% (w/w): 112.2 °C (234 °F)
g) Flash point	Not combustible (does not burn).
h) Evaporation rate	Varies with concentration.
i) Flammability (solid, gas)	Not applicable
j) Upper/lower flammability/explosive limits	Not applicable
k) Vapor pressure (Partial pressure at 20 °C)	50% (w/w): 1.65 kPa (12.4 mm Hg) (calculated)
l) Vapor density (at 25 °C)	1.86 (air = 1) (HF gas)
m) Relative density (at 20 °C)	50% (w/w): 1.18 g/cm ³
n) Solubilities	Soluble in all proportions in water. Soluble in ethanol; slightly soluble in diethyl ether, benzene, toluene, xylene and tetralin.
o) Partition coefficient (n-Octanol/Water)	Log P (oct) = 0.23 (estimated)
p) Auto-ignition temperature	Not applicable
q) Decomposition temperature	No information available.
r) Viscosity	No information available.
s) Explosive properties	Not applicable
t) Oxidizing properties	Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

See Section 10.5 for incompatible materials.

10.2. Chemical stability

Normally stable. Hydrogen fluoride is one of the most stable diatomic molecules.

10.3. Possibility of hazardous reactions

Hydrogen fluoride tends to associate by means of hydrogen bonds to form polymers in both the liquid and gaseous states. This polymerization is not hazardous.

10.4. Conditions to avoid

High temperatures.

10.5. Incompatible materials

WATER - a large amount of heat is generated when highly concentrated solutions are diluted with water. Spattering or splashing may occur.

METALS (e.g. iron, steel; particularly in the presence of water) - may react to form extremely flammable and potentially explosive hydrogen gas.

ANTIMONY OR ARSENIC CONTAINING METAL ALLOYS - extremely toxic stibine may be released from antimony containing metal alloys and extremely toxic arsine from arsenic containing alloys.

CYANIDES - contact may release toxic and flammable hydrogen cyanide gas.

CYANOGEN FLUORIDE - may polymerize explosively at normal temperatures; may decompose violently at -80 °C.

SULFIDES - contact may liberate toxic and flammable hydrogen sulfide gas.

SILICON-BEARING MATERIALS (e.g. sand, concrete, glass and ceramics) - contact may generate toxic and irritating silicon tetrafluoride gas.

BISMUTHIC ACID - reacts violently with the evolution of ozonized oxygen.

METHANESULFONIC ACID - electrolysis of the mixture produces explosive oxygen difluoride.

FLUORINE GAS - reacts vigorously with a 50% hydrofluoric acid solution and may burst into flame.

NITRIC ACID and LACTIC ACID - mixtures of the 3 acids are unstable and can explode.

PROPYLENE GLYCOL and SILVER NITRATE - may form explosive silver fulminate.

SODIUM - reacts with explosive violence.

STRONG BASES (e.g. ammonium hydroxide, sodium hydroxide or calcium oxide) - may react very violently.

SULFURIC ACID - reaction is violent.

ARSENIC TRIOXIDE or PHOSPHOROUS PENTOXIDE (TETRAPHOSPHORUS DECAOXIDE) - reaction is vigorous.

10.6. Hazardous decomposition products

None reported

SECTION 11: Toxicology

11.1. Information on toxicological effects

Acute toxicity

Oral LD50: No information available.

Inhalation LC50: 1276 ppm/1H (rat); 342 ppm/1H (mouse)

Dermal LD50: No information available.

Other information on acute toxicity: RTECS# MW7875000

Skin corrosion/irritation: Hydrofluoric acid is extremely corrosive and can cause very deep and excruciatingly painful burns and tissue loss. Burns from concentrated solutions (greater than 50%) are felt immediately and tissue destruction is readily apparent. Weaker solutions (20-50%) result in burns that are apparent after several hours. Burns from solutions of less than 20% may take up to 24 hours to become apparent. Weak solutions (less than 7%) penetrate deeply before causing tissue damage and surface involvement may be minimal. Pain is greater than expected for the skin involvement and is described as severe deep and throbbing. The severity of hydrofluoric acid burns depends on the concentration of the solution, surface area involved and the duration of exposure. Burns are swollen, hot and painful, and then develop white or yellowish areas and blistering, with deep ulceration and destruction of tissue, which tends to heal slowly. Loss of fingers has been reported following untreated skin contact. The severity of the burns and absorption of the acid (with liquefaction necrosis of soft tissue and decalcification and corrosion of the bone) have resulted in permanent scarring, disability and death. In some cases, systemic fluoride toxicity has occurred following skin contact. Absorbed fluoride can cause metabolic imbalances with irregular heartbeat, central nervous system depression, seizures, and deaths.

Serious eye damage/eye irritation: Direct contact with hydrofluoric acid can cause severe and irreversible corrosive injury with possible corneal scarring and blindness. The acid penetrates to deep tissue layers and causes severe corrosive injury. The gas can dissolve in the moisture on the surface, forming corrosive hydrofluoric acid. Irritation has been reported with exposure to concentrations as low as 0.24 ppm for 1 hour.

Respiratory or skin sensitization: Hydrofluoric acid is extremely toxic by inhalation. Low concentrations (a few ppm) can cause irritation of the nose, throat, eyes and respiratory tract. Higher concentrations can cause severe burns to the throat, airways and lungs. Absorbed fluoride can cause metabolic imbalances with irregular heartbeat, central nervous system depression, and seizures. Fluid accumulation in the lungs and irregular heartbeat has led to deaths within hours following inhalation and, in some cases, concurrent skin contact with unknown concentrations of HF.

Germ cell mutagenicity: No information available.

Carcinogenicity: It is not possible to draw conclusions about the potential carcinogenicity of hydrofluoric acid based on the available information.

Reproductive toxicity: No information available.

Specific target organ toxicity-single exposure: No information available.

Specific target organ toxicity-repeated exposure: No information available.

Aspiration hazard: No information available.

Additional information: FLUOROSIS: Fluoride is a bone seeker, and exposure to excessive amounts will weaken and degenerate the bone structure (osteosclerosis). Early signs of the disease (e.g. denser and thicker bones) may only be detected with x-ray examination. Early symptoms include pain in the joints of the hands, feet, knees and spine and a limited range of joint movement. There may also be heart, nerve, and intestinal problems. In some cases, grey or chalk-white discoloration and pitting of the teeth may be noted. The disease is called fluorosis. The amount of fluoride stored in the bones usually increases with increasing fluoride intake. Excess fluoride is removed slowly from the body over a period of years. Skeletal fluorosis may be slowly and partially reversible.

SECTION 12: Ecological information

12.1. Ecotoxicity: No information available.

12.2. Persistence and degradability: Persistent. Hydrogen fluoride is removed from air by wet deposition as fluoride salts with an atmospheric lifetime of 1-5 days.

12.3. Bioaccumulative potential: Bioaccumulation is not anticipated for inorganic compounds that are miscible with water.

12.4. Mobility in soil: No information available.

12.5. Results of PBT and vPvB assessment: Not applicable for inorganic substances.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Review federal, provincial, and local regulations prior to disposal. Consult the chemical supplier for advice on disposal.

SECTION 14: Transport information

Land Transport DOT (U.S.)

UN Number	UN1790
Proper Shipping Name	HYDROFLUORIC ACID, with not more than 60 percent strength
Class(es)	8 (6.1)
Hazard Label(s)	Corrosive & Toxic
Packing Group	II
Environmental Hazard(s)	--

Sea Transport IMDG

UN Number	UN1790
Proper Shipping Name	HYDROFLUORIC ACID solution, with not more than 60% hydrogen fluoride
Class(es)	8 (6.1)
Hazard Label(s)	Corrosive & Toxic
EMS- No.	F-A, S-B
Packing Group	II
Environmental Hazard(s)	--
Segregation Group	Category D

Air Transport IATA

UN Number	UN1790
Proper Shipping Name	Hydrofluoric acid 60% or less strength
Class(es)	8 (6.1)
Hazard Label(s)	Corrosive & Toxic
Packing Group	II

SECTION 15: Regulatory information

OSHA Hazards: CAS #7664-39-3 meets criteria for hazardous material, as defined by 29 CFR 1910.1200.

SARA 302 Extremely Hazardous Substances: This material contains Hydrofluoric acid (CAS# 7664-39-3), which is subject to the reporting requirement of 100 lbs RQ.

SARA 313 (TRI reporting): This material contains Hydrofluoric acid (CAS# 7664-39-3), which is subject to the reporting requirements of Section 313 of SARA Title III (Hydrogen fluoride).

SARA 311/312 Hazardous Chemicals: This material contains Hydrofluoric acid (CAS# 7664-39-3).

Massachusetts Right-To-Know Substance List: CAS# 7664-39-3 is listed, 10 lbs RQ.

Pennsylvania Right-To-Know Hazardous Substances: CAS# 7664-39-3 is listed, E (environmental hazard).

New Jersey Worker and Community Right-To-Know Components: CAS# 7664-39-3 is listed, RTK# 3759.

California Proposition 65: CAS# 7664-39-3 is not subject to this act. CAS# 7732-18-5 is not subject to this act.

Inventory Status:

Canada DSL/NDSL Inventory List: CAS# 7664-39-3 is listed. CAS# 7732-18-5 is listed.

US TSCA Inventory List: CAS# 7664-39-3 is listed. CAS# 7732-18-5 is listed.

EINECS, ELINCS or NLP: CAS# 7664-39-3 is listed, EC# 231-634-8. CAS# 7732-18-5 is listed, EC# 231-791-2.

SECTION 16: Other information

Full text of H-Statement(s) and P-Statement(s)

H300 + H310 + H330	Fatal if swallowed, in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
H290	May be corrosive to metals.
P234	Keep only in original container.
P260	Do not breathe fumes/gas/mist/vapours/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 in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position 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 or doctor.
P320	Specific treatment is urgent (see Section 4 for first aid instructions in case exposure).
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P406	Store in corrosion resistant container with a resistant inner liner.
P501	Dispose of contents/containers in accordance with local, state and federal regulations.

Canadian Carcinogenicity hazard class: Not applicable.

PHNOC hazard class: Not applicable.

HHNOC hazard class: Not applicable.

Biohazardous Infectious Materials hazard class: Not applicable.

NFPA Rating:

Health: 4

Flammability: 0

Reactivity: 1

Special Hazard: Not applicable



DISCLAIMER

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and its Affiliates shall not be held liable for any damage resulting from handling.