Hydrofluoric acid

30103-1L

Version 1.8 Revision Date 09.04.2026

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

1.1. Product identifier

Product name	:	Hydrofluoric acid
SDS-number	:	000000021242
Type of product	:	Mixture
Remarks	:	SDS according to Art. 31 of Regulation (EC) 1907/2006.

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

Use of the Substance/Mixture	:	Laboratory chemicals
Uses advised against	:	none

1.3. Details of the supplier of the safety data sheet

Company	:	Honeywell Specialty Chemicals Seelze GmbH Wunstorfer Straße 40 30926 Seelze Germany	Solstice Advanced Materials US, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
Telephone	:	(49) 5137-999 0	
For further information, please contact:	:	SafetyDataSheet@solstice.com	

1.4. Emergency telephone number

Emergency telephone number	:	+1-703-527-3887 (ChemTrec-Transport) +1 303-739-1378 (Medical)
	:	United Kingdom: (+44) 844 892 0111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Corrosive to metals Category 1

H290 May be corrosive to metals.
Acute toxicity Category 2 - Oral
H300 Fatal if swallowed.
Acute toxicity Category 2 - Inhalation
H330 Fatal if inhaled.
Acute toxicity Category 1 - Dermal
H310 Fatal in contact with skin.
Skin corrosion Category 1A
H314 Causes severe skin burns and eye damage.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms :



Signal word : Danger

Hazard statements :	H290	May be corrosive to metals.
	H300 + H310 + H330	Fatal if swallowed, in contact with skin or if inhaled.
	H314	Causes severe skin burns and eye damage.
Precautionary statements :	P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P284	In case of inadequate ventilation wear respiratory protection.
	P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
	P302 + P352	IF ON SKIN: Wash with plenty of water.
	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.
	P308 + P313	IF exposed or concerned: Get medical advice/ attention.

Hazardous components which must be listed on the label : Hydrogen fluoride

2.3. Other hazards

Liquid or vapour causes burns which may be delayed. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. Product does not contain substances that are persistent, mobile, and toxic (PMT/vPvM) at levels of 0.1 % or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical name	CAS-No. Index-No. EC-No.	Classification 1272/2008	Concentration	Remarks
Hydrogen fluoride	7664-39-3 009-002-00-6 231-634-8	Acute Tox. 2; H300; Oral Acute Tox. 1; H310; Dermal Acute Tox. 2; H330; Inhalation Skin Corr. 1A; H314	>= 25 % - < 50 %	Eye Irrit. 2; H319:0,1 - < 1 % Skin Corr. 1B; H314:1 - < 7 % Skin Corr. 1A; H314:>= 7 % Skin Corr. 1B; H314:1 - < 7 % Skin Corr. 1A; H314:>= 7 % Eye Irrit. 2; H319:0,1 - < 1 %

Remaining components of this product are non-hazardous and/or are present at concentrations below reportable limits.

Occupational Exposure Limit(s), if available, are listed in Section 8.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:
First aider needs to protect himself. Remove from exposure, lie down. Medical assistance essential. Remove all contaminated clothing while washing continuously. After thorough washing the burned area should be immersed in a solution of 0.1% iced aqueous Benzalkonium Chloride. As an alternate first aid treatment, 2.5% calcium gluconate gel may be continuously massaged into the burn area. Further treatment by physician.

Inhalation:
Remove to fresh air. Keep patient warm and at rest. Get competent medical attention immediately. If breathing has stopped, start artificial respiration at once. An authorized person should administer oxygen to a victim who is having difficulty breathing, until the victim is able to breathe easily by himself. Calcium gluconate, 2.5% in normal saline may be given by nebulizer with oxygen. Do not give stimulants unless instructed to do so by a physician. Victim should be examined by a physician and held under observation for at least 24 hours.

Skin contact:
Limit washing to 15 minutes if treatment specific for HF exposure is available.
Remove all contaminated clothing while washing continuously. After thorough washing for at least 5 minutes, the burned area should be immersed in a solution of 0.13% iced aqueous Benzalkonium chloride until pain is relieved. As an alternate first aid treatment, 2.5% calcium gluconate gel may be continuously massaged into the burn area until the pain is relieved. For larger burns or burns treated with calcium gluconate gel (in which pain is present longer than 30 minutes), a physician should inject 5% aqueous calcium gluconate beneath, around and in the burned area. Use of local anesthetics is not recommended, as reduction in pain is an indicator of effectiveness of treatment.

Eye contact:
Protect unharmed eye. Irrigate eyes for at least 15 minutes with copious quantities of water, keeping eyelids apart and away from eyeballs during irrigation. Remove contact lenses, if present and easy to do. Continue rinsing. Get competent medical attention immediately, preferably an eye specialist. If a physician is not immediately available, apply one or two drops of 0.5% tetracaine hydrochloride solution, or other aqueous, topical ophthalmic anesthetic and continue irrigation. Do not use the solution described for skin treatment (Benzalkonium chloride). Use no other medications unless instructed to do so by a physician. Rubbing of the eyes is to be avoided. Irrigate with 1% calcium gluconate in normal saline for 1 to 2 hours to prevent or lessen corneal damage.

Ingestion:
Call a physician immediately. Drink plenty of water. Do NOT induce vomiting. Magnesium hydroxide (milk of Magnesia) as an antacid may be given.

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

No data available

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

For large skin area burns (totaling greater than 25 square inches), for ingestion and for significant inhalation exposure, severe systemic effects may occur. Monitor and correct for hypocalcemia, cardiac arrhythmias, hypomagnesemia and hyperkalemia. In some cases hemodialysis may be indicated. For certain burns, especially of the digits, use of intra-arterial calcium gluconate may be indicated. For inhalation exposures, treat as chemical pneumonia. Monitor for hypocalcemia. 2.5% calcium gluconate in normal saline by nebulizer or by intermittent positive pressure breathing with 100% oxygen may decrease pulmonary damage. Bronchodilators may also be administered.

See Section 11 for more detailed information on health effects and symptoms. :

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Water spray
Foam
Carbon dioxide (CO2)
Dry powder
The product is not flammable.

Extinguishing media which shall not be used for safety reasons:
High volume water jet

5.2. Special hazards arising from the substance or mixture

Fire may cause evolution of:
Hydrogen fluoride
Do not allow run-off from fire fighting to enter drains or water courses.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
No unprotected exposed skin areas.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Use personal protective equipment. Keep people away from and upwind of spill/leak. Wear full protective clothing and self-contained breathing apparatus.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. Clean contaminated floors and objects thoroughly while observing environmental regulations.

6.3. Methods and materials for containment and cleaning up

Clean-up methods - large spillage
Suppress (knock down) gases/vapours/mists with a water spray jet.
Dilute with plenty of water.
Use chemical neutralising agents
Neutralise with the following product(s):
lime
Flush with water.
Suitable material for picking up.
Universal binder
Never neutralise with the following products:
soda ash
Possible need to alert the neighbourhood.

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:
Exhaust ventilation at the object is necessary. Use only acid resistant equipment. Perform filling operations only at stations with exhaust ventilation facilities. Plan first aid action before beginning work with this product. Always have on hand a first-aid kit, together with proper instructions.

Advice on protection against fire and explosion:
Normal measures for preventive fire protection. The product is not flammable.

Hygiene measures:
Separate rooms are required for washing, showering and changing clothes. Regular cleaning of equipment, work area and clothing. Contaminated work clothing should not be allowed out of the workplace. Take off all contaminated clothing immediately. Wash hands before breaks and at the end of workday. When using do not eat or drink. Recommended preventive skin protection

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:
Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not leave vessels/containers open Containers should be protected against falling down. Avoid product residues in/on containers. Store in a place accessible by authorized persons only.

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
Hydrogen fluoride	EH40 WEL	as F		Listed
Hydrogen fluoride	EH40 WEL TWA	1,5 mg/m3 1,8 ppm as F		
Hydrogen fluoride	EU ELV TWA	1,5 mg/m3 1,8 ppm		Indicative
Hydrogen fluoride	EU ELV STEL	2,5 mg/m3 3 ppm		Indicative
Hydrogen fluoride	EU SCOELS TWA	1,5 mg/m3 as F	8 hours	
Hydrogen fluoride	EU SCOELS STEL	2,5 mg/m3 3 ppm as F	15 minutes	
Hydrogen fluoride	EH40 WEL STEL	2,5 mg/m3 3 ppm as F	15 minutes	

EH40 WEL - UK. EH40 Workplace Exposure Limits (WELs), as amended
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EH40 WEL - UK. EH40 Workplace Exposure Limits (WELs), as amended
TWA - Time weighted average
EU ELV - EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended
STEL - Short term exposure limit

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
Hydrogen fluoride	Workers / Acute local effects		2,5 mg/m3	Inhalation	
Hydrogen fluoride	Workers /		1,5 mg/m3	Inhalation	

	Long-term systemic effects				
Hydrogen fluoride	Workers / Acute systemic effects		2,5 mg/m3	Inhalation	
Hydrogen fluoride	Workers / Long-term local effects		1,5 mg/m3	Inhalation	
Hydrogen fluoride	Consumers / Acute local effects		1,25 mg/m3	Inhalation	
Hydrogen fluoride	Consumers / Long-term systemic effects		0,03 mg/m3	Inhalation	
Hydrogen fluoride	Consumers / Long-term local effects		0,2 mg/m3	Inhalation	
Hydrogen fluoride	Consumers / Acute systemic effects		0,03 mg/m3	Inhalation	
Hydrogen fluoride	Consumers / Acute systemic effects		0,01mg/kg bw/d	Skin contact	
Hydrogen fluoride	Consumers / Long-term systemic effects		0,01mg/kg bw/d	Skin contact	

Component	Environmental compartment / Value	Remarks
Hydrogen fluoride	Fresh water: 0,89 mg/l	
Hydrogen fluoride	Marine water: 0,089 mg/l	
Hydrogen fluoride	Fresh water sediment: 3,38 mg/kg	
Hydrogen fluoride	Marine sediment: 0,338 mg/kg	

Hydrogen fluoride	Soil: 10,6 mg/kg	
Hydrogen fluoride	Sewage treatment plant: 51 mg/l	

8.2. Exposure controls

Occupational exposure controls

Avoid exposure - obtain special instructions before use.
The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Engineering measures
acid resisting floor
Emergency sprinkling nozzle
Local exhaust

Personal protective equipment
Respiratory protection:
In the case of vapour formation use a respirator with an approved filter.

Hand protection:
Glove material: Viton®
Break through time: > 480 min
Glove thickness: 0,7 mm
Vitoject® 890
Gloves must be inspected prior to use.
Replace when worn.
Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.
Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.
Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer reccomends to use the chemical protective glove in practice not longer than 50% of the recomended permeation time.
Manufacturer´s directions for use should be observed because of great diversity of types .
Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:
Safety goggles

Skin and body protection:
Complete suit protecting against chemicals

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

(a) Physical state	:	liquid
(b) Colour	:	colourless
(c) Odour	:	stinging
(d) Melting point/freezing point	:	ca. -40 °C
(e) Boiling point/boiling range	:	ca. 110 °C at 1.013 hPa
(g) Lower and upper explosion limit	:	Lower explosion limit Not applicable
	:	Upper explosion limit Not applicable
(h) Flash point	:	Not applicable
(i) Auto-ignition temperature	:	Not applicable
(j) Decomposition temperature	:	No decomposition if used as directed. Fire or intense heat may cause violent rupture of packages.
(k) pH	:	acidic
(l) Viscosity, kinematic	:	No data available
(m) Solubility(ies)	:	Water solubility: completely miscible

(n) Partition coefficient: n-octanol/water	:	No data available
(o) Vapour pressure	:	No data available
(p) Density and / or relative density	:	ca. 1,140 g/cm3 at 20 °C
(q) Relative vapour density	:	No data available
(r) Particle characteristics	:	No data available

9.2 Other Information

Polymer characteristics	:	No data available
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Corrosive to metals	:	Corrosive to metals
Evaporation rate	:	No data available
Viscosity, dynamic	:	No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

No decomposition if used as directed.
Fire or intense heat may cause violent rupture of packages.

10.3. Possibility of hazardous reactions

Corrosive in contact with metals

10.4. Conditions to avoid

Protect from heat/overheating.

10.5. Incompatible materials

Glass and silicate-containing materials are attacked.
Gives off hydrogen by reaction with metals.
Incompatible with bases.

10.6. Hazardous decomposition products

No decomposition if stored normally.
Stable under normal conditions.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

(a) Acute toxicity

Acute oral toxicity:
Acute toxicity estimate
Value: 11 mg/kg
Method: Calculation method

Acute dermal toxicity:
Acute toxicity estimate
Value: 11 mg/kg
Method: Calculation method

Acute inhalation toxicity:
LC50
Species: Rat
Value: 2240 ppm
Exposure time: 1 h
anhydrous substance

Acute toxicity estimate
Value: 1,1 mg/l
Method: Calculation method

Acute toxicity (other routes of administration):
No data available

(b) Skin corrosion/irritation:
Species: Rabbit
Classification: Corrosive
Method: OECD

(c) Serious eye damage/eye irritation:
No data available

(d) Respiratory or skin sensitisation:
No data available

(e) Germ cell mutagenicity:
Test Method: Ames test
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 471

Test Method: Chromosome aberration test
Species: Mouse
Test substance: REACH dossier “read-across”
Result: negative

(f) Carcinogenicity:
Note: Not classified due to data which are conclusive although insufficient for classification.

(g) Reproductive toxicity:
Remarks: Not classified due to data which are conclusive although insufficient for classification.

(h) STOT-single exposure:
No data available

(i) STOT - repeated exposure:
Note: Not classified due to data which are conclusive although insufficient for classification.

(j) Aspiration hazard:
No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information:
Chronic Health Hazard

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:
No data available

Toxicity to aquatic plants:
No data available

Toxicity to aquatic invertebrates:
No data available

12.2. Persistence and degradability

Biodegradability:
The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Product does not contain substances that are persistent, mobile, and toxic (PMT/vPvM) at levels of 0.1 % or higher.

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:
Dispose according to legal requirements.

Packaging:
Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:
Provisions relating to waste:
EC Directive 2006/12/EC; 2008/98/EEC
Regulation No. 1013/2006
For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number or ID number
ADR/RID:1790 IMDG:1790 IATA:1790

14.2 UN proper shipping name
ADR/RID:HYDROFLUORIC ACID
IMDG:HYDROFLUORIC ACID
IATA:Hydrofluoric acid

14.3 Transport hazard class(es)
ADR/RID:8 (6.1) IMDG: 8 (6.1) IATA: 8 (6.1)

14.4 Packaging group
ADR/RID:II IMDG: II IATA: II

14.5 Environmental hazards
ADR/RID:no Marine pollutant: no

14.6 Special precautions for user
IMDG Code segregation group (SGG1) – ACIDS,

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Basis	Value	Remarks
Directive 2012/18/EC SEVESO III Listed in Regulation : H2: ACUTE TOXIC	**Quantity**: 50.000 kg **Quantity**: 200.000 kg	
Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of ≥ 0.1 % (w/w).

Other inventory information

USA. List of Active Substances on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory, as amended
On TSCA Inventory

Australia. Inventory of Industrial Chemicals (AIIC), as amended
On the inventory, or in compliance with the inventory

Canada. Domestic Substances List (DSL), as amended
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI)
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

Hydrogen fluoride	:	H300	Fatal if swallowed.
		H310	Fatal in contact with skin.
		H330	Fatal if inhaled.
		H314	Causes severe skin burns and eye damage.

Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:
EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very biaccumulative substance
PBT Persistent, bioaccmulative und toxic substance

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