SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2015/830

hydrogen fluoride, anhydrous

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

1.1. Product identifier

Product name : hydrogen fluoride, anhydrous

Synonyms : ANTISAL 2B; CASWELL No. 484; CC 0104; EPA pesticide chemical code 045601; fluorhydric acid, anhydrous; fluoric acid, anhydrous; fluorine hydride, anhydrous; fluorine monohydride, anhydrous; fluorohydric acid, anhydrous; fluorohydric acid gas, anhydrous; HFA (=hydrofluoric acid), anhydrous; HF (=hydrogen fluoride), anhydrous; hydrofluoric acid; hydrofluoride, anhydrous; hydrogen fluoride; hydrogen monofluoride, anhydrous; rubigine

Registration number REACH : 01-2119458860-33

Product type REACH : Substance/mono-constituent

CAS number : 7664-39-3

EC index number : 009-002-00-6

EC number : 231-634-8

RTECS number : MW7875000

Molecular mass : 20.01 g/mol

Formula : HF

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

1.2.1 Relevant identified uses

Industrial and professional use. Before use: carry out a risk assessment

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

BALCHEM NV
Westvaartdijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
+32 2 252 17 51
info.grimbergen@balchem.com

Distributor of the product

BALCHEM NV
Westvaartdijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
+32 2 252 17 51
info.grimbergen@balchem.com

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch):

+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Acute Tox.	category 2	H330: Fatal if inhaled.
Acute Tox.	category 1	H310: Fatal in contact with skin.
Acute Tox.	category 2	H300: Fatal if swallowed.
Skin Corr.	category 1A	H314: Causes severe skin burns and eye damage.

2.2. Label elements


Signal word Danger

H-statements

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

P-statements

P280	Wear protective gloves, protective clothing and eye protection/face protection.
P260	Do not breathe gas.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P361 + P364	Take off immediately all contaminated clothing and wash it before reuse.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards

Heat may cause pressure rise in tanks/drums: explosion risk
May cause frostbites
May cause frostbites
Caution! Substance is absorbed through the skin
Harmful to fishes
Harmful to invertebrates (Daphnia)
Harmful to algae

SECTION 3: Composition/information on ingredients

3.1. Substances

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
hydrogen fluoride 01-2119458860-33	7664-39-3 231-634-8	C>99 %	Acute Tox. 2; H330 Acute Tox. 1; H310 Acute Tox. 2; H300 Skin Corr. 1A; H314	(1)(2)	Mono-constituent

(1) For H-statements in full: see heading 16
(2) Substance with a Community workplace exposure limit

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain.

After inhalation:

Remove the victim into fresh air. Immediately consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service.

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

4.2.1 Acute symptoms

After inhalation:

Dry/sore throat. Coughing. Corrosion of the upper respiratory tract. FOLLOWING SYMPTOMS MAY APPEAR LATER: Respiratory difficulties. Risk of lung oedema. Disturbances of heart rate. Body temperature rise. Tremor. Blue/grey discolouration of the skin. Possible oedema of the upper respiratory tract. Possible inflammation of the respiratory tract. Possible laryngeal spasm/oedema. Risk of pneumonia.

After skin contact:

Caustic burns/corrosion of the skin. Destruction of tissue. Slow-healing wounds.

After eye contact:

Corrosion of the eye tissue. Permanent eye damage.

After ingestion:

Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Shock.

4.2.2 Delayed symptoms

If applicable and available it will be listed below.

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

Specific treatment is necessary. Hospitalize at once.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:

Adapt extinguishing media to the environment.

5.1.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

Violent exothermic reaction with water (moisture): release of toxic/corrosive products.

5.3. Advice for firefighters

5.3.1 Instructions:

Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: cool from behind cover. When cooling/extinguishing: no water in the substance. Do not move the load if exposed to heat. After cooling: persistant risk of physical explosion. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gas-tight suit. Corrosion-proof suit. Compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep upwind. Seal off low-lying areas. Close doors and windows of adjacent premises. No naked flames. Corrosion-proof appliances. Keep containers closed. Avoid ingress of water in the containers.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gas-tight suit. Corrosion-proof suit.

Suitable protective clothing

See heading 8.2

6.2. Environmental precautions

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Tip the container on one side to stop the leakage. Try to reduce evaporation. Take account of toxic/corrosive precipitation water. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Take up liquid spill into absorbent material, e.g.: dry powdered limestone or dry sand/earth. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Keep away from naked flames/heat. Avoid contact of substance with water. Gas/vapour heavier than air at 20°C. Observe very strict hygiene - avoid contact. Remove contaminated clothing immediately. Use corrosionproof equipment. Do not discharge the waste into the drain.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Storage temperature: <50 °C. Store in a dry area. Ventilation at floor level. Keep locked up. Provide for a tub to collect spills. Unauthorized persons are not admitted. Store only in a limited quantity. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, oxidizing agents, (strong) bases, metals, organic materials, alcohols, water/moisture.

7.2.3 Suitable packaging material:

Monel steel, nickel.

7.2.4 Non suitable packaging material:

Stainless steel, lead, copper, aluminium, tin, zinc, bronze, glass, stoneware/porcelain, plastics.

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

The Netherlands

Fluorwaterstof (als F)	Short time value (Public occupational exposure limit value)	1.2 ppm
	Short time value (Public occupational exposure limit value)	1 mg/m³

EU

Hydrogen fluoride	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	1.8 ppm
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	1.5 mg/m³
	Short time value (Indicative occupational exposure limit value)	3 ppm
	Short time value (Indicative occupational exposure limit value)	2.5 mg/m³

Belgium

Hydrogène (fluorure d')	Time-weighted average exposure limit 8 h	1.8 ppm (M)
	Time-weighted average exposure limit 8 h	1.5 mg/m³ (M)
	Short time value	3 ppm (M)
	Short time value	2.5 mg/m³ (M)

La mention “M” indique que lors d’une exposition supérieure à la valeur limite, des irritations apparaissent ou un danger d’intoxication aiguë existe. Le procédé de travail doit être conçu de telle façon que l’exposition ne dépasse jamais la valeur limite. Lors des mesurages, la période d’échantillonnage doit être aussi courte que possible afin de pouvoir effectuer des mesurages fiables. Le résultat des mesurages est calculé en fonction de la période d’échantillonnage.

USA (TLV-ACGIH)

Hydrogen fluoride, as F	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.5 ppm
	Momentary value (TLV - Adopted Value)	2 ppm

Germany

Fluorwasserstoff	Time-weighted average exposure limit 8 h (TRGS 900)	1 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	0.83 mg/m³

France

Fluorure d'hydrogène	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	1.8 ppm
	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	1.5 mg/m³
	Short time value (VRC: Valeur réglementaire contraignante)	3 ppm
	Short time value (VRC: Valeur réglementaire contraignante)	2.5 mg/m³

UK

Hydrogen fluoride (as F)	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	1.8 ppm
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	1.5 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	3 ppm
	Short time value (Workplace exposure limit (EH40/2005))	2.5 mg/m³

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

Product name	Test	Number
Hydrogen Fluoride (Acids, inorganic)	NIOSH	7903
Hydrogen Fluoride (Fluorides)	NIOSH	7902
Hydrogen Fluoride (Fluorides, aerosol and gas)	NIOSH	7906
Hydrogen Fluoride (organic and inorganic gases by Extractive	NIOSH	3800
Hydrogen Fluoride	OSHA	ID 110

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL/DMEL - Workers

hydrogen fluoride, anhydrous

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	1.5 mg/m³	
	Long-term local effects inhalation	2.5 mg/m³	
	Long-term local effects inhalation	1.5 µg/m³	
	Acute local effects inhalation	2.5 mg/m³	

DNEL/DMEL - General population

hydrogen fluoride, anhydrous

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.03 mg/m³	
	Acute systemic effects inhalation	0.03 mg/m³	
	Long-term local effects inhalation	0.2 mg/m³	
	Acute local effects inhalation	1.25 mg/m³	
	Long-term systemic effects oral	0.01 mg/kg bw/day	
	Acute systemic effects oral	0.01 mg/kg bw/day	

PNEC

hydrogen fluoride, anhydrous

Compartments	Value	Remark
Fresh water	0.9 mg/l	
Marine water	0.9 mg/l	
STP	51 mg/l	
Soil	11 mg/kg soil dw	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Avoid contact of substance with water. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe very strict hygiene - avoid contact. Do not eat, drink or smoke during work.

a) Respiratory protection:

Gas mask with filter type B. Gas mask with filter type E. High vapour/gas concentration: self-contained respirator.

b) Hand protection:

Insulated gloves.

- materials (good resistance)

Chloroprene rubber, chlorosulfonated polyethylene, tetrafluoroethylene.

- materials (less resistance)

Butyl rubber, polyethylene, polyurethane, nitrile rubber/PVC, viton.

- materials (poor resistance)

Leather, natural rubber, nitrile rubber, PVA, PVC, styrene-butadiene rubber.

c) Eye protection:

Protective goggles.

d) Skin protection:

Head/neck protection. Corrosion-proof clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Gas
Odour	Irritating/pungent odour
Odour threshold	0.04 - 0.13 ppm
	0.033 - 0.11 mg/m³
Colour	Colourless
Particle size	Not applicable (gas)
Explosion limits	No data available
Flammability	Non-flammable
Log Kow	-1.4 ; Experimental value
Dynamic viscosity	0.256 mPa.s ; 0 °C ; OECD 114
Kinematic viscosity	No data available
Melting point	-83 °C ; OECD 102
Boiling point	20 °C ; OECD 103
Flash point	Not applicable (gas)
Evaporation rate	No data available
Relative vapour density	2.2
Vapour pressure	1000 hPa ; 20 °C
	917 mm Hg ; 25 °C
	2765 hPa ; 50 °C
Solubility	water ; Complete
Relative density	1.0 ; 0 °C
Decomposition temperature	No data available
Auto-ignition temperature	Not applicable (gas)
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	2 ; 2 %

9.2. Other information

Minimum ignition energy	Not applicable
Critical temperature	188 °C
Critical pressure	64850 hPa
Surface tension	10.2 mN/m ; 0 °C ; OECD 115
Absolute density	970 kg/m³

SECTION 10: Stability and reactivity

10.1. Reactivity

Substance has acid reaction.

10.2. Chemical stability

Unstable on exposure to moisture.

10.3. Possibility of hazardous reactions

Violent exothermic reaction with water (moisture): release of toxic/corrosive products. Reacts violently with many compounds e.g.: with (some) bases, with (some) acids and with alcohols.

10.4. Conditions to avoid

Keep away from naked flames/heat. Avoid contact of substance with water.

10.5. Incompatible materials

Oxidizing agents, (strong) bases, metals, organic materials, alcohols, water/moisture.

10.6. Hazardous decomposition products

Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1 Test results

Acute toxicity

hydrogen fluoride, anhydrous

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral						Data waiving	
Oral			category 2			Annex VI	
Dermal						Data waiving	
Dermal			category 1			Annex VI	
Inhalation (gases)	LC50	Equivalent to OECD 403	2240 ppm - 2340 ppm	1 h	Rat (male)	Experimental value	
Inhalation			category 2			Annex VI	

Conclusion

Fatal if swallowed.

Fatal in contact with skin.

Fatal if inhaled.

Corrosion/irritation

hydrogen fluoride, anhydrous

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Moderately irritating	Equivalent to OECD 405		7 days	Rabbit	Experimental value	Aqueous solution
Skin	Highly corrosive	OECD 404	4 h	1; 24; 48; 72 hrs; 7; 10; 14 days	Rabbit	Experimental value	Aqueous solution

Conclusion

Causes severe skin burns and eye damage.

Respiratory or skin sensitisation

hydrogen fluoride, anhydrous

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin						Data waiving	

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

hydrogen fluoride, anhydrous

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (drinking water)	NOEL	Subacute toxicity test	< 50 ppm	Skeleton	No effect	]15;*[week(s)	Mouse (male/female)	Read-across
Dermal								Data waiving
Inhalation (gases)	NOAEL	Equivalent to OECD 412	1 ppm		No effect	15 day(s)	Rat (male/female)	Experimental value

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

hydrogen fluoride, anhydrous

Result	Method	Test substrate	Effect	Value determination
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value
Ambiguous	Equivalent to OECD 473	Chinese hamster ovary (CHO)		Experimental value
Negative without metabolic activation	Equivalent to OECD 476	Chinese hamster lung fibroblasts	No effect	Experimental value

Mutagenicity (in vivo)

hydrogen fluoride, anhydrous

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	Chromosome aberration assay	6 week(s)	Mouse (male/female)		Read-across

Carcinogenicity

hydrogen fluoride, anhydrous

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Oral (drinking water)	NOAEL	NTP	175 ppm	103 week(s)	Mouse (male/female)	Read-across		No carcinogenic effect

Reproductive toxicity

hydrogen fluoride, anhydrous

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	Equivalent to OECD 414	250 ppm	20 days (gestation, daily)	Rat (male/female)	No effect		Read-across
Maternal toxicity	NOAEL	Equivalent to OECD 414	175 ppm	20 days (gestation, daily)	Rat (female)	No effect		Read-across
Effects on fertility	NOAEL	Equivalent to OECD 416	250 ppm	14 week(s)	Rat (male/female)	No effect	Male reproductive organ	Read-across

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

hydrogen fluoride, anhydrous

No (test)data available

Chronic effects from short and long-term exposure

hydrogen fluoride, anhydrous

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Feeling of weakness. Loss of weight. Change in the haemogramme/blood composition. Lung tissue affection/degeneration. Slowing ossification. Pain in the joints. Affection/discolouration of the teeth.

SECTION 12: Ecological information

12.1. Toxicity

hydrogen fluoride, anhydrous

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		51 mg/l	96 h	Oncorhynchus mykiss			Experimental value
Acute toxicity invertebrates	EC50	US EPA	26 mg/l - 48 mg/l	96 h		Static system	Fresh water	Experimental value
Toxicity algae and other aquatic plants	EC50		43 mg/l	96 h	Scenedesmus sp.	Static system	Fresh water	Experimental value
Long-term toxicity fish	NOEC		4 mg/l	21 day(s)	Oncorhynchus mykiss	Static system	Fresh water	Experimental value
Long-term toxicity aquatic invertebrates	NOEC		8.9 mg/l	21 day(s)	Daphnia magna	Static system	Fresh water	Experimental value
Toxicity aquatic micro-organisms	NOEC	OECD 209	510 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value

	Parameter	Method	Value	Duration	Species	Value determination
Toxicity soil macro-organisms	NOEC	OECD 207	75 mg/kg soil dw	22 week(s)	Eisenia fetida	Experimental value
	NOEC		800 mg/kg bw	126 day(s)	Porcellio scaber	Experimental value
Toxicity soil micro-organisms	NOEC		340 mg/kg soil dw	63 day(s)	Soil micro-organisms	Experimental value
Toxicity terrestrial plants	NOEC		0.2 mg/m³ - 7.5 mg/m³	7 month(s)		QSAR

Conclusion

Harmful to fishes

Harmful to invertebrates (Daphnia)

Harmful to algae

pH shift

Inhibition of activated sludge

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2. Persistence and degradability

Biodegradability: not applicable

Inhibition of nitrification

12.3. Bioaccumulative potential

hydrogen fluoride, anhydrous

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		2 - 62			Literature study

Log Kow

Method	Remark	Value	Temperature	Value determination
		-1.4		Experimental value

Conclusion

Not bioaccumulative

12.4. Mobility in soil

Adsorbs into the soil

12.5. Results of PBT and vPvB assessment

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances.

12.6. Other adverse effects

hydrogen fluoride, anhydrous

Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

Not included in the list of substances which may contribute to the greenhouse effect (IPCC)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
06 01 03* (wastes from the manufacture, formulation, supply and use (MFSU) of acids: hydrofluoric acid). Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Regulation (EU) No 1357/2014.

13.1.2 Disposal methods

Recycle/reuse. Remove for physico-chemical/biological treatment. Detoxicate. Neutralize. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Use appropriate containment to avoid environmental contamination.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1. UN number

UN number	1052

14.2. UN proper shipping name

Proper shipping name	Hydrogen fluoride, anhydrous

14.3. Transport hazard class(es)

Hazard identification number	886
Class	8
Classification code	CT1

14.4. Packing group

Packing group	I
Labels	8+6.1

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
Limited quantities	none.

Rail (RID)

14.1. UN number

UN number	1052

14.2. UN proper shipping name

Proper shipping name	Hydrogen fluoride, anhydrous

14.3. Transport hazard class(es)

Hazard identification number	886
Class	8
Classification code	CT1

14.4. Packing group

Packing group	I
Labels	8+6.1

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
Limited quantities	none.

Inland waterways (ADN)

14.1. UN number

UN number	1052

14.2. UN proper shipping name

Proper shipping name	Hydrogen fluoride, anhydrous

14.3. Transport hazard class(es)

Class	8
Classification code	CT1

14.4. Packing group

Packing group	I
Labels	8+6.1

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	802
Limited quantities	none.

Sea (IMDG/IMSBC)

14.1. UN number

UN number	1052

14.2. UN proper shipping name

Proper shipping name	Hydrogen fluoride, anhydrous

14.3. Transport hazard class(es)

Class	8

14.4. Packing group

Packing group	I
Labels	8 + 6.1

14.5. Environmental hazards

Marine pollutant	-
Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
Limited quantities	none.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Annex II of MARPOL 73/78	Not applicable, based on available data

Air (ICAO-TI/IATA-DGR)

14.1. UN number

Transport	Forbidden
UN number	1052

14.2. UN proper shipping name

Proper shipping name	Hydrogen fluoride, anhydrous

14.3. Transport hazard class(es)

Class	8

14.4. Packing group

Packing group	
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	A2
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
0 %	

European drinking water standards (Directive 98/83/EC)

hydrogen fluoride, anhydrous

Parameter	Parametric value	Note	Reference
Fluoride	1,5 mg/l		Listed in Annex I, Part B, of Directive 98/83/EC on the quality of water intended for human consumption.

National legislation The Netherlands

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 06
Waterbezwaarlijkheid	9

National legislation Germany

Schwangerschaft Gruppe	C
WGK	2; Classification water polluting based on the R-phrases in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 3)
TA-Luft	5.2.4; II

National legislation France

No data available

National legislation Belgium

No data available

Other relevant data

No data available

15.2. Chemical safety assessment

A chemical safety assessment has been performed.

SECTION 16: Other information

Full text of any H-statements referred to under headings 2 and 3:

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

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and

according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.