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

1.1 Product identifier

Trade name:	Hydrofluoric Acid > 60%
CAS number:	7664-39-3
EINECS number	231-634-8
REACH registration No.:	01-211xxxxxxxxx-xxxx

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

- Production of organofluorine compounds and inorganic fluorides.
- Catalyst in alkylation reactions.
- Production and as an intermediate product of HF.
- Laboratory uses.
- Mining, enrichment and purification of minerals, metals and materials.
- Passivation of metals.
- Construction industry.
- Manufacture of diluted HF.
- Industrial cleaning of containers and pipes.
- Solar industry.

No data available of uses advised against.

Chemical basic material

1.3 Details of the supplier of the safety data sheet

Company name:	CEFIC / CTEF Sample
Street/POB-No.:	
State/city /postal code:	
World Wide Web:	www.Eurofluor.org
Email:	info@Eurofluor.org
Telephone:	
Telefax:	
Dept. responsible for information:	

1.4 Emergency telephone number

Indicate emergency phone number(s) e.g.

- The contact person within your company
- Poison centre(s)
- An official advisory body
- A competent third party provider

Indicate limitations if any (e.g. opening hours, language, types of information that can be provided). In addition, it should be confirmed with the relevant body that its number can be given.

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP):

Acute oral toxicity	category 2
Acute cutaneous toxicity	category 1
Acute inhalation toxicity	category 2
Cutaneous corrosion	category 1A

Directive 67/548/EEC: Very toxic and corrosive.

Skin Corr. 1A;	H314	Causes severe skin burns and eye damage.
Acute Toxicity 2;	H330	Fatal if inhaled.
Acute Toxicity 1;	H310	Fatal in contact with skin.
Acute Toxicity 2;	H300	Fatal if swallowed.

2.2 Label elements

Labelling (CLP)

Signal word **Danger**

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

Safety precautions	P260	Do not breathe fume/gas/mist/vapours/spray.
	P262	Do not get in eyes, on skin, or on clothing.
	P264	Wash hands and face thoroughly after handling.
	P270	Do no eat, drink or smoke when using this product.
	P271	Use only outdoors or in a well-ventilated area.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P284	Wear respiratory protection.
	P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
	P302+P350	IF ON SKIN: Gently wash with plenty of soap and water.
	P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
	P363	Wash contaminated clothing before reuse.
	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/ physician.
	P320	Specific treatment is urgent (see ' First aid ' on this label).
	P322	Specific measures (see ' First aid ' on this label).
	P403+P233	Store in a well-ventilated place. Keep container tightly closed.
	P405	Store locked up.
	P501	Dispose of contents/container to hazardous or special waste collection point.

Physico-chemical Hazars

Very volatile liquid. Its vapours, on contact with moisture, moist air, produce abundant and dense white fumes.

Hydrogen Fluoride, in absence of moisture and at ambient temperature, does not attack steel, copper, nickel aluminium or lead. On the contrary, its aqueous solutions attack most metals give off flammable gaseous hydrogen.

The more concentrated is the acid, the more intensely will react with water and alkalis.

Reacts violently with oxidant substances, giving off Fluor.

Environmental hazards

Toxic effect in fish and plankton, as well as in fixed organisms, due to a variation in pH.

Strong air pollutant.

Hazards to human health

Very toxic on inhalation, ingestion and skin contact.

It causes serious burns.

The absorption of fluoride ions in the blood by inhalation of dust or fumes, by ingestion or skin absorption can reduce serum calcium levels causing possible hypocalcaemia, as well as magnesium causing possible hypomagnesia, besides causing inhibition of vital enzymes. It can also cause dangerous and notable metabolic disorders and kidney and liver functions. In cases of prolonged and repeated exposures, the absorption of fluoride ions in the blood can cause fluorosis (fixation of calcium i the bones by fluorides).

The symptoms of overexposure to fluorides may include salivation, nauseas, vomiting, abdominal pain, diarrhoeas, fever, hard breathing.

The symptoms of severe poisoning include hard breathing, pulmonary congestion, muscular spasms, convulsions, collapse.

2.3 Other hazards

In case of a fire or deliberated heating it can cause rise in pressure with risk of bursting.

Symptoms may occur with delay.

It is not considered a PBT or vPvB substance.

Pungent, suffocating and irritating odour. Odor threshold: 0.04 ppm

No risk of dust – air explosible mixtures if dispersed

Section 3: Composition/ Information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical characterization (preparation)

Hydrofluoric acid (HF), aqueous solution (60% - 99%)

CAS-Number:	7664-39-3
EINECS-Number:	231-634-8
RTECS-Number:	MW7875000
EU-number:	009-002-00-6

Section 4: First-aid measures

4.1 Description of first aid measures

General information:

First aider:	Pay attention to self-protection! Suitable protective clothing. Consult immediately first-aid doctor. Symptoms may occur with delay. Take off immediately all contaminated clothing. Put victim at rest and keep warm.
After inhalation:	Provide fresh air. Seek medical attention immediately. Keep airway open. In case of irregular breathing or respiratory arrest provide artificial respiration. No mouth-to-mouth or mouth-to-nose artificial respiration. If victim is at risk of losing consciousness, position and transport on their side.
In case of skin contact:	Rinse with plenty of water for a maximum of 5 minutes. Call a physician in any case! Apply calcium gluconate gel (2.5%) and massage into the skin until the pain subsides, rinse with water and apply fresh gel. Continue gel therapy for at least another 15 minutes after pain has subsided. (Preparation Ca-gluconatgel: boil 5 g of calcium gluconate in 85 ml of hot distilled water, add 10 g glycerol and allow 5 g of Tylose C600 to swell in the hot solution. Keep in a cool place! If no Ca-gluconate gel is available, apply several dressings thoroughly moistened with calcium gluconate solution 10%.
After eye contact:	DO NOT DELAY! Go to the nearest eye wash or clean source of water, open the water valve, put your eye(s) in the water flow and open and close your eye lids for 5 minutes maximum. Irrigate each eye with 1 litre of a 1% calcium gluconate solution for a minimum period of 15 minutes or if necessary until medical aid is available. Obtain medical attention immediately, especially specialised ophthalmic attention.
After swallowing:	Immediately get medical attention. Do not induce vomiting. Caution: Risk of perforation in case of vomiting! Immediately give victim repeatedly drink plenty of water, add calcium (as calcium gluconate or calcium lactate). As a laxative, affected person should drink sodium sulfate (1 tablespoon in 1/4 l water).

4.2 Most important symptoms and effects, both acute and delayed

Systemic effects:	Collapse, spasms, cardiovascular disorders, liver and kidney damage.
After inhalation:	Burns, damage of respiratory tract.
	> 3 ppm: irritation to respiratory tract.
In case of ingestion:	Pain, nausea, vomiting with blood, spasms.
After contact with skin:	Causes poorly healing wounds, necrosis, pain, shortage of breath, death.

4.3 Indication of any immediate medical attention and special treatment needed

If a systemic action is suspected, monitoring and treatment in an intensive care unit is urgently required.

Caution:	Ventricular fibrillation due to electrolyte imbalance.
Attention:	several hours latency period. Counter measurements must be implemented at once.
	Treatment with Ca-Gluconate solution.

Section 5: Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media: Product is non-combustible. Extinguishing materials should therefore be selected according to surroundings.

5.2 Special hazards arising from the substance or mixture

Fires in the immediate vicinity may cause the development of dangerous vapours.

Release of: hydrogen fluoride. Seal off endangered area.

5.3 Advice for fire fighters

Special protective equipment for fire fighters: Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information: Exposure to fire may cause containers to rupture/explode.

Cool endangered containers with water spray and, if possible, remove from danger zone. Do not allow water used to extinguish fire to enter drains, ground or waterways. Treat runoff as hazardous.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep away from unprotected people. Remove persons not involved upwind. Wear a self-contained breathing apparatus and chemical protective clothing. Avoid contact with the substance. Do not breathe vapours.

Plug leak if safely possible.

6.2 Environmental precautions

Do not allow to penetrate into soil, water bodies or drains.

In case of release, notify competent authorities.

6.3 Methods and material for containment and cleaning up

Render harmless: Treat with a mixture of lime in sodium carbonate solution (precipitation as calcium fluoride). Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal.

In case of spills of large quantities: Contact expert.

Additional information: Suppress gases/vapours/mists with water spray jet.

6.4 Reference to other sections

Not required

Section 7: Handling and storage

7.1 Precautions for safe handling

7.1.1. Technical advices:

Advices on safe handling: Make sure there is sufficient air exchange and / or that working rooms are air suctioned.

Avoid aerosol and mist formation. Extract vapours by suction at point of emission.

Do not inhale substance. Use appropriate respiratory protection.

Avoid contact with liquid and vapour. Do not allow containers to stand open. Use caution when opening containers under pressure.

The material is to be handled with extreme caution.

7.1.2. General occupational hygiene advices:

Do not eat, drink and smoke in work areas

Wash your hands after use

Remove contaminated clothing and protective equipment before entering eating areas

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers: Keep container tightly closed in a cool, well-ventilated place.

Protect containers against air humidity and water.

Provide for retaining containers, eg. floor pan without outflow.

Attention: Empty containers will retain product residue and are to handle as though they are full.

Qualified materials:

Steel, internally lined steel tanks, refined steel, Nickel, Teflon, polyethylene, PVC, fluoro rubber

Unsuitable materials: Aluminium, copper, brass, glass, ceramic.

IMPORTANT: Depending on the concentration of the acid, the storage material could be suitable or not for the solution of HF. Please check STS-Group 4 “Recommendation on Materials of construction for AHF and hydrogen fluoride solutions”

Hints on joint storage: Avoid contact with alkali metals, alkaline earth metals, light metals, silicon compounds, alkalis and ammonia.

Further details: Only trained personnel may be allowed to enter storage area.

Follow local regulation to storage HF

7.3 Specific end uses

See Chapter 1.2.

Section 8: Exposure controls / Personal protection

8.1 Control parameters

Type	Limit value
Europe, IOELV: TWA	(hydrogen fluoride) 1,5 mg/m³; 1,8 ppm
Europe, IOELV: STEL	(hydrogen fluoride) 2,5 mg/m³; 3 ppm
Great Britain: WEL-TWA	(hydrogen fluoride, as F) 1,5 mg/m³; 1,8 ppm
Great Britain: WEL-STEL	(hydrogen fluoride, as F) 2,5 mg/m³; 3 ppm
Spain: VLA ED	(hydrogen fluoride) :) 1,5 mg/m³; 1,8 ppm
Spain VLA EC	(hydrogen Fluoride): 2,5 mg/m³; 3 ppm
Spain, VLA ED	(inorganic fluorides, as F, except uranium fluoride): 2,5 mg/m³

DNEL: Derived no effect level (AHF)

Exposure pattern	Route	DNEL	SYMTHOMS	
Acute and systemic local effects**)**	Inhalation	2.5 mg/m^3	Irritation (respiratory tract)	Workers
Long-term acute and systemic effects	Inhalation	1.5 mg/m^3	Irritation (respiratory tract)	Workers

PNEC: Predicted No Effect Concentration (AHF)

	PNEC
Freswater	0,9 mg/l
aqua- marine water (mg/l)	0,9 mg/l
sediments	0.766 mg/kg wwt

8.2 Exposure controls

Transfer and handle product only in closed systems.

In case of spill or release: Withdraw by suction.

Occupational exposure controls

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.

Use filter type E(-P2/P3) according to EN 141. Possible alternatives: filter B-(P2).

Carry along escape equipment (self rescuer). Have a breathing apparatus that is not dependent on the circulating air ready for emergencies.

Hand protection:

Liquid: protective gloves according to EN 374.

Glove material: Fluororubber (Viton) (0,4 mm) / Neoprene.

Breakthrough time >= 480 min.

By short-term hand contact Butyl caoutchouc (butyl rubber) (0,5 mm, max. 240 min).

Unsuitable materials: natural rubber, Nitrile rubber.

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Protective gloves have to be replaced at the first sign of deterioration.

When handling pressure gas containers wear leather gloves.

Eye protection: Tightly sealed safety glasses according to EN 166.

In case of increased risk, additionally Wear face protective shield.

Body protection: Acid-proof protective clothing, boots.

In case of handling larger quantities: Wear full protective gear.

General protection and hygiene measures:

When using do not eat or drink.

Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

Safety shower and eye wash station should be easily accessible to the work area.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property	HF 75%	HF60%
Physical state:	fuming liquid	liquid
Colour	Colourless	Colourless
Odour	Pungent	Pungent
Boiling temperature / boiling range	Aprox. 60ºC at 1030 mbar	Aprox. 85ºC at 1030 mbar
Melting point / melting range:	Aprox. -90ºC	Aprox. -42ºC
Flash point / flash point range:	not combustible	not combustible
Vapour pressure: a t 20 °C:	18 kPa at 20ºC	Aprox. 5,5 kPa at 20ºC
Density	1,23 g/cm3 at 20ºC	1,21 g/cm3 at 25ºC
pH value:	At 20ºC <1 (strongly acid)	At 20ºC <=1
Water solubility	Fully miscible	Fully miscible
Partition coefficient n-octanol / water	-1,4 log P(o/w) Bio-accumulation is not to be expected (log P(o/w) <1). Bio-accumulation is not to be expected (log P(o/w) <1). (anhydrous)	-1,4 log P(o/w) Bio-accumulation is not to be expected (log P(o/w) <1). Bio-accumulation is not to be expected (log P(o/w) <1). (anhydrous)
Viscosity, dynamic:	at 0 °C: 0,26 mPa*s (anhydrous)	at 0 °C: 0,26 mPa*s (anhydrous)

9.2 Other information

Molecular weight:	20,01 g/mol
Odour threshold:	0,03 - 0,13 mg/m³
Relative vapour density at 20 °C (air=1):	0,71
Critical temperature:	188 °C
Critical pressure:	64,85 bar
Critical density:	0,29 kg/L

Section 10: Stability and reactivity

10.1 Reactivity

Violent reaction with alkali metals, alkaline earth metals, light metals. Formation of Hydrogen.
Danger of explosion!

10.2 Chemical stability

Hygroscopic.
Corrodes metal in the presence of water or moisture. Formation of hydrofluoric acid.

10.3 Possibility of hazardous reactions

Reacts with sulphuric acid, nitric acid, ammonia and alkalis.

10.4 Conditions to avoid

Protect from humidity and water.

10.5 Incompatible materials

Methanesulphonic acid, Diarsenic trioxide, phosphorus pentaoxide, silicon compounds, glass, ceramic

10.6 Hazardous decomposition products

Hydrogen fluoride

Section 11: Toxicological information

11.1 Information on toxicological effects

After swallowing : Hydrogen fluoride has the following classification: Acute Oral Toxicity Cat 2 and corrosive Cat. 1A. A waiver is appropriate for this endpoint as the substance is corrosive and oral exposure will result in rapid tissue destruction

Inhalation: Hydrogen fluoride has the following classification: Acute inhalation toxicity Cat 2 and corrosive. No data are available. A waiver is appropriate for this endpoint as the substance is corrosive and inhalation exposure will result in rapid tissue destruction.

Dermal: Hydrogen fluoride has the following classification: acute dermal toxicity Cat 1. No trial, being corrosive an immediately cause tissue destruction. A waiver is appropriate for this endpoint as the substance is corrosive and dermal exposure will result in rapid tissue destruction

b) Skin corrosion / irritation

HF is classified as Corrosive (R35), therefore no studies are required. However some data are available and are reported. In a standard OECD 404 study performed with 5% hydrofluoric acid, Martins (1990) reports corrosive effects. Thyssen (1981) notes no local dermal effects in a study performed with 0.13% and 1.06% hydrofluoric acid. Wang *et al* reported that 20% of HF was enough to cause skin damage in the rat and might bring about fatal hypocalcaemia after a prolonged contact. High concentrations of HF (40%) caused deep tissue necrosis within a short time and resulted in fatal hypocalcaemia within 24 hours even in the case of a small area injury. Klauder *et al* (1955) reported no dermal reactions in rabbits resulting from application of 1%, 2% and 4% HF. Transitory blanching occurred at 6%, 8% and 10%. After application of 12%, 15% 18% and 22% crust formation appeared in about 24 hours at site of blanching and disappeared in about one week. Application of 25% and 30% caused blanching followed by redness, later crust formation. These effects were observed from 35% and 40% and in addition, blistering and superficial ulceration. These reactions were more pronounced from a 50% concentration and were followed by deep ulceration. The EU RAR for HF also notes that, in humans, dermal contact with HF can cause second and third degree burns which are associated with severe pain and which heal very slowly.

c) Serious eye damage / irritation

The undiluted substance is corrosive to eyes and skin; therefore direct contact must be avoided through the use of appropriate engineering controls and personal protective equipment (PPE).

However some data are available and are reported. Thyssen (1981) notes no ocular effects with 0.13% hydrofluoric acid and only moderate irritation with 1.06% hydrofluoric acid.

d) Respiratory or skin sensitation

Based on available data, the classification criteria are not met

e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

(f) carcinogenicity
Based on available data, the classification criteria are not met

(g) reproductive toxicity
Based on available data, the classification criteria are not met

(h) STOT-single exposure
Based on available data, the classification criteria are not met

i) STOT-repeated exposure
Based on available data, the classification criteria are not met

(j) aspiration hazard
highly toxic and corrosive substance that causes rapid destruction of tissue by inhalation.
LC50 - rat: 4970, 2690, 2040 y 1310 ppm with exposures of de 5, 15, 30 y 60 minutes respectively. It causes eye and nasal irritation and respiratory problems.
LC50 – rat: 18200 ppm 5 min. Causes death in 24 hours by lung aedema
LC50 – Guinea Pig : 4327 ppm / 5 min.
Based on available data, the classification criteria are not met

General remarks

Attention: several hours latency period. Counter measurements must be implemented at once.

Section 12: Ecological information

12.1 Toxicity

Aquatic toxicity: Toxic effect on fishes and plankton. Harmful effects by modification of pH-value. Forms corrosive mixtures with water even if diluted.

Water Hazard Class: 2 = hazardous to water (WGK catalogue number 254)

12.2. Persistence and degradability

Further details: No data available

Effects in sewage plants: Do not release undiluted and unneutralized to the sewer.

12.3 Bio accumulative potential

Bio concentration factor (BCF) No data available

The product has bioaccumulative potential in aquatic organisms.

12.4 Mobility in soil

No data available

The product has low mobility in soil. The soil natural alkalinity will slowly drive away the acidity. Soil will strongly bind fluoride if the pH is >6.5. High calcium content will also immobilize fluorides.

12.5 Results of PBT and vPvB assessment

Not applicable. It is not considered a PBT or vPvB substance.

12.6 Other adverse effects

General information: Do not allow to enter into ground-water, surface water or drains. Danger to drinking water.

Large leakages of HF to the aquatic environment could lead to over acidification with resultant damage to aquatic life.

Soluble fluoride may be toxic to aquatic organisms.

Section 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number 060103: hydrofluoric acid.

Dispose of waste according to applicable legislation.

Neutralize larger quantities with lime or other alkalis. Dispose of in accordance with local, state, and federal regulations. Contact expert.

Contaminated packaging

Recommendation:	Carriage on tank wagon/Carriage on tank-lorry.
Attention:	Containers will enclose product residues and vapours after being emptied.
	Emptying/filling by specialized personnel only.

Follow local waste disposal regulation.

Use as much quantity of product as possible in the production cycle.

Residual solutions of hydrofluoric acid should be adequately treated before being evacuated. Residual solutions should be neutralized with an alkali being recommended lime better than sodium hydroxide. Add this alkali carefully, or in diluted solution form, to prevent excessive heat generation.

Treatment of containers

Use as much quantity of product as possible in the production cycle.

Eliminate by washing out small quantities of acid, neutralize with an alkali. Ensure that containers are completely neutralized before treating them as inert or recyclable material.

Other information

Before any elimination procedure, take advice of the national, autonomic and local legislation in force.

In Spain, the rules 11/97 – Packing and residues of packing-, and 10/98 –Residues rule-, are compulsory.

An authorized waste manager, or the product manufacturer, could cooperate / advise on such disposal.

Section 14: Transport information

14.1 UN number

ADR, IMDG, IATA: 1790

14.2 UN proper shipping name

ADR / RID HYDROFLUORIC ACID, with more than 85% of hydrogen fluoride
HYDROFLUORIC ACID, with more than 60% but no more than 85% of hydrogen fluoride
IMDG: HYDROFLUORIC ACID, with more than 60% of hydrogen fluoride
IATA: Forbidden

14.3 Transport hazard class(es)

ADR: Class 8, Code: CT1
RID Class 8, Code: CT1
IMDG: Class 8, Code 6.1
IATA: Forbidden

14.4 Packing group

ADR, IMDG: **I**

14.5 Environmental hazards

Marine Pollutant No

14.6 Special precautions for user

Land transport (ADR/RID)

Warning board: ADR/RID: Kemmler-number 886, UN number 1790
Hazard label 8+6.1
Limited quantities 0
EQ E0
Packing instructions P802 (> 85%)
P001 (>60% < = 85%)
Special provisions for packing together MP2 (> 85%)
MP8, MP17 (>60% <=85%)
Portable tanks: Instructions T10
Portable tanks: Special provisions TP2
Tank coding L21DH(+) (> 85%)
L10DH (>60% <=85%)

Tunnel restriction code: 1 (C/D)

Sea transport (IMDG)

EmS:	F-C, S-U
Special provisions	-
Limited quantities	None
EQ	E0
Packing instructions	P802 (> 85%)
	P001 (>60% < = 85%)

Contaminated packaging: Provisions	-
IBC: Instructions	-
IBC: Provisions	-
Tank instructions: IMO	-
Tank instructions: UN	T10
Tank instructions Provisions	TP2
Stowage and segregation	Category D. Clear of living quarters.
Properties and observations	Colourless, fuming and highly volatile liquid with an irritating and pungent odour. Highly corrosive to metals and glass in the presence of moisture. Boiling point: 20°C. Toxic if swallowed, by skin contact or by inhalation. Causes severe burns to skin, eyes and mucous membranes.

Air transport (IATA)

Passenger Ltd.Qty.:	Forbidden - Maximum quantity: Forbidden
Passenger:	Forbidden - Maximum quantity: Forbidden
Cargo: Forbidden - Maximum quantity:	Forbidden
Special Provisioning	A2
ERG	8P

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not bulk transportation

Section 15: Regulatory information

- Regulation EC 2015/830 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), as amended
- Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances, as amended
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, as amended
- Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended
- COUNCIL DIRECTIVE 96/82/EC on the control of major-accident hazards involving dangerous substances as amended
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste

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

National regulations - Great Britain

Hazchem-Code: 2XE

National regulations - Germany

Storage class: 2A = Compressed, liquefied or dissolved gases
Water Hazard Class: 2 = hazardous to water (WGK catalogue number 254)
Incident regulation: Nr. 1
Information on working limitations: Observe employment restrictions concerning young persons.
Observe employment restrictions for expectant or nursing mothers.

National regulations - USA

TSCA Inventory: listed; EPA flags T
TSCA HPVC: not listed

Clean Air Act:

Accidental Release Prevention:	Threshold 1000 lbs. / Basis for listing = a,b
Hazardous Air Pollutants:	Code X

Clean Water Act:

Hazardous Substances:	RQ 100 lbs.

Other Environmental Laws:

CERCLA:	RQ 100 lbs.
RCRA Hazardous Wastes:	Code U134
SARA Title III Section 302, EHS:	TPQ 100 lbs. / RQ 100 lbs.
SARA Title III Section 313, Toxic Release:	Conc. 1.0% / Threshold Standard

NIOSH Recommendations:

Occupational Health Guideline:	0334

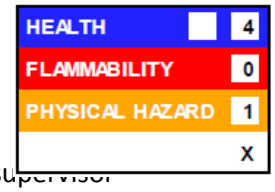
OSHA Process Safety Management: Threshold 1000 lbs.

Hazard rating systems: NFPA Hazard Rating:

Health:	4 (Severe)
Fire:	0 (Minimal)
Reactivity:	1 (Slight)

HMIS Version III Rating:

Health:	4 (Severe)
Flammability:	0 (Minimal)
Physical Hazard:	1 (Slight)
Personal Protection:	X = Consult your supervisor



15.2 Chemical safety assessment

No data available

Section 16: Other information

Further remarks

Reason of change: New Regulations

Literature:

Group that issues data sheet

Contact person: see chapter 1, department responsible for information.

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.

Prevention advises. P PHRASES

P260: Do not breathe dust/fume/gas/mist/vapours/ spray.

P264: Wash with water thoroughly after handling.

P361: Remove/Take off immediately all contaminated clothing.

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician

P405: Store locked up.

P501: Dispose of contents/container to comply with legal regulations.

The changes in this safety data sheet with respect to the previous revision are indicated in bold.

Any chemical product may be handled in safe conditions if its physicochemical and toxicological properties are known, and technical methods and appropriate organising measures are used, as well as adequate personal protective equipment.

The information provided in this safety data sheet is based on our current knowledge. However, the data provided and the recommendations made do not imply warranty. It is the responsibility of the user to determine the conditions for safe use of this product.

This safety data sheet has been prepared based on Regulation 2015/830 of the Commission on May 28, 2015 amending Regulation (EC) No. 1907/2006 of the European parliament and Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)