



Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Hydrofluoric acid 20%

Version number: 11.0
Replaces version of: 2015-08-07

Revision: 2017-12-08
First version: 2006-04-06

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

1.1 Product identifier

Trade name	<u>Hydrofluoric acid 20%</u>
Registration number (REACH)	not relevant (mixture)
CAS number	not relevant (mixture)

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

Relevant identified uses	Industrial uses Chemicals for various applications Surface treatment Laboratory chemicals Catalyst Intermediate
Uses advised against	Do not use for squirting or spraying Do not use for products which come into direct contact with the skin Do not use for private purposes (household)

1.3 Details of the supplier of the safety data sheet

BERGHEMIE J.C.Bröcking & Co. GmbH Rudolfstrasse 14 42285 Wuppertal Germany	Telephone: ++49 (0) 202 - 45 60 60 Telefax: ++49 (0) 202 / 44 79 32
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e-mail (competent person) sdb@csb-online.de

Please do not use this e-mail adress to ask for the latest safety data sheet. For this purpose contact BERGHEMIE J.C.Bröcking & Co. GmbH.

National contact telephone:

1.4 Emergency telephone number

As above or next toxicological information centre.

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Classification				
Section	Hazard class	Category	Hazard class and category	Hazard statement
2.16	substance or mixture corrosive to metals	1	Met. Corr. 1	H290
3.10	acute toxicity (oral)	2	Acute Tox. 2	H300
3.1D	acute toxicity (dermal)	1	Acute Tox. 1	H310
3.1I	acute toxicity (inhal.)	3	Acute Tox. 3	H331
3.2	skin corrosion/irritation	1A	Skin Corr. 1A	H314
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318

for full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis.

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word danger

Pictograms

GHS05, GHS06



Hazard statements

H290 May be corrosive to metals.
H300+H310 Fatal if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.
H331 Toxic if inhaled.

Precautionary statements

P234 Keep only in original container.
P260 Do not breathe mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower.

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Precautionary statements

- 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.
P310 Immediately call a POISON CENTER/doctor.
P405 Store locked up.

Hazardous ingredients for labelling hydrofluoric acid

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.


SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

Hazardous ingredients					
Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Specific Conc. Limits
hydrofluoric acid	CAS No 7664-39-3 EC No 231-634-8 Index No 009-003-00-1 REACH Reg. No 01-2119458860-33	20	Met. Corr. 1 / H290 Acute Tox. 2 / H300 Acute Tox. 1 / H310 Acute Tox. 2 / H330 Skin Corr. 1A / H314 Eye Dam. 1 / H318		Skin Corr. 1A; H314: C ≥ 7 % Skin Corr. 1B; H314: 1 % ≤ C < 7 % Eye Dam. 1; H318: C ≥ 1 % Eye Irrit. 2; H319: 0.1 % ≤ C < 1 %

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SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Self-protection of the first aider.

Remove victim out of the danger area.

Take off immediately all contaminated clothing.

Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.

In all cases of doubt, or when symptoms persist, seek medical advice.

In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

Provide fresh air.

Mouth to mouth resuscitation should be avoided. Use alternative methods, preferably with oxygen or compressed air driven apparatus.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap.

Rub with a gel containing calcium gluconate.

Call a physician immediately. Causes poorly healing wounds.

Following eye contact

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Remove contact lenses, if present and easy to do. Continue rinsing.

Rinse copiously with a calcium gluconate solution.

Following ingestion

Rinse mouth immediately and drink plenty of water.

Do NOT induce vomiting.

1%ige Calciumgluconat-Lösung in kleinen Schlucken trinken lassen (wenn nicht verfügbar: ersatzweise Milch oder Kreideaufschwemmung, sonst Wasser).

Call a physician in any case.

Notes for the doctor

none

4.2 Most important symptoms and effects, both acute and delayed

Nausea, Vomiting.

Causes poorly healing wounds.

Fatal if swallowed, in contact with skin or if inhaled.

Causes severe skin burns and eye damage.

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4.3 Indication of any immediate medical attention and special treatment needed

Decontamination techniques.
Rinse copiously with a calcium gluconate solution.
Rub with a gel containing calcium gluconate.
Subsequent observance for pneumonia and pulmonary oedema.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings

Unsuitable extinguishing media

none

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.
Substance or mixture corrosive to metals.

Hazardous combustion products

hydrogen fluoride (HF), pyrolysis products, toxic, Corrosive gases / vapors

5.3 Advice for firefighters

Non-combustible.
In case of fire and/or explosion do not breathe fumes.
Co-ordinate firefighting measures to the fire surroundings.
Do not allow firefighting water to enter drains or water courses.
Collect contaminated firefighting water separately.
Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

use suitable breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.
Ventilate affected area.
Do not get in eyes, on skin, or on clothing.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

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For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.
Warning and evacuating people in the neighbourhood.

6.2 Environmental precautions

In case of formation of gases/vapours/mists suppress with water spray
Keep away from drains, surface and ground water.
Retain contaminated washing water and dispose of it.
If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advices on how to clean up a spill

Collect spillage.
Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Neutralisation techniques.
Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal.
Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Local and general ventilation.
Avoid contact with skin and eyes.
Handle and open container with care.

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.
Never add water to this product.
Non-combustible.

Specific notes/details

Avoid exposure - obtain special instructions before use.

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Handling of incompatible substances or mixtures

Do not mix with alkali.
Do not mix with oxidiser

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Never keep food or drink in the vicinity of chemicals.
Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Corrosive conditions

Store in corrosive resistant container with a resistant inner liner.

Flammability hazards

None.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat, frost, sunlight

Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.
Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Store locked up.
Keep container tightly closed and in a well-ventilated place.
Keep in a cool place.

Packaging compatibilities

Keep only in original container.
Only packagings which are approved (e.g. acc. to ADR) may be used.

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7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)								
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Source
EU	hydrogen fluoride	7664-39-3	IOELV	1.8	1.5	3	2.5	2017/164/EU
GB	hydrogen fluoride	7664-39-3	WEL	1.8	1.5	3	2.5	EH40/2005

Notation

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average

Relevant DNELs of components of the mixture						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
hydrofluoric acid	7664-39-3	DNEL	1.5 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
hydrofluoric acid	7664-39-3	DNEL	1.5 µg/m ³	human, inhalatory	worker (industry)	chronic - local effects

Relevant PNECs of components of the mixture				
Name of substance	CAS No	Endpoint	Threshold level	Environmental compartment
hydrofluoric acid	7664-39-3	PNEC	0.9 mg/l	freshwater
hydrofluoric acid	7664-39-3	PNEC	0.9 mg/l	marine water
hydrofluoric acid	7664-39-3	PNEC	51 mg/l	sewage treatment plant (STP)
hydrofluoric acid	7664-39-3	PNEC	11 mg/kg	soil

8.2 Exposure controls

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Appropriate engineering controls

Local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Use safety goggles with side protection.

Wear face-shield.

Hand protection

Material	Material thickness	Breakthrough times of the glove material
FKM: fluoro-elastomer	≥ 0,4 mm	>480 minutes (permeation: level 6)

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

In the case of wanting to use the gloves again, clean them before taking off and air them well.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Type: E (against acidic gases like sulphur dioxide or hydrogen chloride, colour code: Yellow).

E-P2/P3.

Self-contained breathing apparatus.

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid
Form	fluid
Colour	colourless
Odour	stinging
Odour threshold	these information are not available

Other safety parameters

pH (value)	<1 (20 °C), acid
Melting point/freezing point	~-30 °C, (40%)
Initial boiling point and boiling range	~108 °C
Flash point	not applicable

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Evaporation rate	these information are not available
Flammability (solid, gas)	not relevant (fluid)
Explosive limits	
Lower explosion limit (LEL)	these information are not available
Upper explosion limit (UEL)	these information are not available
Vapour pressure	13 hPa at 20 °C 43 Pa at 40 °C (40%)
Density	1.06 g/cm ³ at 20 °C (40%)
Vapour density	these information are not available
Relative density	these information are not available
Solubility(ies)	
Water solubility	miscible in any proportion
Partition coefficient	
n-octanol/water (log KOW)	these information are not available
Auto-ignition temperature	these information are not available
Relative self-ignition temperature for solids	not relevant (Fluid)
Decomposition temperature	these information are not available
Viscosity	
Kinematic viscosity	these information are not available
Dynamic viscosity	these information are not available
Explosive properties	not explosive
Oxidising properties	shall not be classified as oxidising
9.2 Other information	
None	

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SECTION 10: Stability and reactivity

10.1 Reactivity

Substance or mixture corrosive to metals.
Reactions with light metals to form hydrogen.

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

Strong exothermic reaction with strong alkalis, Oxidiser
Light metals (due to the release of hydrogen in an acid/alkaline medium).

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
May be corrosive to metals.
Frost.
Containments may explode when heated.

10.5 Incompatible materials

bases, oxidisers, alkali metal, metal, sulphuric acid, Chlorsulfonsäure (chlorosulfonic acid), fluorine, permanganates, e.g. potassium permanganate, phosphorus oxides (P_xO_y), glass

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

As a result of heating:

hydrogen fluoride (HF)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification procedure

If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Fatal if swallowed.
Fatal in contact with skin.
Toxic if inhaled.

Acute toxicity estimate (ATE)

Oral	25 mg/kg
Dermal	25 mg/kg
Inhalation: vapour	2.5 mg/l/4h

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Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	CAS No	Exposure route	ATE
hydrofluoric acid	7664-39-3	oral	5 mg/kg
hydrofluoric acid	7664-39-3	dermal	5 mg/kg
hydrofluoric acid	7664-39-3	inhalation: vapour	0.5 mg/l/4h

Skin corrosion/irritation

Causes severe skin burns and eye damage.

Classification procedure

The classification is based on an extreme pH value.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Skin sensitisation

Shall not be classified as a skin sensitiser.

Respiratory sensitisation

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

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SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

Test data are not available for the complete mixture.

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Method	Source	Exposure time
hydrofluoric acid	7664-39-3	EC50	48 mg/l	aquatic invertebrates		ECHA	96 h

Aquatic toxicity (chronic)

Test data are not available for the complete mixture.

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Method	Source	Exposure time
hydrofluoric acid	7664-39-3	NOEC	4 mg/l	rainbow trout (Oncorhynchus mykiss)		ECHA	21 d

12.2 Persistence and degradability

Biodegradation

The study does not need to be conducted, the relevant substances in the mixture are inorganic.

Persistence

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components of the mixture

Name of substance	CAS No	BCF
hydrofluoric acid	7664-39-3	53 – 58

12.4 Mobility in soil

Data are not available.

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12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects

Data are not available.

Endocrine disrupting potential

None of the ingredients are listed.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 2

Do not empty into drains or surface water.

PH extreme: Before discharge of the waste water into a municipal waste water treatment facility the product normally needs to be neutralised.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1	UN number	1790
14.2	UN proper shipping name	HYDROFLUORIC ACID
14.3	Transport hazard class(es)	
	Class	8
	Subsidiary risk(s)	6.1 (acute toxicity)
14.4	Packing group	II
14.5	Environmental hazards	non-environmentally hazardous acc. to the dangerous goods regulations

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14.6 Special precautions for user


Provisions for dangerous goods (ADR) should be complied within the premises.

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

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

UN number	1790
Proper shipping name	UN1790, HYDROFLUORIC ACID, 8 (6.1), II, (E)
Class	8
Classification code	CT1
Packing group	II
Danger label(s)	8+6.1
	
Special provisions (SP)	802(ADN)
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
Transport category (TC)	2.
Tunnel restriction code (TRC)	E
Hazard identification No	86
Emergency Action Code	2W

International Maritime Dangerous Goods Code (IMDG)

UN number	1790
Proper shipping name	UN1790, HYDROFLUORIC ACID, 8 (6.1), II
Class	8
Subsidiary risk(s)	6.1
Marine pollutant	-
Packing group	II
Danger label(s)	8+6.1

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Special provisions (SP)	-
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-A, S-B
Stowage category	D
Segregation group	1 - Acids.

International Civil Aviation Organization (ICAO-IATA/DGR)

UN number	1790
Proper shipping name	UN1790, Hydrofluoric acid, 8 (6.1), II
Class	8
Subsidiary risk(s)	6.1
Packing group	II
Danger label(s)	8+6.1



Excepted quantities (EQ)	E2
Limited quantities (LQ)	0,5 L

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)				
Name of substance	Name acc. to inventory	Type of registration	Restriction	No
Hydrofluoric acid 20%	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC	1907/2006/EC annex XVII	R3	3
hydrofluoric acid	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC	1907/2006/EC annex XVII	R3	3

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Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

none of the ingredients are listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

none of the ingredients are listed

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

none of the ingredients are listed

Regulation 98/2013/EU on the marketing and use of explosives precursors

none of the ingredients are listed

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier. Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Indication of changes: Section 1, 2, 7, 8, 10, 11, 12, 15

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2017/164/EU	Comission Directive establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU
Acute Tox.	Acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)

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Abbr.	Descriptions of used abbreviations
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
Met. Corr.	Substance or mixture corrosive to metals
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STEL	Short-term exposure limit
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

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Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.
Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties.

Health hazards.

Environmental hazards.

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H290	May be corrosive to metals.
H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H331	Toxic if inhaled.

Responsible for the safety data sheet

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Disclaimer

This information is based upon the present state of our knowledge.

This SDS has been compiled and is solely intended for this product.