

# Safety Data Sheet

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

( EN / D )

**Trade name :** Lithofin RSG

**Revision date :** 04.06.2025

**Version (Revision) :** 7.1.0 (7.0.1)

**Print date :** 15.07.2025

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

### 1.1 Product identifier

Lithofin RSG

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

#### Relevant identified uses

Mixture Etching agent containing hydrofluoric acid/fluorid

#### Remark

The product is intended for professional use.

### 1.3 Details of the supplier of the safety data sheet

**Supplier :** Lithofin AG  
**Street :** Heinrich-Otto-Str. 36  
**Postal code/City :** 73240 Wendlingen  
**Country :** GERMANY  
**Telephone :** +49 7024 9403 0  
**Telefax :** +49 7024 9403 40  
**Contact :** Technical Department  
**E-mail :** info@lithofin.de

**Emergency telephone number :** +49 7024 9403 0  
(Only available during office hours)

### 1.4 Emergency telephone number

see section 1.3

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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

Acute Tox. 4 ; H302 - Acute toxicity (oral) : Category 4 ; Harmful if swallowed.

Skin Corr. 1B ; H314 - Skin corrosion/irritation : Category 1B ; Causes severe skin burns and eye damage.

Eye Dam. 1 ; H318 - Serious eye damage/eye irritation : Category 1 ; Causes serious eye damage.

#### Additional information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

#### Remark

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

### 2.2 Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

##### Hazard pictograms



Corrosion (GHS05) · Exclamation mark (GHS07)

##### Signal word

Danger

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## Hazard components for labelling

AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7

FLUOROSILIC ACID 3 % ; CAS No. : 16961-83-4

## Hazard statements

H314 Causes severe skin burns and eye damage.

H302 Harmful if swallowed.

## Precautionary statements

P102 Keep out of reach of children.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local and national regulations.

## Other labelling

### 2.3 Other hazards

#### Adverse environmental effects

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

### 2.4 Additional information

see section 12.5

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Hazardous ingredients

AMMONIUM BIFLUORIDE ; REACH No. : 01-2119489180-38-xxxx ; EC No. : 215-676-4; CAS No. : 1341-49-7

Weight fraction :  $\geq 5 - < 10$  %

Classification 1272/2008 [CLP] : Acute Tox. 3 ; H301 Skin Corr. 1B ; H314 Eye Dam. 1 ; H318

Specific Conc. Limits : Eye Dam. 1 ; H318: C  $\geq 1$  % • Skin Corr. 1B ; H314: C  $\geq 1$  % • Skin Corr. 1C ; H314: C  $\geq 1$  % • Eye Irrit. 2 ; H319: C  $\geq 0,1$  % • Skin Irrit. 2 ; H315: C  $\geq 0,1$  %

FLUOROSILIC ACID ; REACH No. : 01-2119488906-19-xxxx ; EC No. : 241-034-8; CAS No. : 16961-83-4

Weight fraction :  $\geq 1 - < 3$  %

Classification 1272/2008 [CLP] : Skin Corr. 1B ; H314 Eye Dam. 1 ; H318

AMMONIUM FLUORIDE ; EC No. : 235-185-9; CAS No. : 12125-01-8

Weight fraction :  $< 0,5$  %

Classification 1272/2008 [CLP] : Acute Tox. 3 ; H301 Acute Tox. 3 ; H311 Acute Tox. 3 ; H331

#### Contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH

None (below the concentration limit)

#### Contains the following substances of very high concern (SVHC) which are subject to authorisation according to Annex XIV of REACH

None (below the concentration limit)

#### Additional information

All ingredients of this mixture are (pre)registered according to REACH regulation.

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

## SECTION 4: First aid measures

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#### 4.1 Description of first aid measures

##### General information

When in doubt or if symptoms are observed, get medical advice. Never give anything by mouth to an unconscious person or a person with cramps. If unconscious but breathing normally, place in recovery position and seek medical advice.

##### Following inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. In case of respiratory tract irritation, consult a physician.

##### In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Wash immediately with: Ca-Gluconate solution Immediately remove any contaminated clothing, shoes or stockings. Do not wash with: Cleaning agent, acidic Cleaning agent, alkaline Solvents/Thinner

##### After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye.

##### Following ingestion

Call a physician immediately. Keep at rest. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting.

##### Self-protection of the first aider

First aider: Pay attention to self-protection!

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

No information available.

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

##### Notes for the doctor

Treat symptomatically.

##### Special treatment

First Aid, decontamination, treatment of symptoms.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Water spray jet ABC-powder Foam

##### Unsuitable extinguishing media

Full water jet Strong water jet

#### 5.2 Special hazards arising from the substance or mixture

##### Hazardous combustion products

Carbon monoxide Carbon dioxide (CO<sub>2</sub>) Hydrogen fluoride

#### 5.3 Advice for firefighters

Use suitable breathing apparatus.

##### Special protective equipment for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

#### 5.4 Additional information

Use water spray jet to protect personnel and to cool endangered containers. Do not allow run-off from fire-fighting to enter drains or water courses. Do not inhale explosion and combustion gases. The product itself does not burn. Coordinate fire-fighting measures to the fire surroundings.

### SECTION 6: Accidental release measures

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### 6.1 Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment (refer to section 8). Provide adequate ventilation. Remove persons to safety.

### 6.2 Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

### 6.3 Methods and material for containment and cleaning up

#### For cleaning up

Suitable material for taking up: Universal binder

Clean contaminated articles and floor according to the environmental legislation. Retain contaminated washing water and dispose it. Dispose of waste according to applicable legislation.

#### Other information

Clear spills immediately.

### 6.4 Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

When using do not eat, drink, smoke, sniff.

#### Protective measures

All work processes must always be designed so that the following is excluded: Inhalation of vapours or spray/mists  
Skin contact Eye contact Wear personal protection equipment (refer to section 8). Always close containers tightly after the removal of product. Do not breathe gas/fumes/vapour/spray. Use only in well-ventilated areas. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means. Technical measures and the application of suitable work processes have priority over personal protection equipment.

#### Measures to prevent fire

The product is not: Flammable Usual measures for fire prevention.

**Fire class :** -

**Shake well before use** nein

#### Advices on general occupational hygiene

P362+P364 - Take off contaminated clothing and wash it before reuse.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Requirements for storage rooms and vessels

Keep container tightly closed. Keep/Store only in original container. The floor should be leak tight, jointless and not absorbent. Ensure adequate ventilation of the storage area.

#### Hints on joint storage

**Storage class (TRGS 510) :** 8B

**Protect from frost** nein

**Recommended storage temperature** 5 - 25 °C

#### Further information on storage conditions

Keep locked up and out of reach of children. Keep container tightly closed in a cool, well-ventilated place.

### 7.3 Specific end use(s)

#### Recommendation

Observe technical data sheet. Observe instructions for use.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

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**Occupational exposure limit values**

AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7

Limit value type (country of origin) : KZW ( A )

Limit value : 12,5 mg/m<sup>3</sup>

Peak limitation : 30Miw

Remark : as F

Version :

Limit value type (country of origin) : TMW / TWA ( A )

Limit value : 2,5 mg/m<sup>3</sup>

Remark : as F

Version :

Limit value type (country of origin) : TWA ( B )

Limit value : 2,5 mg/m<sup>3</sup>

Remark : as F

Version :

Limit value type (country of origin) : BAT ( CH )

Parameter : Fluorides / Urine (U) / End of exposure or end of shift

Limit value : 4 mg/l / 211 µmol/L

Version :

Limit value type (country of origin) : KZG / STEL ( CH )

Parameter : E: inhalable fraction

Limit value : 4 mg/m<sup>3</sup>

Remark : SSc, H, B

Version :

Limit value type (country of origin) : MAK ( CH )

Parameter : E: inhalable fraction

Limit value : 1 mg/m<sup>3</sup>

Remark : SSc, H, B

Version :

Limit value type (country of origin) : TRGS 900 ( D )

Parameter : E: inhalable fraction

Limit value : 1 mg/m<sup>3</sup>

Peak limitation : 2(II)

Version : 17.06.2024

Limit value type (country of origin) : TRGS 903 ( D )

Parameter : Fluorides / Urine (U) / End of exposure or end of shift

Limit value : 4 mg/l

Version : 10.10.2024

Limit value type (country of origin) : TWA ( DK )

Limit value : 2,5 mg/m<sup>3</sup>

Remark : E

Version :

Limit value type (country of origin) : VLA-ED / TWA ( E )

Limit value : 2,5 mg/m<sup>3</sup>

Remark : VLB, VLI

Version :

Limit value type (country of origin) : TWA ( EC )

Limit value : 2,5 mg/m<sup>3</sup>

Version : 09.03.2022

Limit value type (country of origin) : VLEP 8h / TWA ( F )

Limit value : 2,5 mg/m<sup>3</sup>

Version :

Limit value type (country of origin) : TWA ( GB )

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Limit value : 2,5 mg/m<sup>3</sup>  
Remark : inorganic as F  
Version :

Limit value type (country of origin) : ÁK ( H )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as F, b, i, BEM, F-ra számí  
Version :

Limit value type (country of origin) : TWA ( I )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : Fluoruri inorganici (espressi come F)  
Version :

Limit value type (country of origin) : OELV 8h / TWA ( IRL )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : IOELV  
Version :

Limit value type (country of origin) : TWA ( N )  
Limit value : 0,5 mg/m<sup>3</sup>  
Remark : as F, E  
Version :

Limit value type (country of origin) : TGG 8 uur / TWA ( NL )  
Limit value : 2 mg/m<sup>3</sup>  
Remark : as F  
Version :

Limit value type (country of origin) : ACGIH TLV ( USA )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as f  
Version :

Limit value type (country of origin) : NIOSH REL TWA ( USA )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as F  
Version :

Limit value type (country of origin) : OSHA PEL TWA ( USA )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as F  
Version :

Limit value type (country of origin) : TWA ( AUS )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : Sk  
Version :

Limit value type (country of origin) : TWA ( NZ )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as F; bio  
Version :

Limit value type (country of origin) : TWA ( ROK )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as F  
Version :

FLUOROSILIC ACID ; CAS No. : 16961-83-4  
Limit value type (country of origin) : TWA ( EC )  
Limit value : 2,5 mg/m<sup>3</sup>  
Version : 09.03.2022

AMMONIUM FLUORIDE ; CAS No. : 12125-01-8  
Limit value type (country of origin) : KZW ( A )

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Limit value : 12,5 mg/m<sup>3</sup>  
Peak limitation : 30MIW, 2x  
Version :

Limit value type (country of origin) : TMW / TWA ( A )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as F  
Version :

Limit value type (country of origin) : TWA ( B )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as F  
Version :

Limit value type (country of origin) : BAT ( CH )  
Parameter : Fluorides / Urine (U) / End of exposure or end of shift  
Limit value : 4 mg/l / 211 µmol/L  
Version :

Limit value type (country of origin) : KZG / STEL ( CH )  
Parameter : E: inhalable fraction  
Limit value : 4 mg/m<sup>3</sup>  
Remark : SSc, H, B  
Version :

Limit value type (country of origin) : MAK ( CH )  
Parameter : E: inhalable fraction  
Limit value : 1 mg/m<sup>3</sup>  
Remark : SSc, H, B  
Version :

Limit value type (country of origin) : TRGS 900 ( D )  
Parameter : E: inhalable fraction  
Limit value : 2,5 mg/m<sup>3</sup>  
Peak limitation : 2(II)  
Version : 17.06.2024

Limit value type (country of origin) : TRGS 903 ( D )  
Parameter : Fluorides / Urine (U) / End of exposure or end of shift  
Limit value : 4 mg/l  
Version : 10.10.2024

Limit value type (country of origin) : TWA ( DK )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : E  
Version :

Limit value type (country of origin) : VLA-ED / TWA ( E )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : VLB, VLI  
Version :

Limit value type (country of origin) : TWA ( EC )  
Limit value : 2,5 mg/m<sup>3</sup>  
Version : 09.03.2022

Limit value type (country of origin) : VLEP 8h / TWA ( F )  
Limit value : 2,5 mg/m<sup>3</sup>  
Version :

Limit value type (country of origin) : TWA ( GB )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : inorganic as F  
Version :

Limit value type (country of origin) : ÁK ( H )

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Limit value : 2,5 mg/m<sup>3</sup>  
Remark : b, i, BEM, F-ra számí  
Version :

Limit value type (country of origin) : TWA ( I )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : Fluoruri inorganici (espressi come F)  
Version :

Limit value type (country of origin) : OELV 8h / TWA ( IRL )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : IOELV  
Version :

Limit value type (country of origin) : TWA ( N )  
Limit value : 0,5 mg/m<sup>3</sup>  
Remark : as F, E  
Version :

Limit value type (country of origin) : TGG 8 uur / TWA ( NL )  
Limit value : 2 mg/m<sup>3</sup>  
Remark : as F  
Version :

Limit value type (country of origin) : ACGIH TLV ( USA )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as F, BEI  
Version :

Limit value type (country of origin) : NIOSH REL TWA ( USA )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as F  
Version :

Limit value type (country of origin) : OSHA PEL TWA ( USA )  
Limit value : 2,5 mg/m<sup>3</sup>  
Remark : as F  
Version :

**DNEL-/PNEC-values**

**DNEL/DMEL**

AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7

Limit value type : DNEL Consumer (systemic)  
Exposure route : Inhalation  
Exposure frequency : Long-term  
Limit value : 0,045 mg/m<sup>3</sup>

Limit value type : DNEL Consumer (systemic)  
Exposure route : Oral  
Exposure frequency : Long-term  
Limit value : 0,015 mg/kg/d

Limit value type : DNEL worker (local)  
Exposure route : Inhalation  
Exposure frequency : Long-term  
Limit value : 3,8 mg/m<sup>3</sup>

Limit value type : DNEL worker (systemic)  
Exposure route : Inhalation  
Exposure frequency : Long-term  
Limit value : 2,3 mg/m<sup>3</sup>

FLUOROSILIC ACID ; CAS No. : 16961-83-4

Limit value type : DNEL Consumer (systemic)  
Exposure route : Inhalation  
Exposure frequency : Short-term

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Limit value : 3,15 mg/m<sup>3</sup>  
Limit value type : DNEL worker (systemic)  
Exposure route : Inhalation  
Exposure frequency : Long-term  
Limit value : 1,89 mg/m<sup>3</sup>  
AMMONIUM FLUORIDE ; CAS No. : 12125-01-8  
Limit value type : DNEL worker (local)  
Exposure route : Inhalation  
Exposure frequency : Long-term  
Limit value : 2,5 mg/m<sup>3</sup>  
Limit value type : DNEL worker (systemic)  
Exposure route : Dermal  
Exposure frequency : Short-term  
Limit value : 0,36 mg/kg bw/day  
Limit value type : DNEL worker (systemic)  
Exposure route : Dermal  
Exposure frequency : Long-term  
Limit value : 0,36 mg/kg bw/day  
Limit value type : DNEL worker (systemic)  
Exposure route : Inhalation  
Exposure frequency : Short-term  
Limit value : 2,5 mg/m<sup>3</sup>  
Limit value type : DNEL worker (systemic)  
Exposure route : Inhalation  
Exposure frequency : Long-term  
Limit value : 2,5 mg/m<sup>3</sup>

**PNEC**

AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7  
Limit value type : PNEC (Aquatic, freshwater)  
Limit value : 1,3 mg/l  
Limit value type : PNEC (Soil)  
Limit value : 22 mg/kg  
Limit value type : PNEC (Sewage treatment plant)  
Limit value : 76 mg/l  
FLUOROSILIC ACID ; CAS No. : 16961-83-4  
Limit value type : PNEC (Aquatic, freshwater)  
Limit value : 1,8 mg/l  
Limit value type : PNEC (Aquatic, marine water)  
Limit value : 0,9 mg/l  
Limit value type : PNEC (Sediment, freshwater)  
Limit value : 36,6 mg/kg dw  
Limit value type : PNEC (Sediment, marine water)  
Limit value : 7,32 mg/kg dw  
Limit value type : PNEC (Soil)  
Limit value : 2,85 mg/kg dw  
Limit value type : PNEC (Sewage treatment plant)  
Limit value : 64,24 mg/l  
AMMONIUM FLUORIDE ; CAS No. : 12125-01-8  
Limit value type : PNEC (Aquatic, freshwater)  
Limit value : 0,89 mg/l  
Limit value type : PNEC (Soil)  
Limit value : 11 mg/kg dw  
Limit value type : PNEC (Sewage treatment plant)  
Limit value : 51 mg/l

**8.2 Exposure controls**

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## Appropriate engineering controls

Ensure adequate ventilation of the storage area.  
Technical measures and the application of suitable work processes have priority over personal protection equipment.

## Personal protection equipment

### Eye/face protection

#### Suitable eye protection

Eye glasses with side protection goggles

#### Required properties

EN 166

### Skin protection

#### Hand protection

**Suitable gloves type :** Gloves with long cuffs

**Suitable material :** Data apply to the main component. Butyl caoutchouc, 0,5mm, >8h; FKM (fluoro rubber), 0,7mm, >8h;

**Required properties :** EN ISO 374

**Recommended glove articles :** Manufacturer KCL GmbH/Eichenzell-Germany; Ansell/Yarra City-Australia Or comparable articles from other companies.

**Additional hand protection measures :** Check leak tightness/impermeability prior to use.

**Remark :** Breakthrough times and swelling properties of the material must be taken into consideration. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Barrier creams are not substitutes for body protection.

#### Body protection

Protective clothing.

**Suitable protective clothing :** Chemical protection clothing Chemical resistant safety shoes

**Required properties :** acid-resistant.

Protective clothing. : EN 13034 EN 14605

Chemical resistant safety shoes : EN ISO 20345

**Remark :** Barrier creams are not substitutes for body protection.

### Respiratory protection

Usually no personal respirative protection necessary. Respiratory protection necessary at: insufficient ventilation aerosol or mist formation. high concentrations spray application

#### Suitable respiratory protection apparatus

Full-/half-/quarter-face masks (EN 136/140) Combination filtering device ABEK-P1

#### Remark

Use only respiratory protection equipment with CE-symbol including four digit test number. Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

### General information

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500. When using do not eat, drink, smoke, sniff. Avoid contact with skin, eyes and clothes. Remove contaminated, saturated clothing immediately. Wash contaminated clothing prior to re-use. Wash hands before breaks and after work. Apply skin care products after work. Do not breathe gas/fumes/vapour/spray.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**Appearance :** Liquid

**Colour :** colourless

**Odour :** odourless

#### Safety characteristics

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<b>Melting point/freezing point :</b>	( 1013 hPa )	approx.	-3	°C	
<b>Initial boiling point and boiling range :</b>	( 1013 hPa )	approx.	100	°C	
<b>Decomposition temperature :</b>	( 1013 hPa )		not determined		
<b>Flash point :</b>			not applicable		closed cup (EN ISO 3679)
<b>Auto-ignition temperature :</b>			not determined		
<b>Sustaining combustion</b>			No		UN Test L2:Sustained combustibility test
<b>Lower explosion limit :</b>			not determined		
<b>Upper explosion limit :</b>			not determined		
<b>Vapour pressure :</b>	( 50 °C )	<	3000	hPa	
<b>Density :</b>	( 20 °C )		1,05	g/cm <sup>3</sup>	Pyknometer (DIN EN ISO 2811-1)
<b>Relative density :</b>	( 20 °C )		not determined		
<b>Solvent separation test :</b>	( 20 °C )	<	3	%	Test L1: Solvent separation test (UN)
<b>Water solubility</b>	( 20 °C )		miscible		
<b>Fat solubility :</b>	( 20 °C )		Not determined.		
<b>pH :</b>		approx.	2		DIN 19268
<b>log P O/W :</b>			not determined		(Mixture)
<b>Flow time :</b>	( 23 °C )	<	15	s	ISO cup 4 mm (DIN EN ISO 2431)
<b>Odour threshold :</b>			not determined		
<b>Vapourisation rate :</b>			not determined		
<b>VOC content-EC</b>			0	Weight-%	*
<b>VOC content-EC</b>			0	g/l	*
<b>VOC-France</b>			not applicable		Décret no 2011-321 du 23 mars 2011
<b>Flammable solids :</b>		Not determined.			

(\* VOC-EC = „Volatile organic compound (VOC)“ means any organic compound having an initial boiling point less than or equal to 250°C measured at a standard pressure of 101,3 kPa; VOC-value in g/L)

## 9.2 Other information

None

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

### 10.2 Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

### 10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

### 10.4 Conditions to avoid

Stable under recommended storage and handling conditions.

### 10.5 Incompatible materials

The product develops hydrogen in an aqueous solution in contact with metals.

### 10.6 Hazardous decomposition products

Does not decompose when used for intended uses.

## SECTION 11: Toxicological information

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

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### Acute toxicity

Harmful: possible risk of irreversible effects if swallowed.

#### Acute oral toxicity

Parameter :	LD50 ( AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7 )
Exposure route :	Oral
Effective dose :	123,57 mg/kg
Parameter :	LD50 ( AMMONIUM FLUORIDE ; CAS No. : 12125-01-8 )
Exposure route :	Oral
Species :	Rat
Effective dose :	223 mg/kg dry weight

#### Acute dermal toxicity

Parameter :	LD50 ( AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7 )
Exposure route :	Dermal
Effective dose :	> 2000 mg/kg
Method :	OECD 401
Parameter :	LD50 ( AMMONIUM FLUORIDE ; CAS No. : 12125-01-8 )
Exposure route :	Dermal
Species :	Rat
Effective dose :	> 2000 mg/kg dry weight

#### Acute inhalation toxicity

Parameter :	LC50 ( AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7 )
Exposure route :	Inhalation
Effective dose :	> 5 mg/l
Exposure time :	4 h
Parameter :	LC50 ( AMMONIUM FLUORIDE ; CAS No. : 12125-01-8 )
Exposure route :	Inhalation
Species :	Rat
Effective dose :	1 mg/l
Exposure time :	4 h

### Specific effects (Longterm animal experiment)

There are no data available on the preparation/mixture itself.

### Corrosion

Causes severe skin burns and eye damage.

### Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

### Repeated dose toxicity (subacute, subchronic, chronic)

There are no data available on the preparation/mixture itself.

### CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

#### Carcinogenicity

Based on available data, the classification criteria are not met.

#### Germ cell mutagenicity

Based on available data, the classification criteria are not met.

#### Reproductive toxicity

Based on available data, the classification criteria are not met.

### STOT-single exposure

Based on available data, the classification criteria are not met.

### STOT-repeated exposure

Based on available data, the classification criteria are not met.

### Aspiration hazard

Based on available data, the classification criteria are not met.

## 11.2 Information on other hazards

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No information available.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Aquatic toxicity

Based on available data, the classification criteria are not met.

##### Acute (short-term) fish toxicity

Parameter : LC50 ( AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7 )

Species : Fish

Evaluation parameter : Acute (short-term) fish toxicity

Effective dose : 421,4 mg/l

Exposure time : 96 hour(s)

Parameter : LC50 ( FLUOROSILIC ACID ; CAS No. : 16961-83-4 )

Species : Fish

Evaluation parameter : Acute (short-term) fish toxicity

Effective dose : 50 mg/l

Exposure time : 96 hour(s)

Parameter : LC50 ( AMMONIUM FLUORIDE ; CAS No. : 12125-01-8 )

Species : Fish

Evaluation parameter : Acute (short-term) fish toxicity

Effective dose : 51 mg/l

Exposure time : 96 hour(s)

##### Chronic (long-term) fish toxicity

Parameter : NOEC ( AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7 )

Species : Fish

Evaluation parameter : Chronic (long-term) fish toxicity

Effective dose : 4 mg/l

Exposure time : 21 day(s)

Parameter : NOEC ( FLUOROSILIC ACID ; CAS No. : 16961-83-4 )

Species : Fish

Evaluation parameter : Chronic (long-term) fish toxicity

Effective dose : 83,9 mg/l

Exposure time : 32 day(s)

Parameter : NOEC ( AMMONIUM FLUORIDE ; CAS No. : 12125-01-8 )

Species : Fish

Evaluation parameter : Chronic (long-term) fish toxicity

Effective dose : 4 mg/l

Exposure time : 21 day(s)

##### Acute (short-term) toxicity to aquatic invertebrates

Parameter : EC50 ( AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7 )

Species : Daphnia

Evaluation parameter : Acute (short-term) toxicity to aquatic invertebrates

Effective dose : 26 - 48 mg/l

Exposure time : 96 hour(s)

Parameter : EC50 ( FLUOROSILIC ACID ; CAS No. : 16961-83-4 )

Species : Daphnia

Evaluation parameter : Acute (short-term) toxicity to aquatic invertebrates

Effective dose : 32,8 mg/l

Exposure time : 48 hour(s)

Parameter : LC50 ( AMMONIUM FLUORIDE ; CAS No. : 12125-01-8 )

Species : Daphnia

Evaluation parameter : Acute (short-term) toxicity to aquatic invertebrates

Effective dose : 26 mg/l

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Exposure time : 96 hour(s)

**Chronic (long-term) toxicity to aquatic invertebrate**

Parameter : NOEC ( AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7 )  
Species : Daphnia  
Evaluation parameter : Chronic (long-term) toxicity to aquatic invertebrate  
Effective dose : 8,9 mg/l  
Exposure time : 21 day(s)  
Parameter : NOEC ( FLUOROSILIC ACID ; CAS No. : 16961-83-4 )  
Species : Daphnia  
Evaluation parameter : Chronic (long-term) toxicity to aquatic invertebrate  
Effective dose : 18 - 3 mg/l  
Parameter : NOEC ( AMMONIUM FLUORIDE ; CAS No. : 12125-01-8 )  
Species : Daphnia  
Evaluation parameter : Chronic (long-term) toxicity to aquatic invertebrate  
Effective dose : 8,9 mg/l  
Exposure time : 21 day(s)

**Acute (short-term) toxicity to algae and cyanobacteria**

Parameter : EC50 ( AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7 )  
Species : Algae  
Evaluation parameter : Acute (short-term) toxicity to algae and cyanobacteria  
Effective dose : 43 mg/l  
Parameter : EC50 ( FLUOROSILIC ACID ; CAS No. : 16961-83-4 )  
Species : Algae  
Evaluation parameter : Acute (short-term) toxicity to algae and cyanobacteria  
Effective dose : 54,2 mg/l  
Exposure time : 96 hour(s)  
Parameter : EC50 ( AMMONIUM FLUORIDE ; CAS No. : 12125-01-8 )  
Species : Algae  
Evaluation parameter : Acute (short-term) toxicity to algae and cyanobacteria  
Effective dose : 43 mg/l

**Chronic (long-term) toxicity to aquatic algae and cyanobacteria**

Parameter : NOEC ( AMMONIUM BIFLUORIDE ; CAS No. : 1341-49-7 )  
Species : Algae  
Evaluation parameter : Chronic (long-term) toxicity to aquatic algae and cyanobacteria  
Effective dose : 50 mg/l  
Parameter : NOEC ( FLUOROSILIC ACID ; CAS No. : 16961-83-4 )  
Species : Algae  
Evaluation parameter : Chronic (long-term) toxicity to aquatic algae and cyanobacteria  
Effective dose : 63 mg/l  
Parameter : NOEC ( AMMONIUM FLUORIDE ; CAS No. : 12125-01-8 )  
Species : Fish  
Evaluation parameter : Chronic (long-term) toxicity to aquatic algae and cyanobacteria  
Effective dose : 50 mg/l

**Sewage treatment plant**

Observe local regulations concerning effluent treatment. Before discharge into sewage plants the product normally needs to be neutralised.

**12.2 Persistence and degradability**

There are no data available on the preparation/mixture itself.

**Biodegradation**

The surfactants contained in this mixture comply with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

**12.3 Bioaccumulative potential**

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There are no data available on the preparation/mixture itself.

## 12.4 Mobility in soil

There are no data available on the preparation/mixture itself.

## 12.5 Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

## 12.6 Endocrine disrupting properties

No information available.

## 12.7 Other adverse effects

There are no data available on the preparation/mixture itself.

## 12.8 Additional ecotoxicological information

### Additional information

The product has not been tested.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Dispose of waste according to applicable legislation.

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

#### Directive 2008/98/EC (Waste Framework Directive)

##### Before intended use

##### Waste codes/waste designations according to EWC/AVV

Waste code (EWC/AVV) : 16 03 03\* (inorganic wastes containing hazardous substances)

##### After intended use

Do not allow to enter into surface water or drains. Non-contaminated packages may be recycled. Packing which cannot be properly cleaned must be disposed of. Delivery to an approved waste disposal company.

##### Disposal operations

Contaminated packages must be completely emptied and can be re-used following proper cleaning. Packing which cannot be properly cleaned must be disposed of.

##### Waste codes/waste designations according to EWC/AVV

Waste code packaging: 15 01 10\*

### 13.2 Additional information

These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use.

## SECTION 14: Transport information

### 14.1 UN number or ID number

UN 1760

### 14.2 UN proper shipping name

#### Land transport (ADR/RID)

CORROSIVE LIQUID, N.O.S. ( AMMONIUM BIFLUORIDE · FLUOROSILICIC ACID )

#### Sea transport (IMDG)

CORROSIVE LIQUID, N.O.S. ( AMMONIUM BIFLUORIDE · FLUOROSILICIC ACID )

#### Air transport (ICAO-TI / IATA-DGR)

CORROSIVE LIQUID, N.O.S. ( AMMONIUM BIFLUORIDE · FLUOROSILICIC ACID )

### 14.3 Transport hazard class(es)

#### Land transport (ADR/RID)

**Class(es) :** 8  
**Classification code :** C9  
**Hazard identification number (Kemler No.) :** 80

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**Tunnel restriction code :** E  
**Special Provisions :** LQ 1 | · E 2  
**Hazard label(s) :** 8

**Sea transport (IMDG)**  
**Class(es) :** 8  
**EmS-No. :** F-A / S-B  
**Special Provisions :** LQ 1 | · E 2 · IMDG-Code segregation group 1 - Acids  
**Hazard label(s) :** 8

**Air transport (ICAO-TI / IATA-DGR)**  
**Class(es) :** 8  
**Special Provisions :** E 2  
**Hazard label(s) :** 8

#### 14.4 Packing group

II

#### 14.5 Environmental hazards

Land transport (ADR/RID) : No

Sea transport (IMDG) : No

Air transport (ICAO-TI / IATA-DGR) : No

#### 14.6 Special precautions for user

None

#### 14.7 Maritime transport in bulk according to IMO instruments

Not required.

### SECTION 15: Regulatory information

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

##### EU legislation

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labelling and packaging of substances and mixtures (clp)

DIRECTIVE 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on waste (2000/532/EC)  
EN 2:1992 (DIN EN 2:2005-01)

##### Authorisations and/or restrictions on use

###### Restrictions on use

###### Regulation (EC) No. 1907/2006 (REACH), Annex XVII (restrictions)

Use restriction according to REACH annex XVII, no. : 3, 65, 75

###### Restrictions of occupation

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).  
Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

##### Other regulations (EU)

Regulation (EC) No. 648/2004 [Detergents regulation]

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. (Directive 2000/39/EC, Directive 2006/15/EC, Directive 2009/161/EC)

##### Regulation (EU) 2024/590 on substances that deplete the ozone layer

Not listed/not relevant.

Contains the following substances that deplete the ozone layer: -

##### Regulation (EC) 2019/1021 [POP Regulation]

Not listed/not relevant.

Name of the persistent organic pollutant (POP): -

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## Regulation (EU) 2019/1148 (marketing and use of explosives precursors)

Not listed/not relevant.

## Regulation (EU) 649/2012 (PIC)

Not listed/not relevant.

Chemicals qualifying for PIC notification: -

## National regulations

Observe in addition any national regulations!

Germany:

TRGS 400 (Risk assessment for activities involving hazardous substances)

TRGS 500 (Protective measures)

TRGS 510 (Storage of hazardous substances in non-stationary containers)

TRGS 555 (Working instruction and information for workers)

## Water hazard class

Classification according to AwSV - Class : 1 (Slightly hazardous to water)

## Other regulations, restrictions and prohibition regulations

### Switzerland

#### VOCV-Regulation

Maximum VOC content (Switzerland) : 0 Weight-% according to VOCV

## 15.2 Chemical Safety Assessment

For this substance/mixture a chemical safety assessment has not been carried out.

## SECTION 16: Other information

### 16.1 Indication of changes

02. Label elements

### 16.2 Abbreviations and acronyms

ABC-Pulver	Extinguishing powder for fire class A, B and C
ABEK-P1	combination filter
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AVV	Abfallverzeichnis-Verordnung (Waste Regulation)
AWSV	Ordinance on facilities for the handling of substances hazardous to water
BGR	BG rules and regulations
ca.	circa
CAS	Chemical Abstracts Service
CLP	classification, labelling and packaging
CMR	Carcinogen, mutagen or toxic for reproduction
DIN	German Institute for Standardization
DNEL	Derived No-Effect Level
EAK/EWC/EAC/CWR/CER	European Waste Catalogue
EC50 / CE50	Effective Concentration 50%
EG / EC / CE	European Community
EN	European Standard
EUH	supplemental hazard statement of the european union
GefStoffV	Gefahrstoffverordnung (Hazardous Substances Ordinance)
GHS / SGH	Globally Harmonised System
H-Sätze	hazard statements
IATA-DGR	International Air Transport Association-Dangerous Goods Regulations
IBC-Code	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

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ICAO-TI	International Civil Aviation Organization-Technical Instructions
IMDG-Code	International Maritime Dangerous Goods Code
ISO	International Organization for Standardization
LC50 / CL50	Lethal Concentration 50%
LD50 / DL50	Lethal Dose 50%
log P O/W	Partition coefficient n-octanol/water
MARPOL	International Convention for the Prevention of Pollution from Ships (marine pollution)
NOAEL (DSET)	No observed adverse effect level
NOEC (CSEO)	No observed effect concentration
Nr.	Number
OECD	Organisation for Economic Co-operation and Development
PBT	persistent, bioaccumulative and toxic
pH	Potentia hydrogenii
PIC	prior informed consent
PNEC	Predicted No-Effect Concentration
POP	Persistent organic pollutants
P-Sätze	precautionary statements
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	International Carriage of Dangerous Goods by Rail
STEL / LECT	short-term exposure limit
TRGS	Technische Regeln für Gefahrstoffe (Technical Rules for Hazardous Substances)
TWA / MPT	time-weighted average
UN/ONU	United Nations
VOC/COV/VOS/LZO	Volatile Organic Compound
VOCV	Ordinance on the Incentive Tax on Volatile Organic Compounds (SR 814.018)
vPvB	very persistent and very bioaccumulative
WGK	Wassergefährdungsklasse (Water hazard class)

For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>. For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

## 16.3 Key literature references and sources for data

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
ECHA: Registered substances (<https://echa.europa.eu/information-on-chemicals/registered-substances>)  
REACH Article 59: Candidate List of substances of very high concern for Authorisation  
(<https://echa.europa.eu/candidate-list-table>)

## 16.4 Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Hazard statements for physical hazards : On basis of test data.  
Hazard statements for health hazards : Calculation method.  
Hazard statements for environmental hazards : Calculation method.

## 16.5 Relevant H- and EUH-phrases (Number and full text)

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.

## 16.6 Training advice

None

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**16.7 Additional information**

None

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The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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