

MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

Product form : Substance
:
EC Index-No. : 009-010-00-X
EC-No. : 240-898-3
CAS-No. : 16872-11-0
Product code : 03857
Formula : HBF₄
Chemical structure :



Synonyms : Fluoboric acid, Tetrafluoroboric acid

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial
For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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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]

Skin corrosion/irritation, H314
Category 1B

Full text of H statements : see section 16

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Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

C; R34

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS05

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H314 - Causes severe skin burns and eye damage.

Precautionary statements (CLP) :

P280 - Wear protective clothing, protective gloves, eye protection, face protection.
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

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : FLUOROBORIC ACID For Synthesis
CAS-No. : 16872-11-0
EC-No. : 240-898-3
EC Index-No. : 009-010-00-X

Full text of R- and H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
First-aid measures after skin contact : Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER/doctor.

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- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

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

- Symptoms/effects : Causes severe skin burns and eye damage.
- Symptoms/effects after skin contact : Causes severe burns.
- Symptoms/effects after eye contact : Causes serious eye damage.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Foam. Dry powder. Carbon dioxide.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Use personal protective equipment as required.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not breathe dust, fume, gas, spray, vapours, mist. Avoid contact with skin and eyes.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations.
- Storage conditions : Keep container tightly closed. Store in original container. Store in a well-ventilated place. Keep cool.

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7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

| | |
|--------------------------|--|
| Hand protection | : Protective gloves |
| Eye protection | : Chemical goggles or face shield |
| Skin and body protection | : Wear suitable protective clothing |
| Respiratory protection | : [In case of inadequate ventilation] wear respiratory protection. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|---------------------------|
| Physical state | : Liquid |
| Molecular mass | : 87.81 g/mol |
| Colour | : Clear Colorless. |
| Odour | : odourless. |
| Odour threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : 130 °C |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : 3 |
| Relative density | : No data available |
| Density | : 1.84 g/cm ³ |
| Solubility | : Water: Soluble in water |
| Log Pow | : No data available |

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| | |
|----------------------|---------------------|
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Serious eye damage, category 1, implicit

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

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SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

| | |
|---------------|--------|
| UN-No. (ADR) | : 1775 |
| UN-No. (IMDG) | : 1775 |
| UN-No. (IATA) | : 1775 |
| UN-No. (ADN) | : 1775 |
| UN-No. (RID) | : 1775 |

14.2. UN proper shipping name

| | |
|---------------------------------------|--|
| Proper Shipping Name (ADR) | : FLUOROBORIC ACID |
| Proper Shipping Name (IMDG) | : FLUOROBORIC ACID |
| Proper Shipping Name (IATA) | : Fluoroboric acid |
| Proper Shipping Name (ADN) | : FLUOROBORIC ACID |
| Proper Shipping Name (RID) | : FLUOROBORIC ACID |
| Transport document description (ADR) | : UN 1775 FLUOROBORIC ACID, 8, II, (E) |
| Transport document description (IMDG) | : UN 1775 FLUOROBORIC ACID, 8, II |
| Transport document description (IATA) | : UN 1775 Fluoroboric acid, 8, II |
| Transport document description (ADN) | : UN 1775 FLUOROBORIC ACID, 8, II |
| Transport document description (RID) | : UN 1775 FLUOROBORIC ACID, 8, II |

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14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 8

Danger labels (ADR) : 8



IMDG

Transport hazard class(es) (IMDG) : 8

Danger labels (IMDG) : 8



IATA

Transport hazard class(es) (IATA) : 8

Hazard labels (IATA) : 8



ADN

Transport hazard class(es) (ADN) : 8

Danger labels (ADN) : 8



RID

Transport hazard class(es) (RID) : 8

Danger labels (RID) : 8



14.4. Packing group

Packing group (ADR) : II

Packing group (IMDG) : II

Packing group (IATA) : II

Packing group (ADN) : II

Packing group (RID) : II

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14.5. Environmental hazards

| | |
|-------------------------------|--|
| Dangerous for the environment | : No |
| Marine pollutant | : No |
| Other information | : No supplementary information available |

14.6. Special precautions for user

- Overland transport

| | |
|---|---------------|
| Classification code (ADR) | : C1 |
| Limited quantities (ADR) | : 1I |
| Excepted quantities (ADR) | : E2 |
| Packing instructions (ADR) | : P001, IBC02 |
| Mixed packing provisions (ADR) | : MP15 |
| Portable tank and bulk container instructions (ADR) | : T7 |
| Portable tank and bulk container special provisions (ADR) | : TP2 |
| Tank code (ADR) | : L4BN |
| Vehicle for tank carriage | : AT |
| Transport category (ADR) | : 2 |
| Hazard identification number (Kemler No.) | : 80 |
| Orange plates | : |



| | |
|-------------------------------|------|
| Tunnel restriction code (ADR) | : E |
| EAC code | : 2X |

- Transport by sea

| | |
|------------------------------------|---|
| Packing instructions (IMDG) | : P001 |
| IBC packing instructions (IMDG) | : IBC02 |
| Tank instructions (IMDG) | : T7 |
| Tank special provisions (IMDG) | : TP2 |
| EmS-No. (Fire) | : F-A |
| EmS-No. (Spillage) | : S-B |
| Stowage category (IMDG) | : A |
| Properties and observations (IMDG) | : Colourless, clear liquid. Corrosive to most metals. May cause severe burns to skin, eyes and mucous membranes if containing free hydrofluoric acid. |
| MFAG-No | : 154 |

- Air transport

| | |
|--|--------|
| PCA Excepted quantities (IATA) | : E2 |
| PCA Limited quantities (IATA) | : Y840 |
| PCA limited quantity max net quantity (IATA) | : 0.5L |
| PCA packing instructions (IATA) | : 851 |
| PCA max net quantity (IATA) | : 1L |
| CAO packing instructions (IATA) | : 855 |
| CAO max net quantity (IATA) | : 30L |
| ERG code (IATA) | : 8L |

- Inland waterway transport

| | |
|---------------------------|-------|
| Classification code (ADN) | : C1 |
| Limited quantities (ADN) | : 1 L |
| Excepted quantities (ADN) | : E2 |

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Equipment required (ADN) : PP, EP
Number of blue cones/lights (ADN) : 0

- Rail transport

Classification code (RID) : C1
Limited quantities (RID) : 1L
Excepted quantities (RID) : E2
Packing instructions (RID) : P001, IBC02
Mixed packing provisions (RID) : MP15
Portable tank and bulk container instructions (RID) : T7
Portable tank and bulk container special provisions (RID) : TP2
Tank codes for RID tanks (RID) : L4BN
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE6
Hazard identification number (RID) : 80

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

FLUOROBORIC ACID For Synthesis is not on the REACH Candidate List

FLUOROBORIC ACID For Synthesis is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 1, low hazard to water (Classification according to AwSV; ID No. 1300)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

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Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-statements:

| | |
|---------------|--|
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| H314 | Causes severe skin burns and eye damage. |
| R34 | Causes burns |
| C | Corrosive |

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product