# SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

# Ammonium fluoride

| | | | |
|---|---|---|---|
| Creation date | 05th September 2019 | Version | 4.0 |
| Revision date | 17th April 2026 | | |

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

**1.1. Product identifier** — Ammonium fluoride

| | |
|---|---|
| Substance / mixture | substance |
| Chemical name | ammonium fluoride |
| CAS number | 12125-01-8 |
| Index number | 009-006-00-8 |
| EC (EINECS) number | 235-185-9 |

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

**Substance's intended use**

Chemical production, analytical chemistry, laboratory synthesis, industrial applications.

**Substance uses advised against**

The product should not be used in ways other than those referred in Section 1.

**1.3. Details of the supplier of the safety data sheet**

**Supplier**

| | |
|---|---|
| Name or trade name | Ing. Petr Švec - PENTA s.r.o. |
| Address | Radiová 1122/1, Praha 10, 102 00<br>Czech Republic |
| Identification number (CRN) | 02096013 |
| VAT number | CZ02096013 |
| Phone | +420 226 060 681 |
| Email | info@pentachemicals.eu |
| Web address | www.pentachemicals.eu |

**Competent person responsible for the safety data sheet**

| | |
|---|---|
| Name | Ing. Petr Švec - PENTA s.r.o. |
| Email | info@pentachemicals.eu |

**1.4. Emergency telephone number**

European emergency number: 112 112

## SECTION 2: Hazards identification

**2.1. Classification of the substance or mixture**

**Classification of the substance in accordance with Regulation (EC) No 1272/2008**

The substance is classified as dangerous.

Acute Tox. 3, H301+H311+H331

**Most serious adverse effects on human health and the environment**

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

**2.2. Label elements**

**Hazard pictogram**

**Signal word**

Danger

**Dangerous substance**

ammonium fluoride
(Index: 009-006-00-8; CAS: 12125-01-8)

**Hazard statements**

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

# SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

# Ammonium fluoride

| | | | |
|---|---|---|---|
| Creation date | 05th September 2019 | Version | 4.0 |
| Revision date | 17th April 2026 | | |

**Precautionary statements**

| | |
|---|---|
| P261 | Avoid breathing dust. |
| P280 | Wear protective gloves/protective clothing. |
| P311 | Call a doctor. |

### 2.3. Other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended. Does not contain any PMT or vPvM components. Dust may form explosive mixture with air.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

**Chemical characterization**

The substance specified below.

| Identification numbers | Substance name | Content in % weight | Classification according to Regulation (EC) No 1272/2008 | Note |
|---|---|---|---|---|
| | **substance main component** | | | |
| Index: 009-006-00-8<br>CAS: 12125-01-8<br>EC: 235-185-9 | ammonium fluoride | >97 | Acute Tox. 3, H301+H311+H331 | 1 |

**Notes**

1 *The use of the substance is restricted by Annex XVII of REACH Regulation*

Full text of all classifications and hazard statements is given in the section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

**If inhaled**

Terminate the exposure immediately; move the affected person to fresh air. Take care of your own safety, do not let the affected person walk! Beware of the contaminated clothes. Depending on the situation, call the medical rescue service and ensure medical treatment considering the frequent need of further observation for at least 24 hours.

**If on skin**

Remove contaminated clothes. Take off any rings, watches, bracelets before or during washing if worn in the contaminated areas of the skin. Rinse contaminated areas with a flow of water, lukewarm at best, for 10-30 minutes; do not use any brush, soap or neutralizers. Depending on the situation, call the medical rescue service and always ensure medical treatment.

**If in eyes**

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

**If swallowed**

Give the affected person water (no more than two glasses). Seek medical attention immediately. Only in exceptional cases, if medical treatment is not available within one hour, induce vomiting (only in fully conscious persons), administer activated charcoal (20-40 g in 10% slurry) and transport to a doctor as soon as possible.

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

**If inhaled**

Not expected.

**If on skin**

Not expected.

**If in eyes**

Not expected.

**If swallowed**

Irritation, nausea.

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

Symptomatic treatment.

## SECTION 5: Firefighting measures

**5.1. Extinguishing media**

**Suitable extinguishing media**

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

**Unsuitable extinguishing media**

Water - full jet.

**5.2. Special hazards arising from the substance or mixture**

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

**5.3. Advice for firefighters**

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8.

**6.2. Environmental precautions**

Prevent contamination of the soil and entering surface or ground water.

**6.3. Methods and material for containment and cleaning up**

Place the product mechanically in an appropriate manner. Dispose of the collected material according to the instructions in the section 13.

**6.4. Reference to other sections**

See the Section 7, 8 and 13.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Prevent formation of gases and vapours in concentrations exceeding the occupational exposure limits. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection.

**7.2. Conditions for safe storage, including any incompatibilities**

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Store locked up.

**7.3. Specific end use(s)**

not available

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

none

# SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

# Ammonium fluoride

| | | | |
|---|---|---|---|
| Creation date | 05th September 2019 | Version | 4.0 |
| Revision date | 17th April 2026 | | |

**8.2. Exposure controls**

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

**Eye/face protection**

not available

**Skin protection**

Hand protection: Protective gloves resistant to the product. When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

| Glove material | Thickness | Breakthrough time | Class |
|---|---|---|---|
| Butyl rubber (IIR) | ≥ 0.3 mm | >480 min | 6 |

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection.

**Thermal hazard**

Not available.

**Environmental exposure controls**

Observe usual measures for protection of the environment, see Section 6.2.

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

| | |
|---|---|
| Physical state | solid |
| Colour | data not available |
| Odour | data not available |
| Melting point/freezing point | data not available |
| Boiling point or initial boiling point and boiling range | data not available |
| Flammability | data not available |
| Lower and upper explosion limit | data not available |
| Flash point | data not available |
| Auto-ignition temperature | data not available |
| Decomposition temperature | data not available |
| pH | 6 (undiluted) |
| Kinematic viscosity | data not available |
| Solubility in water | 820 g/l |
| Partition coefficient n-octanol/water (log value) | -4.37 |
| Vapour pressure | data not available |
| Density and/or relative density | data not available |
| Relative vapour density | data not available |
| Particle characteristics | data not available |

**9.2. Other information**

not available

## SECTION 10: Stability and reactivity

**10.1. Reactivity**

The substance is non-flammable.

**10.2. Chemical stability**

The product is stable under normal conditions.

**10.3. Possibility of hazardous reactions**

Unknown.

**10.4. Conditions to avoid**

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

**10.5. Incompatible materials**

Protect against strong acids, bases and oxidizing agents.

**10.6. Hazardous decomposition products**

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

## SECTION 11: Toxicological information

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

No toxicological data is available for the substance. Hazardous substances in concentrations exceeding exposure limits may cause acute inhalation poisoning, depending on the concentration and duration of exposure.

**Acute toxicity**

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

| ammonium fluoride | | | | | | |
|---|---|---|---|---|---|---|
| Route of exposure | Parameter | Value | Exposure time | Species | Sex | Value determination |
| Dermal | $LD_{50}$ | 300.1 mg/kg | | | | Expert opinion |
| Oral | $LD_{50}$ | 223 mg/kg | | | | Expert opinion |
| Inhalation (dust/mist) | $LC_{50}$ | 1 mg/l | | | | |

**Skin corrosion/irritation**

No data available for the substance. Based on available data the classification criteria are not met.

**Serious eye damage/irritation**

No data available for the substance. Based on available data the classification criteria are not met.

**Respiratory or skin sensitisation**

No data available for the substance. Based on available data the classification criteria are not met.

**Germ cell mutagenicity**

No data available for the substance. Based on available data the classification criteria are not met.

**Carcinogenicity**

No data available for the substance. Based on available data the classification criteria are not met.

**Reproductive toxicity**

No data available for the substance. Based on available data the classification criteria are not met.

**Toxicity for specific target organ - single exposure**
No data available for the substance. Based on available data the classification criteria are not met.

**Toxicity for specific target organ - repeated exposure**
No data available for the substance. Based on available data the classification criteria are not met.

**Aspiration hazard**
No data available for the substance. Based on available data the classification criteria are not met.

**11.2. Information on other hazards**

**Endocrine disrupting properties**
Based on available data the classification criteria are not met. Does not contain any components that may cause endocrine disruption for humans.

**Other information**
not available

## SECTION 12: Ecological information

**12.1. Toxicity**
No data available for the substance. Based on available data the classification criteria are not met.

**12.2. Persistence and degradability**
No data available for the substance.

**12.3. Bioaccumulative potential**
No data available for the substance.

**12.4. Mobility in soil**
Based on available data the classification criteria are not met. Does not contain any PMT or vPvM components.

**12.5. Results of PBT and vPvB assessment**
Based on available data the classification criteria are not met. Does not contain any PBT or vPvB components. Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

**12.6. Endocrine disrupting properties**
Based on available data the classification criteria are not met. Does not contain any components that may cause endocrine disruption in the environment.

**12.7. Other adverse effects**
Not available.

## SECTION 13: Disposal considerations

**13.1. Waste treatment methods**
Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Perfectly cleaned containers can be submitted for recycling.

**Waste management legislation**
Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

## SECTION 14: Transport information

**14.1. UN number or ID number**
UN 2505

# SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

# Ammonium fluoride

| | | | |
|---|---|---|---|
| Creation date | 05th September 2019 | Version | 4.0 |
| Revision date | 17th April 2026 | | |

**14.2. UN proper shipping name**

AMMONIUM FLUORIDE

**14.3. Transport hazard class(es)**

6.1 Toxic substances

**14.4. Packing group**

III

**14.5. Environmental hazards**

not relevant

**14.6. Special precautions for user**

not available

**14.7. Maritime transport in bulk according to IMO instruments**

not relevant

**Additional information**

| | |
|---|---|
| Hazard identification No. | **60** |
| UN number | **2505** |
| Classification code | T5 |
| Safety signs | 6.1 |

| | |
|---|---|
| Tunnel restriction code | (E) |

**Air transport - ICAO/IATA**

| | |
|---|---|
| Packaging instructions passenger | 670 |
| Cargo packaging instructions | 677 |

**Marine transport - IMDG**

| | |
|---|---|
| EmS (emergency plan) | F-A, S-A |

## SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

# SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

# Ammonium fluoride

| | | | |
|---|---|---|---|
| Creation date | 05th September 2019 | Version | 4.0 |
| Revision date | 17th April 2026 | | |

**Restrictions pursuant to Annex XVII of Regulation (EC) No. 1907/2006 (REACH), as amended**

ammonium fluoride

| Restriction | Conditions of restriction |
|---|---|
| 65 | 1. Shall not be placed on the market, or used, in cellulose insulation mixtures or cellulose insulation articles after 14 July 2018 unless the emission of ammonia from those mixtures or articles results in a concentration of less than 3 ppm by volume (2,12 mg/m3) under the test conditions specified in paragraph 4.<br><br>A supplier of a cellulose insulation mixture containing inorganic ammonium salts shall inform the recipient or consumer of the maximum permissible loading rate of the cellulose insulation mixture, expressed in thickness and density.<br><br>A downstream user of a cellulose insulation mixture containing inorganic ammonium salts shall ensure that the maximum permissible loading rate communicated by the supplier is not exceeded.<br><br>2. By way of derogation, paragraph 1 shall not apply to placing on the market of cellulose insulation mixtures intended to be used solely for the production of cellulose insulation articles, or to the use of those mixtures in the<br>production of cellulose insulation articles.<br><br>3. In the case of a Member State that, on 14 July 2016, has national provisional measures in place that have been authorised by the Commission pursuant to Article 129(2)(a), the provisions of paragraphs 1 and 2 shall apply<br>from that date.<br><br>4. Compliance with the emission limit specified in the first subparagraph of paragraph 1 shall be demonstrated in accordance with Technical Specification CEN/TS 16516, adapted as follows:<br>(a) the duration of the test shall be at least 14 days instead of 28 days;<br>(b) the ammonia gas emission shall be measured at least once per day throughout the test;<br>(c) the emission limit shall not be reached or exceeded in any measurement taken during the test;<br>(d) the relative humidity shall be 90 % instead of 50 %;<br>(e) an appropriate method to measure the ammonia gas emission shall be used;<br>(f) the loading rate, expressed in thickness and density, shall be recorded during the sampling of the cellulose insulation mixtures or articles to be tested. |

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out.

## SECTION 16: Other information

**A list of standard risk phrases used in the safety data sheet**

| | |
|---|---|
| H301+H311+H331 | Toxic if swallowed, in contact with skin or if inhaled. |

**Guidelines for safe handling used in the safety data sheet**

| | |
|---|---|
| P261 | Avoid breathing dust. |
| P280 | Wear protective gloves/protective clothing. |
| P311 | Call a doctor. |

**Other important information about human health protection**

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

**Key to abbreviations and acronyms used in the safety data sheet**

| | |
|---|---|
| Acute Tox. | Acute toxicity |
| ADR | Agreement concerning the international carriage of dangerous goods by road |
| BCF | Bioconcentration Factor |
| CAS | Chemical Abstracts Service |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures |

# SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

# Ammonium fluoride

| | | | |
|---|---|---|---|
| Creation date | 05th September 2019 | Version | 4.0 |
| Revision date | 17th April 2026 | | |

| | |
|---|---|
| EC | Identification code for each substance listed in EINECS |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| EmS | Emergency Response Procedures for Ships Carrying Dangerous Goods |
| EU | European Union |
| EuPCS | European Product Categorisation System |
| IATA | International Air Transport Association |
| IBC | International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| INCI | International Nomenclature of Cosmetic Ingredients |
| ISO | International Organization for Standardization |
| IUPAC | International Union of Pure and Applied Chemistry |
| $LC_{50}$ | Lethal concentration of a substance in which it can be expected death of 50% of the population |
| $LD_{50}$ | Lethal dose of a substance in which it can be expected death of 50% of the population |
| log Kow | Octanol-water partition coefficient |
| OEL | Occupational Exposure Limits |
| PBT | Persistent, bioaccumulative and toxic |
| PMT | Persistent, mobile and toxic |
| ppm | Parts per million |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Regulation concerning the International Carriage of Dangerous Goods by Rail |
| UN number | Four-figure identification number of the substance or article taken from the UN Model Regulations |
| UVCB | Substances of unknown or variable composition, complex reaction products or biological materials |
| VOC | Volatile organic compounds |
| vPvB | Very persistent and very bioaccumulative |
| vPvM | Very persistent and very mobile |

**Training guidelines**

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

**Recommended restrictions of use**

not available

**Information about data sources used to compile the Safety Data Sheet**

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

**The changes (which information has been added, deleted or modified)**

The version 4.0 replaces the SDS version from Wednesday, 2 October 2024. Changes were made in sections 2, 11, 12, 13, 15 and 16.

**More information**

Classification procedure - calculation method.

**Statement**

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.

# SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

# Ammonium fluoride

| | | | |
|---|---|---|---|
| Creation date | 05th September 2019 | Version | 4.0 |
| Revision date | 17th April 2026 | | |