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#### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Version 8.4 Revision Date 02.01.2025 Print Date 03.01.2025 GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

1.1	Product identifiers Product name	:	Ammonium fluoride
	Product Number Brand Index-No. REACH No. CAS-No.	: :	216011 SIGALD 009-006-00-8 A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration. 12125-01-8
		•	
1.2	Relevant identified uses of the substance or mixture and uses advised against		
	Identified uses	:	Laboratory chemicals, Manufacture of substances
1.3	Details of the supplier of the safety data sheet		
	Company	:	
1.4	Emergency telephone		
	Emergency Phone #	:	+(44)-870-8200418 (CHEMTREC (GB)) +(353)-19014670 (CHEMTREC Ireland)

001-803-017-9114 (CHEMTREC India)

#### **SECTION 2: Hazards identification**

# 2.1 Classification of the substance or mixture Acute toxicity, (Category 3) H301: Toxic if swallowed. Acute toxicity, (Category 3) H331: Toxic if inhaled. Acute toxicity, (Category 3) H311: Toxic in contact with skin.

#### 2.2 Label elements

#### Labelling according Regulation (EC) No 1272/2008

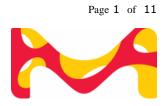
Pictogram

Signal Word

Danger

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Hazard Statements H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled.
Precautionary Statements P261 P264	Avoid breathing dust. Wash skin thoroughly after handling.
P280 P301 + P310	Wear protective gloves/ protective clothing. IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of water.Call a POISON CENTER/ doctor if you feel unwell.
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.
Supplemental Hazard Statements	none

#### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Strong hydrogen fluoride-releaser

#### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

Formula	:	$H_4FN$
Molecular weight	:	37.04 g/mol
CAS-No.	:	12125-01-8
EC-No.	:	235-185-9
Index-No.	:	009-006-00-8

Component		Classification	Concentration
Ammonium fluoride			
CAS-No. EC-No. Index-No.	12125-01-8 235-185-9 009-006-00-8	Acute Tox. 3; H301, H331, H311	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### SECTION 4: First aid measures

#### 4.1 Description of first-aid measures

#### **General advice**

Hydrofluoric (HF) acid burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of

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HF. After decontamination with water, further damage can occur due to penetration/absorption of the fluoride ion. Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Skin exposures can be treated with a 2.5% calcium gluconate gel repeated until burning ceases. More serious skin exposures may require subcutaneous calcium gluconate except for digital areas unless the physician is experienced in this technique, due to the potential for tissue injury from increased pressure. Absorption can readily occur through the subungual areas and should be considered when undergoing decontamination. Prevention of absorption of the fluoride ion in cases of ingestion can be obtained by giving milk, chewable calcium carbonate tablets or Milk of Magnesia to conscious victims. Conditions such as hypocalcemia, hypomagnesemia and cardiac arrhythmias should be monitored for, since they can occur after exposure.Countermeasurements must be implemented at once. First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. Keep respiratory tract clear. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

First treatment with calcium gluconate paste. After contact with skin: Rinse with plenty of water for at least 10 minutes. Immediately remove contaminated clothes. Apply calcium gluconate gel (preparation: boil 5 g of calcium gluconate in 85 ml of hot distilled water, add 10 g glycerol. Allow 5 g of Carmellose-sodium to swell in the hot solution. Stable for 6 months, store in a cool place) and massage into the skin until the pain subsides, in between rinse with water and apply fresh gel. Continue gel therapy for another 15 minutes after the pain has subsided. If no calcium gluconate gel is available, apply several dressings thoroughly moistened with 20 % calcium gluconate solution. Medical advice absolutely required! Call a physician immediately.

#### In case of eye contact

After contact with eyes: Rinse with plenty of water keeping eyelids open, protecting the unaffected eye (at least 10 minutes). Seek medical advice immediately! Remove contact lenses.

#### If swallowed

After swallowing: Immediately give to drink plenty of water, add calcium (in the form of calcium gluconate or calcium lactate). Caution: In the case of vomiting risk of perforation! Administer more calcium gluconate solution. Laxative: Sodium sulfate (1 tablespoon/1/4 l water). Seek medical advice immediately. Ensure that injured persons remain calm and protect them against heat loss.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

Note for the doctor: It is recommended to consult a doctor with experience in the treatment of lesions caused by hydrofluoric acid. If a systemic effect is suspected, monitoring and treatment in an intensive care unit is urgently required. Caution, ventricular fibrillation due to electrolyte imbalance.

#### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

#### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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

Nitrogen oxides (NOx) Hydrogen fluoride Not combustible. Ambient fire may liberate hazardous vapours.

#### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### 5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

#### **SECTION 6:** Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all

circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

## **6.2 Environmental precautions** Do not let product enter drains.

#### **6.3 Methods and materials for containment and cleaning up** Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

**6.4** Reference to other sections For disposal see section 13.

#### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture.

#### **Hygiene measures**

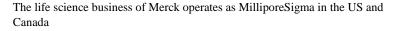
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

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

#### Storage conditions

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Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Hygroscopic. Do not store in glass

#### Storage class

Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

#### **SECTION 8: Exposure controls/personal protection**

#### 8.1 Control parameters

Ingredients with workplace control parameters

#### 8.2 Exposure controls

#### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### **Skin protection**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min

Material tested:KCL 741 Dermatril® L

#### **Body Protection**

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protective clothing

#### **Respiratory protection**

Recommended Filter type: Filter B-(P3)

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The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Control of environmental exposure** 

Do not let product enter drains.

#### SECTION 9: Physical and chemical properties 9.1 Information on basic physical and chemical properties

T	ormation on basic p	nysical and chemical properties
a)	Physical state	solidsolid
b)	Color	white
c)	Odor	ammoniacal
d)	Melting point/freezing point	Melting point: (sublimed)
e)	Initial boiling point and boiling range	Not applicable
f)	Flammability (solid, gas)	No data available
g)	Upper/lower flammability or explosive limits	No data available
h)	Flash point	does not flash
i)	Autoignition temperature	No data available
j)	Decomposition temperature	ca. 100 °C
k)	рН	ca.6 at 50 g/l at 20 °C
I)	Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
m)	Water solubility	820 g/l at 20 °C
n)	Partition coefficient: n-octanol/water	No data available
o)	Vapor pressure	No data available
p)	Density	ca.1.01 g/cm3 at 20 °C
	Relative density	No data available
q)	Relative vapor density	No data available
r)	Particle characteristics	No data available
s)	Explosive properties	Not classified as explosive.

- s) Explosive properties Not classified as explosive.
- t) Oxidizing properties none

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#### **SECTION 10: Stability and reactivity**

#### **10.1 Reactivity**

No data available

### **10.2 Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

#### **10.3** Possibility of hazardous reactions

Generates dangerous gases or fumes in contact with: acids Release of: Hydrogen fluoride Risk of explosion with: halogen-halogen compounds

#### **10.4** Conditions to avoid

Reacts dangerously with glass. no information available

- **10.5 Incompatible materials** glass
- **10.6 Hazardous decomposition products** In the event of fire: see section 5

#### **SECTION 11: Toxicological information**

#### 11.1 Information on toxicological effects

#### Acute toxicity

Acute toxicity estimate Oral - 100.1 mg/kg (Expert judgment) Acute toxicity estimate Inhalation - 0.6 mg/l - dust/mist

(Expert judgment) Acute toxicity estimate Dermal - 300.1 mg/kg (Expert judgment)

#### Skin corrosion/irritation

No data available

Serious eye damage/eye irritation No data available

**Respiratory or skin sensitization** No data available

#### Germ cell mutagenicity

Test Type: Ames test Test system: Salmonella typhimurium Result: negative Remarks: (National Toxicology Program)

#### Carcinogenicity

No data available

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### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure No data available

#### Specific target organ toxicity - repeated exposure No data available

**Aspiration hazard** No data available

#### **11.2 Additional Information**

#### **Endocrine disrupting properties**

#### Product:

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

RTECS: BQ6300000

Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia.

Salivation, Nausea, Vomiting, Fever, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **SECTION 12: Ecological information**

#### 12.1 Toxicity

No data available

- 12.2 Persistence and degradability No data available
- **12.3 Bioaccumulative potential** No data available
- **12.4 Mobility in soil** No data available

#### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

# 12.6 Endocrine disrupting properties Product:

Assessment

: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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SECTION 13: Disposal considerations				
13.1	Waste tre No data av	eatment methods vailable		
SECI	<b>FION 14: T</b>	ransport information	tion	
14.1	<b>UN numb</b> ADR/RID:	•.	IMDG: 2505	IATA: 2505
14.2	ADR/RID: IMDG:	<b>r shipping name</b> AMMONIUM FLUOF AMMONIUM FLUOF Ammonium fluorid	RIDE	
14.3	Transport ADR/RID:	t hazard class(es) 6.1	) IMDG: 6.1	IATA: 6.1
14.4	Packagin ADR/RID:		IMDG: III	IATA: III
14.5	<b>Environm</b> ADR/RID:	no no	IMDG Marine pollutant: no	IATA: no
14.6 Special precautions for user				
	Further in	formation :	No data available	

#### **SECTION 15: Regulatory information**

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

#### Authorisations and/or restrictions on use

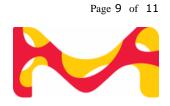
REACH - Restrictions on the manufacture,	: Ammonium fluoride
placing on the market and use of certain	
dangerous substances, mixtures and articles	
(Annex XVII)	

#### National legislation

Seveso III: Directive 2012/18/EU of the H2 ACUTE TOXIC European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

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#### **Other regulations**

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

#### **15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out

#### **SECTION 16: Other information**

#### **Full text of H-Statements**

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

#### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM -American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EMS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. -Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS -Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

#### Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent

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