

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 09.05.2011

Version 6.6

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

### 1.1 Product identifier

Catalogue No.	812034
Product name	Antimony(V) fluoride for synthesis
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses	Chemical for synthesis For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merck-chemicals.com">www.merck-chemicals.com</a> ).
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### 1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	LS-QHC * e-mail: <a href="mailto:prodsafe@merckgroup.com">prodsafe@merckgroup.com</a>

### 1.4 Emergency telephone number

Please contact the regional company representation in your country.

## SECTION 2. Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4, Inhalation, H332

Acute toxicity, Category 4, Oral, H302

Skin corrosion, Category 1B, H314

Chronic aquatic toxicity, Category 2, H411

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

#### Classification (67/548/EEC or 1999/45/EC)

Xn Harmful R20/22

N Dangerous for the environment R51/53

R14

C Corrosive R34

For the full text of the R-phrases mentioned in this Section, see Section 16.

### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

##### Hazard pictograms



##### Signal word

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Danger

*Hazard statements*

H302 + H332 Harmful if swallowed or if inhaled.  
H314 Causes severe skin burns and eye damage.  
H411 Toxic to aquatic life with long lasting effects.  
EUH014 Reacts violently with water.

*Precautionary statements*

P273 Avoid release to the environment.  
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.  
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

**Reduced labelling (≤125 ml)**

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H314 Causes severe skin burns and eye damage.  
EUH014 Reacts violently with water.

*Precautionary statements*

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.  
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

Index-No. 051-003-00-9

**Labelling (67/548/EEC or 1999/45/EC)**

Symbol(s)	C N	Corrosive Dangerous for the environment
R-phrases(s)	14-20/22-34-51/53	Reacts violently with water. Harmful by inhalation and if swallowed. Causes burns. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases(s)	22-26-36/37/39-45-61	Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/ Safety data sheets.
EC-No.	232-021-8	EC Label

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Reduced labelling (≤125 ml)

Symbol(s)



C

N

R-phrases(s) 20/22-34

S-phrases(s) 26-36/37/39-45

Corrosive

Dangerous for the environment

Harmful by inhalation and if swallowed. Causes burns.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	SbF <sub>5</sub>	F <sub>5</sub> Sb (Hill)
CAS-No.	7783-70-2	
Index-No.	051-003-00-9	
EC-No.	232-021-8	
Molar mass	216,74 g/mol	

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

After skin contact: wash off with plenty of water. Swab with polyethylene glycol 400. Immediately remove contaminated clothing. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

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

Irritation and corrosion, Cough, depressed respiration, Shortness of breath, agitation, spasms, Stomach/intestinal disorders, cardiovascular disorders, muscular symptoms, CNS disorders  
The following applies to soluble inorganic fluorides in general: may cause irritations to burns in contact with eyes, skin, mucous membranes. Systemic effect: drop in blood calcium level, agitation, spasms, cardiovascular disorders, CNS disorders.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

5.1 Extinguishing media

*Suitable extinguishing media*

Carbon dioxide (CO<sub>2</sub>), Dry powder

*Unsuitable extinguishing media*

Water, Foam

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

Not combustible.

Vapours are heavier than air and may spread along floors.

May not get in touch with:

Water

Caution! in contact with water product releases:

Hydrogen fluoride

Development of hazardous combustion gases or vapours possible in the event of fire.

Hydrogen fluoride

**5.3 Advice for firefighters**

*Special protective equipment for fire-fighters*

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

*Further information*

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Suppress (knock down) gases/vapours/mists with a water spray jet.

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**SECTION 6. Accidental release measures**

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

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

**6.2 Environmental precautions**

Do not empty into 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 7.2 and 10.5).

Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

**6.4 Reference to other sections**

Indications about waste treatment see section 13.

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**SECTION 7. Handling and storage**

**7.1 Precautions for safe handling**

Keep workplace dry. Do not allow product to come into contact with water.

Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

Observe label precautions.

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

Tightly closed.

Store at +15°C to +25°C.

**7.3 Specific end uses**

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

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**SECTION 8. Exposure controls/personal protection**

**8.1 Control parameters**

**8.2 Exposure controls**

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

**Individual protection measures**

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

*Hygiene measures*

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

*Eye/face protection*

Tightly fitting safety goggles

*Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,40 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,40 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 730 Camatril® -Velours (full contact), KCL 730 Camatril® -Velours (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

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 EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

*Other protective equipment*

Acid-resistant protective clothing

*Respiratory protection*

required when vapours/aerosols are generated.

Recommended Filter type: Filter B-(P3)

The entrepreneur 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.

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**Environmental exposure controls**

Do not empty into drains.

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**SECTION 9. Physical and chemical properties**

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

Form	oily to liquid
Colour	colourless
Odour	stinging
Odour Threshold	No information available.
pH	No information available.
Melting point	7 °C
Boiling point/boiling range	149 - 150 °C at 1.013 hPa
Flash point	not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	7,49
Relative density	2,99 g/cm <sup>3</sup> at 20 °C
Water solubility	at 20 °C (rigorous decomposition)
Partition coefficient: n-octanol/water	log Pow: 0,71 (calculated) (Lit.) Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Oxidizing properties	No information available.

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**9.2 Other data**

none

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**SECTION 10. Stability and reactivity**

**10.1 Reactivity**

See section 10.3.

**10.2 Chemical stability**

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

**10.3 Possibility of hazardous reactions**

can decompose violently in contact with:

Water, acids

Violent reactions possible with:

phosphates, Bases

Risk of ignition or formation of inflammable gases or vapours with:

Risk of explosion with:

combustible substances

**10.4 Conditions to avoid**

Heating (decomposition).

Exposure to moisture.

**10.5 Incompatible materials**

glass, Metals, quartzes/silicate ceramics

**10.6 Hazardous decomposition products**

in the event of fire: See chapter 5.

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**SECTION 11. Toxicological information**

**11.1 Information on toxicological effects**

*Acute oral toxicity*

absorption

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

*Acute inhalation toxicity*

absorption

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

*Skin irritation*

Causes burns.

*Eye irritation*

Causes serious eye damage. Risk of blindness!

*Specific target organ toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

*Specific target organ toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

Based on available data the classification criteria are not met.

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### 11.2 Further information

Quantitative data on the toxicity of this product are not available.

Decomposition of the substance with tissue moisture.

Further toxicological data:

Systemic effects:

agitation, spasms, cardiovascular disorders, CNS disorders, Stomach/intestinal disorders, drop in blood pressure, muscular symptoms, depressed respiration

Damage to:

Liver

Other information

The following applies to soluble inorganic fluorides in general: may cause irritations to burns in contact with eyes, skin, mucous membranes. Systemic effect: drop in blood calcium level, agitation, spasms, cardiovascular disorders, CNS disorders.

Further data:

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### 12.1 Toxicity

No information available.

### 12.2 Persistence and degradability

No information available.

### 12.3 Bioaccumulative potential

*Partition coefficient: n-octanol/water*

log Pow: 0,71

(calculated)

(Lit.) Bioaccumulation is not expected.

### 12.4 Mobility in soil

No information available.

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

### 12.6 Other adverse effects

*Additional ecological information*

Biological effects:

Product reacts with water.

Forms corrosive mixtures with water even if diluted.

Harmful effect due to pH shift.

Further information on ecology

Do not allow to run into surface waters, wastewater, or soil.



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**SECTION 13. Disposal considerations**

*Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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**SECTION 14. Transport information**

**ADR/RID**

UN 1732 ANTIMONY PENTAFLUORIDE, 8 (6.1), II

**IATA**

UN 1732 ANTIMONY PENTAFLUORIDE, 8 (6.1), II

**IATA-PAX** Not permitted for transport

UN 1732 ANTIMONY PENTAFLUORIDE, 8 (6.1)

**IMDG**

UN 1732 ANTIMONY PENTAFLUORIDE, 8 (6.1), II

EmS F-A S-B

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

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**SECTION 15. Regulatory information**

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

*EU regulations*

Major Accident Hazard	96/82/EC
Legislation	Dangerous for the environment
	9b
	Quantity 1: 200 t
	Quantity 2: 500 t

	96/82/EC
	Any classification
	10a
	Quantity 1: 100 t
	Quantity 2: 500 t

Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers.
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Storage class	8 B
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**15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out.

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**SECTION 16. Other information**

**Full text of H-Statements referred to under sections 2 and 3.**

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H332	Harmful if inhaled.
H411	Toxic to aquatic life with long lasting effects.

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**Full text of R-phrases referred to under sections 2 and 3**

R14	Reacts violently with water.
R20/22	Harmful by inhalation and if swallowed.
R34	Causes burns.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Training advice**

Provide adequate information, instruction and training for operators.

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

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

**Regional representation**

This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*