

SAFETY DATA SHEET

1. PRODUCT

1.1 Product identifiers

Name: Antimony(V) fluoride

CAS-No.: 7783-70-2

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

Identified uses : Laboratory chemicals, Synthesis of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302


Acute toxicity, Inhalation (Category 4), H332

Acute aquatic toxicity (Category 2), H401

Chronic aquatic toxicity (Category 2), H411

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

2.2 GHS Label elements, including precautionary statements

| | |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pictogram |  |
| Signal word | Warning |
| Hazard statement(s) | H302 + H332 Harmful if swallowed or if inhaled H411 Toxic to aquatic life with long lasting effects. |
| Precautionary statement(s) | P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment. P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. P391 Collect spillage. P501 Dispose of contents/ container to an approved waste disposal plant. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Strong hydrogen fluoride-releaser

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms: Antimony pentafluoride
Formula: F_5Sb
Molecular weight: 216.75 g/mol
CAS-No.: 7783-70-2
EC-No.: 232-021-8

Hazardous components

| Component | Classification | Concentration |
|-----------------------------|---------------------------------------------------------------------|---------------|
| Antimony(V) fluoride | | |
| | Acute Tox. 4; Aquatic Acute 2; Aquatic Chronic 2; H302 + H332, H411 | <= 100 % |

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

4. FIRST AID MEASURES

4.1 Description of first aid measures

| |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General advice |
| Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area. 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 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. |
| If inhaled |
| If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. |
| In case of skin contact |
| Wash off with soap and plenty of water. Consult a physician. First treatment with calcium gluconate paste. |
| In case of eye contact |
| Flush eyes with water as a precaution. |
| If swallowed |
| Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |

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

4.2 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Reacts violently with water. Do not store in glass

Storage class (TRGS 510): Non Combustible Liquids

7.3 Specific end use(s)

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

| Component | CAS-No. | Value | Control parameters | Basis |
|----------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------|
| Antimony(V) fluoride | 7783-70-2 | TWA | 2.500000 mg/m3 | USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants |
| | Remarks | CAS number varies with compound | | |
| | | TWA | 0.500000 mg/m3 | USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants |
| | | TWA | 0.500000 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Upper Respiratory Tract irritation | | |
| | | Skin irritation | | |
| | | TWA 2.5 mg/m3 USA. ACGIH Threshold Limit Values (TLV) | | |
| | | Bone damage Fluorosis Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen varies | | |
| | | TWA | 2.500000 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Bone damage Fluorosis Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen varies | | |
| | | TWA | 0.500000 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | TWA | 2.500000 mg/m3 | USA. Occupational Exposure Limits (OSHA) -Table Z-2 |
| | | Z37.28-1969 | | |
| | | TWA | 2.500000 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Bone damage Fluorosis Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen varies | | |

| Component | CAS-No. | Value | Control parameters | Basis |
|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------|
| | | TWA | 2.5 mg/m ³ | USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants |
| | | CAS number varies with compound | | |
| | | TWA | 0.5 mg/m ³ | USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants |
| | | TWA | 2.5 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) |
| | | Bone damage Fluorosis Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen varies | | |
| | | TWA | 0.5 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) |
| | | Upper Respiratory Tract irritation Skin irritation | | |
| | | TWA | 0.5 mg/m ³ | USA. NIOSH Recommended Exposure Limits |

Biological occupational exposure limits

| Component | CAS-No. | Parameters | Value | Biological specimen | Basis |
|----------------------|-----------|----------------------------------------------------------|--------------|---------------------|------------------------------------------|
| Antimony(V) fluoride | 7783-70-2 | Fluoride | 3.0000 mg/g | In urine | ACGIH -Biological Exposure Indices (BEI) |
| | Remarks | Prior to shift (16 hours after exposure ceases) | | | |
| | | Fluoride | 10.0000 mg/g | In urine | ACGIH -Biological Exposure Indices (BEI) |
| | | End of shift (As soon as possible after exposure ceases) | | | |
| | | Fluoride | 2 mg/l | Urine | ACGIH -Biological Exposure Indices (BEI) |
| | | Prior to shift (16 hours after exposure ceases) | | | |
| | | Fluoride | 3 mg/l | Urine | ACGIH -Biological Exposure Indices (BEI) |
| | | End of shift (As soon as possible after exposure ceases) | | | |

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

| | |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye/face protection | Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). |
| Skin protection | Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. |
| Body Protection | Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. |
| Respiratory protection | Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). |
| Control of environmental exposure | Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. |

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|-----------------------------------------|------------------------------------------|
| Appearance | Form: liquid Colour: colourless |
| Odour | No data available |
| Odour Threshold | No data available |
| pH | No data available |
| Melting point/freezing point | Melting point/range: 7 °C (45 °F) - lit. |
| Initial boiling point and boiling range | 148 - 150 °C (298 - 302 °F) - lit. |
| Flash point | Not applicable |
| Evaporation rate | No data available |
| Flammability (solid, gas) | No data available |

| | |
|----------------------------------------------|------------------------------------------|
| Upper/lower flammability or explosive limits | No data available |
| Vapour pressure | 13 hPa (10 mmHg) at 25 °C (77 °F) |
| Vapour density | 7.48 - (Air = 1.0) |
| Relative density | 2.993 g/cm ³ at 25 °C (77 °F) |
| Water solubility | No data available |
| Partition coefficient: n-octanol/water | No data available |
| Auto-ignition temperature | No data available |
| Decomposition temperature | No data available |
| Viscosity | No data available |
| Explosive properties | No data available |
| Oxidizing properties | No data available |

9.2 Other safety information

Relative vapour density: 7.48 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Do not allow water to enter container because of violent reaction.

Reacts dangerously with glass.

10.5 Incompatible materials

Strong oxidizing agents Strong bases, Water, Highly toxic fumes glass

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Hydrogen fluoride, Antimony oxide

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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|------------------------------------------------------------------------------------------------------|
| Acute toxicity |
| No data available Inhalation: No data available Dermal: No data available No data available |
| Skin corrosion/irritation |
| No data available |
| Serious eye damage/eye irritation |
| No data available |
| Respiratory or skin sensitisation |
| No data available |
| Germ cell mutagenicity |
| No data available |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Carcinogenicity |
| IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Antimony(V) fluoride) NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |
| Reproductive toxicity |
| No data available 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 |
| Additional Information |
| RTECS: Not available Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia. Salivation, Nausea, Abdominal pain, Vomiting, Fever, Rapid respiration, Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia., Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation Stomach - Irregularities - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence |

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

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

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

| |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product |
| Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. |
| Contaminated packaging |
| Dispose of as unused product. |

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1732 Class: 8 (6.1) Packing group: II

Proper shipping name: Antimony pentafluoride

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG

UN number: 1732 Class: 8 (6.1) Packing group: II EMS-No: F-A, S-B

Proper shipping name: ANTIMONY PENTAFLUORIDE

Marine pollutant:yes

IATA

UN number: 1732 Class: 8 (6.1) Packing group: II

Proper shipping name: Antimony pentafluoride

IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

| Component | CAS-No. | Revision Date |
|----------------------|-----------|---------------|
| Antimony(V) fluoride | 7783-70-2 | 2007-07-01 |

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

| Component | CAS-No. | Revision Date |
|----------------------|-----------|---------------|
| Antimony(V) fluoride | 7783-70-2 | 2007-07-01 |

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

| Component | CAS-No. | Revision Date |
|----------------------|-----------|---------------|
| Antimony(V) fluoride | 7783-70-2 | 2007-07-01 |

Pennsylvania Right To Know Components

| Component | CAS-No. | Revision Date |
|----------------------|-----------|---------------|
| Antimony(V) fluoride | 7783-70-2 | 2007-07-01 |

New Jersey Right To Know Components

| Component | CAS-No. | Revision Date |
|----------------------|-----------|---------------|
| Antimony(V) fluoride | 7783-70-2 | 2007-07-01 |

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

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

Acute Tox. Acute toxicity

Aquatic Acute Acute aquatic toxicity

Aquatic Chronic Chronic aquatic toxicity

H302 Harmful if swallowed.

H302 + H332 Harmful if swallowed or if inhaled

H332 Harmful if inhaled.

HMIS Rating

Health hazard: 1

Chronic Health Hazard: *

Flammability: 0

Physical Hazard 0

NFPA Rating

Health hazard: 3

Fire Hazard: 0

Reactivity Hazard: 0
