

## Chemical Safety Data Sheet MSDS / SDS

## Antimony trifluoride SDS

Revision Date:2024-04-25 Revision Number:1

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

Product name: Antimony trifluoride

CAS: 7783-56-4

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

Relevant identified uses: For R&amp;D use only. Not for medicinal, household or other use.

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

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Telephone: +91 9550333722

**SECTION 2: Hazards identification****Classification of the substance or mixture**

Acute toxicity - Category 3, Oral

Acute toxicity - Category 3, Dermal

Acute toxicity - Category 3, Inhalation  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

### GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

### Hazard statement(s)

H301 Toxic if swallowed  
H311 Toxic in contact with skin  
H331 Toxic if inhaled  
H411 Toxic to aquatic life with long lasting effects

### Precautionary statement(s)

### Prevention

P264 Wash ... thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.

### Response

P301+P316 IF SWALLOWED: Get emergency medical help immediately.  
P321 Specific treatment (see ... on this label).  
P330 Rinse mouth.  
P302+P352 IF ON SKIN: Wash with plenty of water/...  
P316 Get emergency medical help immediately.  
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P391 Collect spillage.

### Storage

P405 Store locked up.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

## Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

## Other hazards which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

### Substance

Chemical name: Antimony trifluoride

Common names and synonyms: Antimony trifluoride

CAS number: 7783-56-4

EC number: 232-009-2

Concentration: 100%

## SECTION 4: First aid measures

### Description of necessary first-aid measures

#### If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

#### Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

#### Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

#### Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

### **Most important symptoms/effects, acute and delayed**

Resemble those of lead and arsenic poisoning. ACUTE POISONING: irritation of the mouth, nose, stomach and intestines; vomiting, purging with bloody stools; slow pulse and low blood pressure; slow, shallow breathing; coma and convulsions sometimes followed by death from cardiac and respiratory exhaustion. CHRONIC POISONING: dryness of throat; pain on swallowing; occasional vomiting and persistent nausea; susceptibility to fainting; diarrhea, loss of appetite and weight; giddiness; dermatitis, either pustular or ulcerative; anemia (USCG, 1999)

Excerpt from ERG Guide 157 [Substances - Toxic and/or Corrosive (Non-Combustible / Water-Sensitive)]: TOXIC; inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns or death. Reaction with water or moist air may release toxic, corrosive or flammable gases. Reaction with water may generate much heat that will increase the concentration of fumes in the air. Fire will produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. (ERG, 2016)

### **Indication of immediate medical attention and special treatment needed, if necessary**

#### **Absorption, Distribution and Excretion**

Bone is natural "sink" for fluoride ... 95-96% of body burden of fluoride is in bones & teeth. ... fluoride is gradually excreted in urine. fluoride

## **SECTION 5: Firefighting measures**

### **Suitable extinguishing media**

If material involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use water in flooding quantities as spray. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Antimony trifluoride solid, antimony trifluoride soln

### **Specific hazards arising from the chemical**

Excerpt from ERG Guide 157 [Substances - Toxic and/or Corrosive (Non-Combustible / Water-Sensitive)]: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. For UN1796, UN1826, UN2031 at high concentrations and for UN2032, these may act as oxidizers, also consult ERG Guide 140. Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.). Substance may react with water (some violently), releasing corrosive and/or toxic gases and runoff. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated or if contaminated with water. (ERG, 2016)

Excerpt from ERG Guide 157 [Substances - Toxic and/or Corrosive (Non-Combustible / Water-Sensitive)]: Non-combustible,

substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. For UN1796, UN1826, UN2031 at high concentrations and for UN2032, these may act as oxidizers, also consult ERG Guide 140. Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.). Substance may react with water (some violently), releasing corrosive and/or toxic gases and runoff. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated or if contaminated with water. (ERG, 2016)

#### **Special protective actions for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary.

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

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

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

#### **Environmental precautions**

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

#### **Methods and materials for containment and cleaning up**

Environmental considerations--land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. /SRP: If time permits, pits, ponds, lagoons, soak holes, or holding areas should be sealed with an impermeable flexible membrane liner. / Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash or cement powder, or commercial sorbents. Apply universal gelling agent to immobilize spill. Antimony trifluoride solution

### **SECTION 7: Handling and storage**

#### **Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

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

May be stored in glass vessels or steel drums. Keep well closed.

## SECTION 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure limit values

Component	Antimony trifluoride			
CAS No.	7783-56-4			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Finland	?	0,5 (1)	?	?
	Remarks			
Finland	(1) calculated as Sb			

### Biological limit values

no data available

### Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

#### Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

#### Thermal hazards

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Antimony trifluoride, solid is a white to gray crystalline solid. It is corrosive to tissue. It is used in ceramics and to make other chemicals.
Colour:	WHITE ORTHORHOMBIC CRYSTALS
Odour:	no data available
Melting point/freezing point:	292 °C
Boiling point or initial boiling point and boiling range:	376 °C
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	376 °C
Auto-ignition temperature:	Not flammable (USCG, 1999)
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	154 g/100 ml methanol; sol in acetone
Partition coefficient n-octanol/water:	no data available
Vapour pressure:	26.34 kPa (0.26 atm) at melting point

Density and/or relative density:	4.38g/mL at 25°C (lit.)
Relative vapour density:	no data available
Particle characteristics:	no data available

## SECTION 10: Stability and reactivity

### Reactivity

Water slowly hydrolyzes antimony fluoride to form antimony (III) oxide. The dry powdered oxide ignites on heating in air [Mellor Vol. 9 425.1939].

### Chemical stability

no data available

### Possibility of hazardous reactions

A colorless, solid compound, toxic and corrosive. When heated to decomposition, it emits very toxic fumes of fluoride and metallic antimony [Lewis, 3rd ed., 1993, p. 83].

### Conditions to avoid

no data available

### Incompatible materials

On contact with acid or acid fumes, they emit highly toxic fumes of /hydrogen fluoride/. fluorides

### Hazardous decomposition products

When heated to decomp it emits very toxic fumes of /hydrogen fluoride/ and antimony.

## SECTION 11: Toxicological information

### Acute toxicity



Oral: no data available

Inhalation: no data available

Dermal: no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

A4; Not classifiable as a human carcinogen. Fluorides, as F

**Reproductive toxicity**

no data available

**STOT-single exposure**

no data available

**STOT-repeated exposure**

no data available

**Aspiration hazard**

no data available

## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### Persistence and degradability

no data available

### Bioaccumulative potential

no data available

### Mobility in soil

no data available

### Other adverse effects

no data available

## SECTION 13: Disposal considerations

### Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas

scrubbing is possible for combustible packaging materials.

## SECTION 14: Transport information

### UN Number

ADR/RID: UN2923 (For reference only, please check.)

IMDG: UN2923 (For reference only, please check.)

IATA: UN2923 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: CORROSIVE SOLID, TOXIC, N.O.S. (For reference only, please check.)

IMDG: CORROSIVE SOLID, TOXIC, N.O.S. (For reference only, please check.)

IATA: CORROSIVE SOLID, TOXIC, N.O.S. (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: 8 (For reference only, please check.)

IMDG: 8 (For reference only, please check.)

IATA: 8 (For reference only, please check.)

### Packing group, if applicable

ADR/RID: I (For reference only, please check.)

IMDG: I (For reference only, please check.)

IATA: I (For reference only, please check.)

### Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

### Special precautions for user

no data available

### Transport in bulk according to IMO instruments

no data available

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

**Safety, health and environmental regulations specific for the product in question**

**European Inventory of Existing Commercial Chemical Substances (EINECS)**

Listed.

**EC Inventory**

Listed.

**United States Toxic Substances Control Act (TSCA) Inventory**

Listed.

**China Catalog of Hazardous chemicals 2015**

Listed.

**New Zealand Inventory of Chemicals (NZIoC)**

Listed.

**(PICCS)**

Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC)**

Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

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

### **Abbreviations and acronyms**

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

### **References**

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:  
[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:  
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

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