

## Chemical Safety Data Sheet MSDS / SDS

## Antimony trichloride

Revision Date:2025-02-01 Revision Number:1

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

## Product identifier

Product name : Antimony trichloride  
CBnumber : CB5852561  
CAS : 10025-91-9  
EINECS Number : 233-047-2  
Synonyms : SbCl<sub>3</sub>,Antimony trichloride

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## Classification of the substance or mixture

Skin corrosion, Sub-category 1B  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

## Label elements

## Pictogram(s)

Signal word : Danger

## Hazard statement(s)

H314 Causes severe skin burns and eye damage  
H411 Toxic to aquatic life with long lasting effects

## Precautionary statement(s)

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.  
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P405 Store locked up.

P501 Dispose of contents/container to.....

#### Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash ... thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P273 Avoid release to the environment.

#### Response

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P363 Wash contaminated clothing before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P391 Collect spillage.

#### Storage

P405 Store locked up.

#### 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

no data available

---

## SECTION 3: Composition/information on ingredients

#### Substance

Product name	: Antimony trichloride
Synonyms	: SbCl <sub>3</sub> ,Antimony trichloride
CAS	: 10025-91-9
EC number	: 233-047-2
MF	: Cl <sub>3</sub> Sb
MW	: 228.119

---

## SECTION 4: First aid measures

#### Description of first aid measures

##### If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

#### Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention .

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

Inhalation of small amounts may cause only irritation of the nose, throat and air passages; large exposures result in severe air-passage irritation. Ingestion causes vomiting, purging with bloody stools, slow pulse and low blood pressure; slow, shallow breathing; coma and convulsions sometimes followed by death. Contact with eyes causes severe eye burns or at least severe eye irritation. Contact of dry chemical with skin may result in deep chemical burns. (USCG, 1999)

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

Call for medical aid. ... If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. ... Remove contaminated clothing and shoes. Flush affected areas with plenty of water. If in eyes, hold eyelids open, and flush with plenty of water. If swallowed and victim is conscious, have victim drink water or milk. If swallowed and victim is unconscious or having convulsions, do nothing except keep victim warm.

---

## SECTION 5: Firefighting measures

### Extinguishing media

If material involved in fire: Use dry chemical, dry sand, or carbon dioxide. Do not use water on material itself. If large quantities of combustibles are involved, use water in flooding quantities as spray and fog. Use water spray to knock-down vapors. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Antimony trichloride, solid; antimony trichloride, liquid

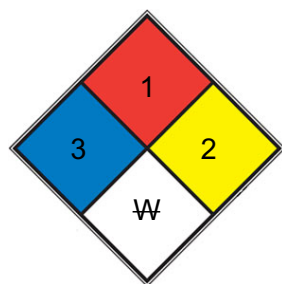
### Specific Hazards Arising from the Chemical

Special Hazards of Combustion Products: Toxic and irritating antimony oxide and hydrogen chloride may form in fires. (USCG, 1999)

### Advice for firefighters

In case of fire in the surroundings, use appropriate extinguishing media.

### NFPA 704



■ HEALTH 3

Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

---

Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion

<input checked="" type="checkbox"/>	FIRE	1	can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. <a href="#">mineral oil</a> , ammonia)
<input checked="" type="checkbox"/>	REACT	2	Undergoes violent chemical change at elevated temperatures and pressures, reacts violently with water, or may form explosive mixtures with water (e.g. white phosphorus, <a href="#">potassium</a> , <a href="#">sodium</a> )
<input type="checkbox"/>	SPEC. HAZ.	W	

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. Carefully collect remainder. Then store and dispose of according to local regulations.

### Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. Carefully collect remainder. Then store and dispose of according to local regulations.

### 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. Neutralize with agricultural lime (CaO), crushed limestone (CaCO<sub>3</sub>) or sodium bicarbonate (NaHCO<sub>3</sub>). Antimony trichloride; liquid

## 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

Separated from food and feedstuffs. Dry. Well closed.

## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational Exposure limit values

TLV: (as Sb): 0.5 mg/m<sup>3</sup>, as TWA.MAK: carcinogen category: 2; germ cell mutagen group: 3B

#### Biological limit values

no data available

## Exposure 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

### Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

### Skin protection

Protective gloves. Protective clothing.

### Respiratory protection

Use ventilation (not if powder), local exhaust or breathing protection.

### Thermal hazards

no data available

---

## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	Powder, Crystals and/or Chunks
Colour	White
Odour	Sharp, unpleasant
Melting point/freezing point	$\geq 72$ - $\leq 78$ °C. Remarks:Based on DSC-measurement, performed under nitrogen.
Boiling point or initial boiling point and boiling range	215 °C. Atm. press.:1 013.3 hPa.
Flammability	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	223.5°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	H <sub>2</sub> O: soluble
Partition coefficient n-octanol/water	no data available
Vapour pressure	1 mm Hg ( 49 °C)
Density and/or relative density	3.14
Relative vapour density	3.14
Particle characteristics	no data available

---

## SECTION 10: Stability and reactivity

## Reactivity

Decomposes on heating. This produces toxic fumes including chlorine and antimony oxides. Reacts with water. This produces heat, hydrogen chloride (see ICSC 0163) and antimony oxychloride. Attacks many metals in the presence of water. Aluminium burns in antimony trichloride vapour.

## Chemical stability

Fumes in air

## Possibility of hazardous reactions

ANTIMONY TRICHLORIDE is a strong oxidizing agent, and it is slowly hydrolyzed to generate hydrochloric acid and antimony oxides.

## Conditions to avoid

no data available

## Incompatible materials

Corrosive by vigorous reaction with moisture, generating heat and hydrogen chloride gas ...

## Hazardous decomposition products

When heated to decomp, it emits very toxic fumes of chlorine 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

no data available

## Reproductive toxicity

no data available

### STOT-single exposure

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. Inhalation may cause lung oedema. See Notes. The effects may be delayed. Medical observation is indicated.

### STOT-repeated exposure

The substance may have effects on the cardiovascular system.

### Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed, especially if powdered.

---

## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: LC50 - *Pimephales promelas* - 14.4 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: LC50 - *Chlorohydra viridissimus* - 1.77 mg/L - 96 h.

Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - > 36.6 mg/L - 72 h.

Toxicity to microorganisms: EC50 - activated sludge - 27 mg/L - 4 h. Remarks:Sb.

### Persistence and degradability

no data available

### Bioaccumulative potential

no data available

### Mobility in soil

no data available

### Toxics Screening Level

The ITSL for antimony trichloride is 5 µg/m<sup>3</sup> based on an 8 hour averaging time.

### 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: UN1733 (For reference only, please check.)

IMDG: UN1733 (For reference only, please check.)

IATA: UN1733 (For reference only, please check.)

### UN Proper Shipping Name

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

IMDG: ANTIMONY TRICHLORIDE (For reference only, please check.)

IATA: ANTIMONY TRICHLORIDE (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: II (For reference only, please check.)

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

IATA: II (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?pageSize=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageSize=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/>

### **Other Information**

C. I. 77056 is an alternative name. Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of lung

oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.

**Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.