

Chemical Safety Data Sheet MSDS / SDS

Antimony 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

CAS: 7440-36-0

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.in

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

Not classified.

GHS label elements, including precautionary statements

Signal word No signal word

Hazard statement(s)

none

Precautionary statement(s)

Prevention

none

Response

none

Storage

none

Disposal

none

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name: Antimony

Common names and
synonyms: Antimony

CAS number: 7440-36-0

EC number: 231-146-5

Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

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. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 170 [Metals (Powders, Dusts, Shavings, Borings, Turnings, or Cuttings, etc.)]: Oxides from metallic fires are a severe health hazard. Inhalation or contact with substance or decomposition products may cause severe injury or death. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. (ERG, 2016)

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

Absorption, Distribution and Excretion

A study of the retention patterns of labeled antimony in mice following inhalation of particles formed at different temp was conducted. the lower temp aerosol was more sol & left the lung rapidly, localizing in the skeleton. the 2 aerosols produced at higher temp resulted in (124)antimony remaining in the lung for extended periods.

SECTION 5: Firefighting measures

Suitable extinguishing media

If material on fire or 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 fog. Use foam, dry chemical, or carbon dioxide. Keep run-off water out of sewers and water sources. Antimony powder

Specific hazards arising from the chemical

Excerpt from ERG Guide 170 [Metals (Powders, Dusts, Shavings, Borings, Turnings, or Cuttings, etc.)]: May react violently or explosively on contact with water. Some are transported in flammable liquids. May be ignited by friction, heat, sparks or flames. Some of these materials will burn with intense heat. Dusts or fumes may form explosive mixtures in air. Containers may explode when heated. May re-ignite after fire is extinguished. (ERG, 2016)

Special protective actions for fire-fighters

Use water spray, foam, powder, carbon dioxide.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting.

Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. NO contact with oxidizing agents, halogens or acids. Closed system, dust explosion-proof electrical equipment and lighting. Prevent deposition of dust. 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 oxidants, acids, halogens and food and feedstuffs.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 0.5 mg/m³, as TWA.MAK: (including its inorganic compounds, except stibine): carcinogen category: 2; germ cell mutagen group: 3B

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 safety goggles or eye protection in combination with breathing protection if powder.

Skin protection

Protective gloves.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state: Solid. Powder.

Colour:	Grey.
Odour:	no data available
Melting point/freezing point:	> 600 °C. Atm. press.:1 010 hPa. Remarks:The test item has no melting point up to the maximum temperature of measurement (600°C).
Boiling point or initial boiling point and boiling range:	> 600 °C. Atm. press.:1 010 hPa. Remarks:The test item has no boiling point up to the maximum temperature of measurement (600°C).
Flammability:	Noncombustible Solid in bulk form, but a moderate explosion hazard in the form of dust when exposed to flame.
Lower and upper explosion limit/flammability limit:	Moderate fire and explosion hazard in the forms of dust and vapor, when exposed to heat or flame.
Flash point:	1380°C
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	Insoluble (NIOSH, 2016)
Partition coefficient n-octanol/water:	no data available
Vapour pressure:	1 mm Hg at 1627° F (NTP, 1992)
Density and/or relative density:	7.05. Temperature:21.8 °C.
Relative vapour density:	no data available

Particle characteristics:

no data available

SECTION 10: Stability and reactivity

Reactivity

On combustion, forms toxic fumes of antimony oxides (see ICSC 0012). Reacts violently with oxidants, acids, halogens and powdered metals. This generates fire and explosion hazard. Contact with acids may generate toxic gas (stibine - see ICSC 0776).

Chemical stability

Slightly oxidized in air

Possibility of hazardous reactions

MODERATE, IN FORMS OF DUST OR VAPOR, WHEN EXPOSED TO HEAT OR FLAME .Dust explosion possible if in powder or granular form, mixed with air.ANTIMONY is spontaneously flammable in fluorine, chlorine, and bromine. With iodine, the reaction produces heat, which can cause flame or even an explosion if the quantities are great enough [Mellor 9:379 1946-47]. Even at 10° C. bromine trifluoride reacts with antimony incandescently. Bromine trifluoride reacts similarly with arsenic, boron, bromine, iodine, phosphorus, and sulfur [Mellor 2:113 1946-47]. Bromoazide explodes on contact with antimony, arsenic, phosphorus, silver foil, or sodium. It is very shock sensitive. Explosions of chloric acid have been due to the formation of unstable compounds with antimony, bismuth, ammonia, and organic matter [Chem. Abst. 46:2805e 1952]. The reaction of finely divided antimony and nitric acid can be violent [Pascal 10:504 1931-34]. Powdered antimony mixed with potassium nitrate explodes when heated [Mellor 9:282 1946-47]. When antimony or arsenic and solid potassium permanganate are ground together, the metals ignite [Mellor 12:322 1946-47]. Sodium peroxide oxidizes antimony, arsenic, copper, potassium, tin, and zinc with incandescence [Mellor 2:490-93 1946-47].

Conditions to avoid

no data available

Incompatible materials

Reaction of finely divided antimony & nitric acid can be violent.

Hazardous decomposition products

When heated ... it emits toxic fumes of SbH₃.

SECTION 11: Toxicological information

Acute toxicity

Oral: fatal dose - rat - > 7 500 mg/kg bw. Remarks:Experiment (2).

Inhalation: no data available

Dermal: LD50 - rabbit - > 8 300 mg/kg bw.

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

EPA: Not evaluated. IARC: Not evaluated. NTP: Not evaluated

Reproductive toxicity

no data available

STOT-single exposure

May cause mechanical irritation to the eyes.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis especially when the skin is exposed to fumes. The substance may have effects on the lungs. This may result in pneumoconiosis.

Aspiration hazard

A harmful concentration of airborne particles can be reached quickly when dispersed.

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

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: UN2871 (For reference only, please check.)

IMDG: UN2871 (For reference only, please check.)

IATA: UN2871 (For reference only, please check.)

UN Proper Shipping Name

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

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

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

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)

IATA: 6.1 (For reference only, please check.)

Packing group, if applicable

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

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

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

Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

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

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

Other boiling points: 1325°C, 1440°C, 1587 °C, 1750°C. The recommendations on this card apply only to metallic antimony. See ICSCs 0012, 0220, 0776 and 1224.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any