

## Safety data sheet (Antimony Trioxide)

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical product name	Antimony trioxide
Company name	Yamanaka & Co.,Ltd.
Address	5-8 Imabashi 2 Chuo-ku Osaka Japan
Name of section	Manufacturing and Sales Group
Tel	+81-6-6125-6504
Fax	+81-6-6125-6704
Emergency contact number	Yamanaka & Co.,Ltd. +81-6-6125-6504
E-mail	<a href="mailto:info.m@yamanaka.co.jp">info.m@yamanaka.co.jp</a>
Recommended use and restriction on use	: The main use of Antimony trioxide is a flame-retardant additive for plastics, textiles, paint, and other materials. The other uses of Antimony trioxide include many things, polyester polymerization catalyst, pigment, variable resistors, decolorizing and finding agent of optical lenses.

### 2. HAZARDS IDENTIFICATION<sup>①, ⑤</sup>

GHS classification  
Healthy Hazards  
Carcinogenicity Category 2

GHS label  
Hazard pictogram



Signal word Warning  
Hazard statement Suspected of causing cancer

Precautionary statements

**【Prevention】**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Wear protective gloves/protective clothing/eye protection/face protection.

**【Response】**

If exposed or concerned : Get medical advice/attention.

**【Storage】**

Store locked up.

**【Disposal】**

Dispose of contents/container in accordance with local/regional/national /international regulations(to be specified).

Other hazard not applicable to GHS classification hazard : No information  
The summary of important signs and assumed emergency : No information

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture	: Substance
General product description	: Antimony trioxide
Other name	: Antimony oxide
Chemical property(Chemical formula etc)	: Sb <sub>2</sub> O <sub>3</sub>
CAS No.	: 1309-64-4
Component and its content	: More than 99.5%
EINECS No.	: 215-175-0
Impurity and stabilizing additive that contribute to GHS Classification	: A s    Less than 0.10% P b    Less than 0.10%

### 4. FIRST AID MEASURES<sup>②, ③, ④, ⑤</sup>

Following inhalation	: Move affected person to fresh air. Seek medical attention.
Following skin contact	: Wash with water and remove clothes if necessary.
Following eye contact	: Flush eye thoroughly with water, also under eyelids.
After ingestion	: Get medical attention immediately.
Most important symptoms and effects, both acute and delayed	: Acute or delayed effects are not anticipated for antimony trioxide.
Protection of person who do first aid	: No information.
Special precaution statement for doctor	: No information.

### 5. FIRE FIGHTING MEASURES<sup>②, ③, ④, ⑤</sup>

Extinguishing media	: No special restrictions. Prevent spreading fire using water, powder, carbon dioxide.
Unsuitable extinguishing media	: No information.
Special hazards arising from the substance or mixture	: Antimony trioxide dust.
Protection for fire-fighter	: In the event of a fire, wear full protective clothing, move it to the place of safety promptly and operate.

### 6. ACCIDENTAL RELEASE MEASURES<sup>②, ③, ⑤</sup>

Personal precautions, protective equipment and emergency procedures	: Do not breath dust. Avoid contact with skin, eyes and clothing. Wear dust mask and goggles.
Environmental precautions	: Dispose of material in accordance with all Federal, State and Local regulations. Burial an approved waste landfill is recommended.
Methods of material for Containment and cleaning Up	: Vacuum or sweep all spilled material without creating dust and place in closed plastic bags for disposal.
Prevention of second disaster	: Set up a rope around a scattered place and do it and prohibit the entrance of the person.

**Safety data sheet (Antimony Trioxide)****7. HANDLING AND STORAGE<sup>②、③、④、⑤</sup>**

Handling :

Technological countermeasure

(local ventilation/General

Ventilation etc)

; This product is powdery, so, we must prevent it from contacting eyes, mouth and skin.

Safety precaution

; After the work is done, clean the stained points.

Do not eat, drink or smoke at the work place.

Do not inhale flying dust.

Do not put into mouth.

Avoid contact with eye and skin.

Wash hands and face, change contaminated clothing after handling.

Avoid contact

; To avoid mixing with Hydrogen gas.

To avoid mixing with Chlorine and Carbon tetrachloride.

To avoid mixing with Bromine trifluoride.

Storage

Safety storage condition ; To avoid absorption of moisture, store in low-humidity and ventilative place.

Don't store unsealed.

Safety packaging material ; Establish whether the container conforms test standard on a voluntary basis.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION<sup>③、⑤</sup>**

Engineering controls

; In case of being placed indoors, ventilate as much as possible, and if possible, set up a dust-collector.

Exposure control limits

Effect of over exposure<sup>⑥</sup> : 0.5mg/m<sup>3</sup> (TLV-TWA : as Sb) ACGIH(2005 Edition)

Personal protective equipment

Respiratory protection : Antidust mask

Hands protection : Rubber or vinyl gloves

Eyes protection : Safety goggles

Skin and body protection : A long-sleeved fatigue dress

**Safety data sheet (Antimony Trioxide)****9. PHYSICAL AND CHEMICAL PROPERTIES<sup>④、⑤</sup>**

Physical state	: Solid
Figure	: Powder
Color	: White
Odor	: Odorless
Melting point/freezing point	: Melting point 656°C
Boiling point, initial boiling point and boiling range	: 1,425°C
Flammability	: Non-flammable.
Upper/lower flammability or explosive limits	: Non explosive.
Flash point	: Not applicable as only relevant for liquids or low melting point solids.
Auto-ignition temperature	: Non explosive.
Decomposition temperature	: Non explosive.
pH	: Not applicable to powders.
Viscosity	: Not applicable to powders.
Solubility in water <sup>⑦</sup>	: 1.86mg/L (20~25°C)
Others	: Soluble in chloric acid, tartaric acid, acetic acid and caustic Alkali.
Partition coefficient n-octanol/water	: No information.
Vapor pressure	: 133 Pa at 574 °C
Relative density	: 5.2g/m <sup>3</sup> (20°C)
Vapor density	: No information.
Particle characteristics	: No information.

**10. STABILITY AND REACTIVITY<sup>⑤</sup>**

Reactivity	: Stable under ordinary conditions.
Chemical stability	: Stable under ordinary conditions.
Possibility of hazardous reactions	: To avoid mixing with Hydrogen gas. To avoid mixing with Chlorine and Carbon tetrachloride. To avoid mixing with Bromine trifluoride.
Conditions to avoid	: Avoid dust formation.
Incompatible materials	: To avoid mixing with Hydrogen gas. To avoid mixing with Chlorine and Carbon tetrachloride. To avoid mixing with Bromine trifluoride.
Hazardous decomposition products	: No information.

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### 11. TOXICOLOGICAL INFORMATION

- Acute toxicity(oral) <sup>⑧、⑨、⑩、⑪</sup> : Oral (rat) LD50:>34,600mg/kg
- Skin corrosion/irritation<sup>⑤、⑥</sup> : Can cause dermatitis or similar skin irritation during prolonged contact.  
This can increase in hot or humid weather.
- Eye irritation<sup>⑫</sup> : There is no eye irritation in the rabbit based on the OECD guideline.
- Skin irritation<sup>⑬</sup> : There is no skin irritation at the guinea pig examination based on the OECD guideline.
- Germ cell mutagenicity<sup>⑭</sup> : There is no productive cell mutagenicity at the small core and chromosomal aberration test by 21-day repetition exposure in rat marrow.
- Carcinogenicity<sup>⑩、⑮、⑯</sup> : There is doubt of carcinogenic fear to humans by superfluous inhalation of a antimony trioxide particulate.
- IARC : Group 2B (It can be carcinogenic for the human body.)
- EU : Category 3(Substances which cause concern for man owing to possible carcinogenic effects but in respect of which the available information in not adequate for making satisfactory assessment.)
- ACGIH : Manufacturing process A2 (There may be cause for concern as a carcinogen for the human body.)  
No classification as a carcinogen regarding handling and use.
- EPA : Not applicable
- NTP : Not applicable
- Reproduction toxicity<sup>⑰</sup> : In vivo of a rat There is no embryotoxic or teratogenicity according to Antimony trioxide exposure by inhalation development examination.
- Specific target organ toxicity<sup>⑨、⑩、⑱</sup> (single exposure) : In the latest taking orally and inhalation toxicity study, toxic influence is not observed at an exposure period, and subsequent subsequent recovery/observation period.
- Specific target organ toxicity (repeated exposure) : In a very high-concentration case, we are anxious about fear of a breathing problem, but the toxic influence by repetitive exposure does not exist in the modernistic workplace environment managed with the present dust-collecting equipment or protective equipment.
- Aspiration hazard : It is un-corresponding with an inorganic oxide solid.

**Safety data sheet (Antimony Trioxide)****12. ECOLOGICAL INFORMATION<sup>®</sup>**

Persistence/resolvability : It is un-corresponding with an inorganic oxide solid.  
Accumulative : It cannot classify.  
Eco toxicity (fish poison nature) : Non-influenced concentration (NOEC) is un-corresponding above solubility.  
Migrating in soil : It cannot classify.  
Hazardous to the ozone layer : It cannot classify.  
Other : Hazardous to the aquatic environment (acute • chronic)  
; By the special committee deliberations over a chemical substance classification and a display in Europe, it is concluded that he has no necessity for a hazardous property classification as a result of all toxic data and solubility data verification.

**13. DISPOSAL CONSIDERATIONS<sup>③, ④, ⑤</sup>**

Disposal of product : Landfill subject to local regulation  
Disposal of packaging : Landfill or incineration.

**14. TRANSPORT INFORMATION<sup>④, ⑤</sup>**

International regulation  
UN code : The special provision SP45 is applicable to the UN number 1549 (Hazard class 6.1 and packaging group 3 ). It means that antimony sulfides and oxides, which contain not more than 0.5% of arsenic calculated on the total weight, are not subject to these regulations.  
Proper shipping name : Not applicable.  
UN Class : Not applicable.  
Packing group : Not applicable.  
Marine pollutant : Not applicable.

**15. REGULATORY INFORMATION**

Worldwide chemical inventories  
ENCS (Japan) : 1-543  
TSCA (USA) : Listed  
ECL (Korea) : Listed  
DSL (Canada) : Listed  
PICCS (Philippines) : Listed  
AICS (Australia) : Listed  
IECSC (China) : Listed  
Other regulatory information : Follow regulation and law of each country or region.

**Safety data sheet (Antimony Trioxide)****16. OTHER INFORMATION**

Notes on chemistry article handling :

Do not eat.

Avoid contact with eyes and skin.

Wash thoroughly after handling and take a shower at end on work shift wear clean clothing daily.

Do not dispose to rivers.

Handling of written contents :

Written contents are created based on the data which have come to hand at present, information, data, etc., and may be reformed by new knowledge. Moreover, since notes are aimed at the usual handling, in carrying out special handling, please use after the safety-measures enforcement suitable for a use and usage.

About written contents, it is information offer, and what kind of guarantee is not made.

Cited reference etc.

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- ④ 14705 NO KAGAKUSYOUHIN (KAGAKU KOUGYOU NIPPOUSYA)
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- ⑨ LPT Laboratory of Pharmacology and Toxicology KG LPG Report No. 19226/05. January 24, 2005  
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- ⑩ De Bie et al., 2005 TNO Chemistry, unpublished report  
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- ⑮ Newton et al., Fundamental and Applied Toxicology 22:561-576 (1994) 「Subchronic and chronic inhalation toxicity of antimony trioxide in the rats」
- ⑯ PSP mode of action position paper (Poorly Soluble Particulate mode of action and Particle Overload-Related Lung Pathology) 「Mechanism of Lung Carcinogenesis for Poorly Soluble Substances」
- ⑰ Newton et al., 2004 MPI Research, Inc. Study Number 952-002, Nov. 17, 2003 「An Inhalation Developmental Toxicity Study in Rats with Antimony Trioxide」
- ⑱ EUROPEAN COMMISSION European Chemical Bureau Ispra, July 5, 2006 Follow-up III-Final Follow-up Commission Working Group on the Classification and Labelling of Dangerous Substances Meeting on Environmental Effects of Existing Chemicals, Pesticides & New Chemicals April 26-27, 2006 Hotel Concorde, Arona