



MATERIAL SAFETY DATA SHEET

ANTIMONY TRIOXIDE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

| | | | |
|--------------------------------|--|-------------------------|-------------|
| Product name: | Antimony trioxide | EINECS No.: | 215-175-0 |
| Chemical name/synonyms: | Antimony oxide; antimony peroxide | CAS No.: | 1309-64-4 |
| Formula: | Sb ₂ O ₃ | Chemical family: | Metal oxide |
| Supplied by: | Chengdu Chemphys Chemical Industry Co., Ltd. No.381, Kebei Rd., Cross-Strait Technology Industry Development Park, Wenjiang, Chengdu, Sichuan, 611137, P. R. China | | |
| Emergency phone: | 86-28-85228102 | | |
| Product use: | Flame retardant; Additive in ZnO varistor | | |
| Molecular Weight: | 291.52 | | |
| More information: | | | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredient | CAS No | Percent | Hazardous |
|-------------------|---------------|----------------|------------------|
| Antimony Trioxide | 1309-64-4 | 99 - 100% | Yes |

3. HAZARDS IDENTIFICATION

GENERAL: WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES, RESPIRATORY AND GASTROINTESTINAL TRACTS. AFFECTS THE CARDIOVASCULAR SYSTEM.

POTENTIAL HEALTH EFFECTS:

INHALATION: Causes irritation to the respiratory tract. Symptoms can include sore throat, cough.

INGESTION: Ingestion causes irritation to the mouth, nose and stomach. Other symptoms include salivation, cough, metallic taste, nausea, vomiting, bloody diarrhea, dizziness, irritability, and muscular pains. May cause heart to beat irregularly or stop.

SKIN CONTACT: Causes irritation to skin. Symptoms include redness, itching, and pain.

EYE CONTACT: Causes irritation, redness, and pain.

CHRONIC EXPOSURE: Prolonged or repeated exposure may damage the liver and the heart muscle. Prolonged skin contact may cause irritation,



dermatitis, itching, and pimple eruptions. There is an association between antimony trioxide production and an increased incidence of lung cancer.

AGGRAVATION OF PRE-EXISTING CONDITIONS:

Persons with pre-existing skin disorders, impaired respiratory function, or heart disorders (or disease) may be more susceptible to the effects of the substance.

4. FIRST AID MEASURES

- INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- INGESTION:** Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.
- SKIN CONTACT:** Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
- EYE CONTACT:** Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
- NOTE TO PHYSICIAN:** A urine test can be used to confirm exposure to antimony trioxide: 1 mg / ml is indicative of potentially harmful exposure. Chelators such as BAL and unithiol have been used in some countries.

5. FIRE FIGHTING MEASURES

- GENERAL INFORMATION:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Powder ignites and burns when heated. Containers may explode when heated.
- EXTINGUISHING MEDIA:** Use water spray, dry chemical, carbon dioxide, or appropriate foam.

6. ACCIDENTAL RELEASE MEASURES

- GENERAL:** Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8.
- SPILLS:** Sweep up and containerize for reclamation or disposal.

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Vacuuming or wet sweeping may be used to avoid dust dispersal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

SMALL SPILL:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

LARGE SPILL:

Use a shovel to put the material into a convenient waste disposal container. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7. HANDLING AND STORAGE

PRECAUTIONS DURING HANDLING:

Avoid dust emission. Wear dust mask, gloves, long sleeved shirt and goggles. Do not eat, drink or smoke at the work place.

STORAGE:

Store in well-ventilated dry area. Do not store in bare conditions. Avoid inadequate and mislabeled packing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS:

-OSHA Permissible Exposure Limit (PEL): 0.5 mg (Sb) m³ (TWA)

-ACGIH Threshold Limit Value (TLV):

0.5 mg (Sb)/m³ (TWA) for handling and use,
A2 suspected human carcinogen for production.

VENTILATION SYSTEM:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

PERSONAL RESPIRATORS (NIOSH APPROVED):

If the exposure limit is exceeded, a full facepiece respirator with dust/mist filter may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier,

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whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

SKIN PROTECTION:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

EYE PROTECTION:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-----------------------------------|---|--|-------------------|
| Appearance: | White powder | Odor: | Odorless |
| Solubility: | Insoluble in water @ 25°C (77F); Slightly soluble in water @ 100°C (212F) | Specific Gravity: | 5.2 |
| pH: | Amphoteric | % Volatiles by volume @ 21°C (70F): | 0 |
| Boiling Point: | 1456°C (2652F) | Melting Point: | 655°C (1211F) |
| Vapor Density (Air=1): | No information found | Vapor Pressure (mm Hg): | 1 @ 574°C (1065F) |
| Evaporation Rate (BuAc=1): | No information found | | |

10. STABILITY AND REACTIVITY

STABILITY:

Stable under ordinary conditions of use and storage.

HAZARDOUS DECOMPOSITION PRODUCTS:

Toxic metal fumes may form when heated to decomposition.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

Bromine trifluoride, strong acids, strong bases, reducing agents, perchloric acid, and chlorinated rubber. Reduction with hydrogen or if used near acids it may form a deadly gas (stibine).

CONDITIONS TO AVOID:

Dusting and incompatibles.

CORROSIVITY:

Non-corrosive in presence of glass.

11. TOXICOLOGICAL INFORMATION

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ACUTE TOXICITY:

LD50 oral rat: > 20,000 mg/kg

Intraperitoneal LD50 rat: 3250 mg/kg

Inhalation of antimony trioxide causes lung and liver damage in animals. It is thought to be animal carcinogen at dose levels upwards of ten times the TLV.

Cancer Lists

| | NTP Carcinogen | | |
|-------------------|----------------|-------------|---------------|
| Ingredient | Known | Anticipated | IARC Category |
| Antimony Trioxide | No | No | 2B |

CHRONIC EFFECTS ON HUMANS:

CARCINOGENIC EFFECTS: Classified A2 (Suspected for human.) by ACGIH.

Causes damage to the following organs: lungs, mucous membranes.

OTHER TOXIC EFFECTS ON HUMANS:

Hazardous in case of skin contact (irritant, sensitizer), of ingestion, of inhalation.

SPECIAL REMARKS ON TOXICITY TO ANIMALS:

Not available.

SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS:

May cause allergic skin reactions with repeated exposure.

SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS:

Material is irritating to mucous membranes and upper respiratory tract.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

When released into the soil, this material is not expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly. When released into water, this material is not expected to evaporate significantly.

ENVIRONMENTAL TOXICITY:

The LC50/96-hour values for fish are over 100 mg/l.

13. DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ

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from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

IATA

Shipping Name: Not regulated.
Hazard Class:
UN Number:
Packing Group:

IMO

Shipping Name: Not regulated.
Hazard Class:
UN Number:
Packing Group:

RID/ADR

Shipping Name: Not regulated.
Hazard Class:
UN Number:
Packing Group:

USA RQ: CAS# 1309-64-4: 1000 lb final RQ; 454 kg final RQ

15. REGULATORY INFORMATION

European/International Regulations: European Labeling in Accordance with EC Directives

Hazard Symbols : XN

Risk Phrases: R 40 Limited evidence of a carcinogenic effect.

Safety Phrases: S 22 Do not breathe dust.

S 36/37 Wear suitable protective clothing and gloves.

WGK (Water Danger/Protection)

Canada: CAS# 1309-64-4 is listed on Canada's DSL List

US Federal TSCA CAS# 1309-64-4 is listed on the TSCA Inventory.

16. OTHER INFORMATION

MSDS Creation Date: 01/07/2000

Revision #2 Date: 17/07/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability

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