SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Antimony Trioxide, all grades

MONTANA BRAND HT  MONTANA BRAND LT
MONTANA BRAND HTW  MONTANA BRAND LTW
MONTANA BRAND MP  MONTANA BRAND VF
MONTANA BRND MPW  MONTANA BRAND VFW

Common Names: Antimony Oxide, Sb₂O₃, Antimony (III) oxide

Company: United States Antimony Corporation
47 Cox Gulch  P.O. Box 643
Thompson Falls, MT  59873
United States of America

Telephone:  (US) +1 406-827-3523
Fax:  (US) +1 406-827-3543

Emergency telephone number:  (US) +1 406-827-3523

CHEMTREC  (800) 424-9300

Product Uses: Flame retardant synergist, porcelain opacifier, glass fining agent, catalyst, electronics
SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Limited evidence of a carcinogenic effect.

Target Organs
Lungs

GHS Classification
Eye irritation (Category 28)
Carcinogenicity (Category 2)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram
Warning

Signal word
Hazard statement(s)
H320 Causes eye irritation.
H351 Suspected of causing cancer.
H402 Harmful to aquatic life.

Precautionary statement(s)
P281 Use personal protective equipment as required.
P 306 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
HMIS Classification
- Health Hazard: 2
- Chronic Health Hazard: *
- Flammability: 0
- Physical Hazards: 0

NFPA Rating
- Health Hazard: 2
- Fire: 0
- Reactivity Hazard: 0

Potential Health Effects
- Inhalation: May cause respiratory tract irritation.
- Skin: May be harmful if absorbed through skin. May cause skin irritation.
- Eyes: May cause eye irritation.
- Ingestion: May be harmful if swallowed.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Formula</th>
<th>Sb₂O₃</th>
<th>&gt;=99.7%*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic (As)</td>
<td></td>
<td>&lt;0.1%</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td></td>
<td>&lt;0.1%</td>
</tr>
</tbody>
</table>

Molecular Weight 291.52 g/mol

Antimony Trioxide
- CAS No. 1309-64-4
- EC No. 215-175-0

SECTION 4. FIRST AID MEASURES

General advice
Move out of dangerous area. Consult a physician. Show this Safety Data Sheet to the doctor in attendance.

If inhaled
If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap with plenty of water for at least 15 minutes. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes. Consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions – Antimony oxide.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust, vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge to the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Vacuum up, or sweep up and shovel. Keep in suitable closed containers for disposal.
SECTION 7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control Parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony trioxide</td>
<td>1309-64-4</td>
<td>TWA</td>
<td>0.5 mg/m$^3$</td>
<td>USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.5 mg/m$^3$</td>
<td>USA. OSHA – Table Z-1 Limits for Air Contaminants – 1910.1000</td>
</tr>
<tr>
<td>Pneumoconiosis, Lung cancer. Exposure by all routs should be carefully controlled to levels as low as possible. Suspected human carcinogen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
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<td>TWA</td>
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<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
</tbody>
</table>

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate wear a NIOSH/MSHA (US) or CEN (EU) approved dust respirator fitted with type N100 (US) or type P3 (EN 143) (EU) dust cartridges as a back-up to engineering controls. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator’s use.

Hand protection
Chemical resistant protective gloves
Eye protection
Safety glasses with side-shields conforming to EN 166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and body protection
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands thoroughly before breaks and at the end of the day. Contaminated clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Keep work areas clean. Do not eat, drink, chew gum, use tobacco products, or apply cosmetics in work areas.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form  Powder
Color  White
Odor  Odorless
Odor threshold  not applicable

Safety data
pH  not applicable
Melting/freezing point  655°C (1,211°F)
Boiling point  1,425°C (2,594°F)
Flash point  not applicable
Ignition temperature  not applicable
Autoignition temperature  not applicable
Lower explosion limit  not applicable
Upper explosion limit  not applicable
Vapor pressure  not applicable
Density  5.67 g/cm³
Water solubility  0.0033 g/l
Partition coefficient:
n-octanol/water  not applicable
SECTION 10. STABILITY AND REACTIVITY

Chemical stability
Stable under normal conditions.

Possibility of hazardous reactions
Reaction with strong reducing agents can produce toxic and flammable stibine gas.

Conditions to avoid
Strong acids
Strong bases
Strong oxidizing agents
Strong reducing agents
Hot perchloric acid

Materials to avoid
Strong reducing agents
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions – antimony oxide fumes

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral LD50
LD50 Oral – rat >34,600 mg/kg

Inhalation LC50
No data available

Dermal LD50
LD50 Dermal – rabbit >2,000 mg/kg
Other information on acute toxicity
LD50 Intraperitoneal – rat 3,250 mg/kg
LD50 Intraperitoneal – mouse 172 mg/kg

Skin corrosion/irritation
May irritate skin
May cause temporary small itchy pustules (antimony measles) in hot and humid conditions.

Serious eye damage/irritation
May irritate eyes
Eyes – rabbit – Mild eye irritation – Draize Test

Respiratory or skin sensitizer
Not a respiratory nor skin sensitizer. (IAOIA Risk Assesment 2004 – 2005)

Germ cell mutagenicity
no data available

Carcinogenicity
Carcinogenicity – rat – Inhalation
Tumorigenic: Carcinogenic by RTECS criteria. Respiration: Lungs, Thorax, Tumors Liver: Tumors

Limited evidence of carcinogenicity in animal studies.

IARC Class 2B: Possibly carcinogenic to humans.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by OSHA.

Antimony trioxide has been classified by IRAC as a Class 2B. An IARC 2B material exhibits sufficient evidence in animal tests to be a possible human carcinogen. Antimony oxide production has been determined by ACGIH to be a carcinogenic risk. Antimony trioxide has been identified by the EPA as a suspected lung carcinogen. Historical studies have concluded that exposure to elevated levels of antimony oxide may cause lung carcinoma. However, the most recent study conducted under the EPA's Voluntary Test Program by the
Antimony Oxide Industry Association (AOIA), has concluded that antimony oxide does not cause lung cancer in rats at occupational exposure levels. The levels tested ranged from 0.005 mg/m³ to 6 mg/m³ (from one tenth to ten times the OSHA TWA Threshold Limit Value.

**Reproductive toxicity**
Reproductive toxicity – rat – inhalation
Effects on Fertility: Post-implant mortality (e.g., dead and/or resorbed implants per total number of implants).
Effects on Embryo or Fetus: Fetal Death.

**Teratogenicity**
no data available

**Specific target organ toxicity – single exposure (Globally Harmonized System)**
no data available

**Specific target organ toxicity – repeated exposure (Globally Harmonized System)**
no data available

**Repeated dose toxicity**
Prolonged and excessive inhalation exposures to antimony trioxide may result in respiratory effects, antimony pneumoconiosis, pulmonary fibrosis, inflammation of the lungs, airway obstruction, broncospasms, reproductive effects, gastrointestinal upset, liver effects, and neurological effects (muscle weakness, subnormal gait).
Prolonged and excessive oral exposure may result in gastrointestinal discomfort and ulcers, blood effects, liver effects, neurological effects inflammation of the mucous membranes and stomatitis.
In a recent 90 day oral study in male and female rats, no adverse effects were observed at doses of 1000, 5000, and 20000 ppm. The No Adverse Effect Level for antimony trioxide was 20000 ppm for both sexes.
In a developmental study in Sprague-Dewley rats consisting of three treatment groups and a control group, each containing 26 females at doses of 2.6, 4.4, and 6.3 mg/m³, no developmental effects were observed. The LOAEL for material toxicity was established at 2.6 mg/m³. The NOEL for developmental toxicity was 6.3 mg/m³, the highest exposure level evaluated.

**Aspiration hazard**
no data available

**Synergistic effects**
no data available
Symptoms of overexposure
Reddening of the eyes
Skin irritation
Eye irritation
Respiratory irritation
Shortness of breath
Nose bleeding
Headache
Dizziness
Nausea
Vomiting
Gastrointestinal discomfort

Further information
The toxicological properties of this material have not been fully characterized.

NTP
US National Toxicity Program (NTP) Report on Carcinogens
This product contains a component at levels greater than or equal to 0.1% that is identified as probable, possible, or confirmed human carcinogen by the US National Toxicology Program Report on Carcinogens.

IARC
US IARC Monographs on Occupational Exposure to Chemical Agents
This product contains a component at levels greater than or equal to 0.1% that is identified as probable, possible, or confirmed human carcinogen by IARC.

OSHASP
This product contains a component at levels greater than or equal to 0.1% that is identified as probable, possible, or confirmed human carcinogen by OSHA.

ACGIH
US ACGIH Threshold Limit Values
This product contains a component at levels greater than or equal to 0.1% that is identified as probable, possible, or confirmed human carcinogen by ACGIH.
SECTION 12. ECOLOGICAL INFORMATION

Avoid releases to the environment. Harmful to aquatic life.

Toxicity to fish, LC50
Species: Pimephales promelas (flathead minnow)
Dose: 21.9 mg/l
Exposure time: 96 h
For antimony ion (Sb\(^{+3}\))

Toxicity to daphnia and other aquatic invertebrates, LC50
Species: Daphnia magna (Water flea)
Dose: 18.8 mg/l
Exposure time: 48 h
For antimony ion (Sb\(^{+3}\))

Chronic toxicity to daphnia and other aquatic invertebrates, NOEC
Species: Daphnia magna (Water flea)
Concentration: 1.74 mg/l
Exposure time: 21 d
For antimony ion (Sb\(^{+3}\))

Toxicity to algae, EbC50
Species: Raphidocelis subcapatata (freshwater green alga)
Dose: >2.4 mg/l
Exposure time: 72 h
For antimony ion (Sb\(^{+3}\))

Toxicity to algae, EbC50
Species: Raphidocelis subcapatata (freshwater green alga)
Dose: >2.4 mg/l
Exposure time: 72 h
For antimony ion (Sb\(^{+3}\))

Additional ecological information
In a 42 day chronic sediment test with Hyalella azteca, growth effects after 28 days resulted in an NOEC of 124 mg/kg dw

In a 42 day soil toxicity test with Enchytraeus albidus, mortality and reproduction resulted in the same NOEC and LOEC values of 760 mg/kg dw and 2,012 mg/kg dw, respectively.
Inhibition action on bacteria (Pseudomonas putida): At 3.5 mg/l no inhibiting action.

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste material in compliance with all federal, state and local laws.

Dispose of waste in an approved waste disposal facility

SECTION 14. TRANSPORT INFORMATION

DOT (US) UN-Number 3077
    Proper shipping name Environmentally hazardous substance, solid, n.o.s.
    Class 9
    Packing group III
    Reportable Quantity (RQ) 1000 lbs

IATA UN-Number 3077
    Proper shipping name Environmentally hazardous substance, solid, n.o.s.
    Class 9
    Packing group III

Additional information
Regulated for transport in the United States only. Not regulated for containers less than 400 lbs.
For containers 400 – 999 lbs: Environmentally hazardous substance, solid, n.o.s. (Contains Arsenic)

For containers 1,000 – 4,999 lbs: Environmentally hazardous substance, solid, n.o.s. (Contains Arsenic and Antimony Oxide)

For containers 5,000 lbs or greater: Environmentally hazardous substance, solid, n.o.s. (Contains Arsenic, Lead and Antimony Trioxide)

SECTION 15. REGULATORY INFORMATION

Federal regulatory information

OSHA Hazards

This material is hazardous under the criteria of the Federal OSHA Hazard Communications Standard 29CFR 1910.1200

Carcinogen

SARA Hazard category

Acute Health Hazard
Chronic Health Hazard

US CERCLA

US Environmental Protection Agency (EPA); The 1980 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Reportable quantity (RQ) 1,000 lbs

Antimony Trioxide CAS 1309-64-4 >=99.7%

US SARA 313

US Environmental Protection Agency (EPA); Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 Section 313 Reportable Chemicals List, Toxic chemical listings and deminimis concentrations as amended by US Federal Register Final rules

Deminimis concentration: 1%

This category listing is for chemicals listed under antimony compounds which are designated carcinogenic according to 29
Antimony Trioxide MONTANA BRAND, all grades

CFR1910.1200(d)(4) which have a De Minimis concentration value of 1.0%

Antimony Trioxide    CAS  1309-64-4    >=99.7%

US State Regulations

US MA RTK
US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-Know law; The Massachusetts Substance List, 105 CMR 670.000

Massachusetts hazardous substance

Antimony Trioxide    CAS  1309-64-4    >=99.7%

US NJ RTK
US. New Jersey Department of Environmental Protection; Bureau of Hazardous Substances; New Jersey Right to Know L, Hazardous Substance List (P.L. 1983, C.135, NJSA 34:5A et seq.

Hazardous substance

Antimony Trioxide    CAS  1309-64-4    >=99.7%

US PA RTK
US. Commonwealth of Pennsylvania – Department of Labor and Industry; Pennsylvania Code Title 34, Labor and Industry Chapter 323

Environmental hazard, hazardous substance

Antimony Trioxide    CAS  1309-64-4    >=99.7%

California Prop. 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Antimony Trioxide    CAS  1309-64-4    >=99.7%

Carcinogen
Arsonic  
Developmental toxin  
Female reproductive toxin  
Male reproductive toxin  

Lead  
Carcinogen  

Lead  
Developmental toxin  
Female reproductive toxin  
Male reproductive toxin  

The components of this product are reported in the following inventories:

- TSCA: Listed  
- DSL: Listed  
- EINECS: Listed  
- AICS: Listed  
- ENCS: Listed  
- KECE: Listed  
- PICCS: Listed  
- IECSC: Listed  

SECTION 16. OTHER INFORMATION

NFPA Classification  
Health Hazard: 2  
Fire Hazard: 0  
Reactivity Hazard: 0

HMIS Classification  
Health Hazard: 2  
Chronic Health Hazard: *  
Flammability: 0  
Reactivity: 0  
PPE: Ask supervisor or safety specialist for proper handling instructions.