

# SAFETY DATA SHEET

Creation Date 22-Dec-2009

Revision Date 09-Feb-2024

Revision Number 7

## 1. Identification

**Product Name** Antimony(III) oxide

**Cat No. :**

**CAS No** 1309-64-4  
**Synonyms** Antimony trioxide

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

### Details of the supplier of the safety data sheet

#### Company

Stanford Advanced Materials  
Address : 23661 Birtcher Dr.,  
Lake Forest, CA 92630 U.S.A.  
Tel: (949) 407-8904  
Fax: (949) 812-6690

#### **Emergency Telephone Number**

(949) 407-8904  
(This telephone number is available 24 hours per day, 7 days per week.)

## 2. Hazard(s) identification

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Carcinogenicity

Category 2

### Label Elements

#### **Signal Word**

Warning

#### **Hazard Statements**

Suspected of causing cancer

**Precautionary Statements****Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required

**Response**

IF exposed or concerned: Get medical attention/advice

**Storage**

Store locked up

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

WARNING. Cancer and Reproductive Harm - www.samaterials.com

### 3. Composition/Information on Ingredients

Component	CAS No	Weight %
Antimony trioxide	1309-64-4	>95
Lead monoxide	1317-36-8	<0.1
Arsenic trioxide	1327-53-3	<0.1

### 4. First-aid measures

<b>General Advice</b>	If symptoms persist, call a physician.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
<b>Most important symptoms and effects</b>	None reasonably foreseeable.
<b>Notes to Physician</b>	Treat symptomatically

### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam.
<b>Unsuitable Extinguishing Media</b>	No information available

<b>Flash Point</b>	No information available
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Antimony oxide.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

<b>Health</b> 2	<b>Flammability</b> 1	<b>Instability</b> 0	<b>Physical hazards</b> N/A
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6. Accidental release measures

<b>Personal Precautions</b>	Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.
<b>Environmental Precautions</b>	Do not flush into surface water or sanitary sewer system. Should not be released into the environment. Do not allow material to contaminate ground water system.
<b>Methods for Containment and Clean Up</b>	Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

<b>Handling</b>	Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.
<b>Storage.</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong acids. Strong bases. Reducing Agent. Strong oxidizing agents.

8. Exposure controls / personal protection

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Antimony trioxide	TWA: 0.02 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	(Vacated) TWA: 0.5 mg/m <sup>3</sup>	IDLH: 50 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Lead monoxide	TWA: 0.05 mg/m <sup>3</sup>		IDLH: 100 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>
Arsenic trioxide	TWA: 0.01 mg/m <sup>3</sup>		IDLH: 5 mg/m <sup>3</sup> Ceiling: 0.002 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists  
 OSHA - Occupational Safety and Health Administration  
 NIOSH: NIOSH - National Institute for Occupational Safety and Health

<b>Engineering Measures</b>	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations
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and safety showers are close to the workstation location. Use only under a chemical fume hood.

### Personal Protective Equipment

<b>Eye/face Protection</b>	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
<b>Recommended Filter type:</b>	Particulates filter conforming to EN 143.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

<b>Physical State</b>	Powder Solid
<b>Appearance</b>	White
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting Point/Range</b>	656 °C / 1212.8 °F
<b>Boiling Point/Range</b>	1550 °C / 2822 °F @ 760 mmHg
<b>Flash Point</b>	No information available
<b>Evaporation Rate</b>	Not applicable
<b>Flammability (solid,gas)</b>	No information available
<b>Flammability or explosive limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Vapor Pressure</b>	1.3 hPa @ 574 °C
<b>Vapor Density</b>	Not applicable
<b>Specific Gravity</b>	No information available
<b>Solubility</b>	Slightly soluble in water
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No information available
<b>Decomposition Temperature</b>	No information available
<b>Viscosity</b>	Not applicable
<b>Molecular Formula</b>	O3 Sb2
<b>Molecular Weight</b>	291.42

## 10. Stability and reactivity

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Avoid dust formation. Incompatible products. Excess heat.
<b>Incompatible Materials</b>	Strong acids, Strong bases, Reducing Agent, Strong oxidizing agents
<b>Hazardous Decomposition Products</b>	Antimony oxide
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Antimony trioxide	LD50 > 34600 mg/kg ( Rat )	LD50 > 2000 mg/kg ( Rabbit )	LC50 > 5.2 mg/L ( Rat ) 4 h
Lead monoxide	LD50 > 10000 mg/kg ( Rat )	LD50 > 2000 mg/kg ( Rat )	LC50 > 5.05 mg/L ( Rat ) 4 h
Arsenic trioxide	LD50 = 20 mg/kg ( Rat )	Not listed	Not listed

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** May cause skin, eye, and respiratory tract irritation

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Antimony trioxide	1309-64-4	Group 2B	Reasonably Anticipated	A2	X	A2
Lead monoxide	1317-36-8	Group 2A	Reasonably Anticipated	A3	X	Not listed
Arsenic trioxide	1327-53-3	Group 1	Known	A1	X	A1

*IARC (International Agency for Research on Cancer)*

*NTP: (National Toxicity Program)*

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

*Mexico - Occupational Exposure Limits - Carcinogens*

*IARC (International Agency for Research on Cancer)*

*Group 1 - Carcinogenic to Humans*

*Group 2A - Probably Carcinogenic to Humans*

*Group 2B - Possibly Carcinogenic to Humans*

*NTP: (National Toxicity Program)*

*Known - Known Carcinogen*

*Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*

*A1 - Known Human Carcinogen*

*A2 - Suspected Human Carcinogen*

*A3 - Animal Carcinogen*

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

*Mexico - Occupational Exposure Limits - Carcinogens*

*A1 - Confirmed Human Carcinogen*

*A2 - Suspected Human Carcinogen*

*A3 - Confirmed Animal Carcinogen*

*A4 - Not Classifiable as a Human Carcinogen*

*A5 - Not Suspected as a Human Carcinogen*

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** No information available

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Contains a substance which is: Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Antimony trioxide	EC50: 0.65 - 0.81 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: 0.63 - 0.8 mg/L, 72h (Pseudokirchneriella subcapitata)	LC50 >1000 mg/L/96h (Brachydanio rerio)	EC50 > 3.5 mg/L 7 h	EC50: 361.5 - 496.0 mg/L, 48h Static (Daphnia magna) EC50: > 1000 mg/L, 48h (Daphnia magna)
Lead monoxide	Not listed	Pimephales promelas: LC50=0.3 mg/L 96h	Not listed	EC50=0.13 mg/L 48h
Arsenic trioxide	Not listed	LC50: = 135 mg/L, 96h (Pimephales promelas) LC50: > 1000 mg/L, 96h static (Oncorhynchus mykiss) LC50: 18.8 - 21.4 mg/L, 96h flow-through (Oncorhynchus mykiss)	EC50 = 31.43 mg/L 60 min EC50 = 33.39 mg/L 30 min EC50 = 43.56 mg/L 15 min EC50 = 73.73 mg/L 5 min	EC50 = 0.038 mg/L 24h EC50 = 0.96 mg/L 96h EC50 = 0.038 mg/L 24h

**Persistence and Degradability** based on information available. May persist Insoluble in water

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility. Is not likely mobile in the environment due its low water solubility.

Component	log Pow
Arsenic trioxide	18.1

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT** Not regulated  
**TDG** Not regulated  
**IATA** Not regulated  
**IMDG/IMO** Not regulated

## 15. Regulatory information

### United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Antimony trioxide	1309-64-4	X	ACTIVE	-
Lead monoxide	1317-36-8	X	ACTIVE	-
Arsenic trioxide	1327-53-3	X	ACTIVE	-

### Legend:

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed  
 - - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)** Not applicable

**TSCA 12(b)** - Notices of Export Not applicable

### International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Antimony trioxide	1309-64-4	X	-	215-175-0	X	X	X	X	X	KE-09846
Lead monoxide	1317-36-8	X	-	215-267-0	X	X	X	X	X	KE-21926
Arsenic trioxide	1327-53-3	X	-	215-481-4	X	X	X	X	X	KE-09858

KECL - NIER number or KE number (www.samaterials.com)

### U.S. Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. Note that PBT chemicals are not eligible for the de minimis exemption. For these chemicals, supplier notification limits are provided.

> 0 % = no low concentration cut-off set, supplier notification limit applies.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting thresholds
Antimony trioxide	1309-64-4	>95	1.0 %	-
Lead monoxide	1317-36-8	<0.1	> 0 %	RT = 100 lb
Arsenic trioxide	1327-53-3	<0.1	0.1 %	-

#### SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

#### CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Antimony trioxide	X	1000 lb	X	-
Lead monoxide	-	-	X	-
Arsenic trioxide	X	1 lb	X	-

#### Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Antimony trioxide	X		-
Lead monoxide	X		-
Arsenic trioxide	X		-

**OSHA** - Occupational Safety and Health Administration Not applicable

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Lead monoxide	30 µg/m <sup>3</sup> Action Level 50 µg/m <sup>3</sup> TWA	-
Arsenic trioxide	10 µg/m <sup>3</sup> TWA 5 µg/m <sup>3</sup> Action Level	-

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Antimony trioxide	1000 lb	-	1000 lb 454 kg
Arsenic trioxide	1 lb	1 lb	1 lb 0.454 kg

**California Proposition 65** This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Antimony trioxide	1309-64-4	Carcinogen	-	Carcinogen
Lead monoxide	1317-36-8	Carcinogen	-	Carcinogen
Arsenic trioxide	1327-53-3	Carcinogen Developmental	0.06 µg/day 10 µg/day	Developmental Carcinogen

**U.S. State Right-to-Know Regulations**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Antimony trioxide	X	X	X	X	X
Lead monoxide	X	X	X	X	X
Arsenic trioxide	X	X	X	X	X

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH**

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Antimony trioxide	1309-64-4	-	Use restricted. See item 75. (see link for restriction details)	-
Lead monoxide	1317-36-8	-	Use restricted. See item 30. (see link for restriction details) Use restricted. See item 63. (see link for restriction details) Use restricted. See item 75. (see link for restriction	SVHC Candidate list - Toxic for reproduction (Article 57 c)

			details)	
Arsenic trioxide	1327-53-3	Carcinogenic Category 1A, Article 57 Application date: November 21, 2013 Sunset date: May 21, 2015 Exemption - None	Use restricted. See item 72. (see link for restriction details) Use restricted. See item 28. (see link for restriction details) Use restricted. See item 75. (see link for restriction details) Use restricted. See item 19. (see link for restriction details)	SVHC Candidate list - 215-481-4 - Carcinogenic, Article 57a

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

#### REACH links

<https://echa.europa.eu/authorisation-list>

<https://echa.europa.eu/substances-restricted-under-reach>

<https://echa.europa.eu/candidate-list-table>

#### Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Antimony trioxide	1309-64-4	Listed	Not applicable	Not applicable	Not applicable
Lead monoxide	1317-36-8	Listed	Not applicable	Not applicable	Not applicable
Arsenic trioxide	1327-53-3	Listed	Not applicable	Not applicable	Not applicable

#### Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

#### Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Antimony trioxide	1309-64-4	Not applicable	Not applicable	Not applicable	Annex I - Y27
Lead monoxide	1317-36-8	Not applicable	Not applicable	Not applicable	Annex I - Y31
Arsenic trioxide	1327-53-3	Not applicable	0.1 tonne	Not applicable	Annex I - Y24

## 16. Other information

#### Prepared By

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Email: sales@samaterials.com

#### Creation Date

22-Dec-2009

#### Revision Date

09-Feb-2024

#### Print Date

09-Feb-2024

#### Revision Summary

This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally

Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**