SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Creation Date 22-Dec-2009 **Revision Date** 08-Feb-2024 **Revision Number** 4

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description:	**Antimony(III) oxide**
Cat No. :	**A11123**
Synonyms	Antimony trioxide
Index No	051-005-00-X
CAS No	1309-64-4
EC No	215-175-0
Molecular Formula	O3 Sb2
REACH registration number	-

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use	Laboratory chemicals.
Sector of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

Company

Thermo Fisher (Kandel) GmbH
Erlenbachweg 2, 76870 Kandel, Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300

Swiss distributor - Fisher Scientific AG
Neuhofstrasse 11, CH 4153 Reinach
Tel: +41 (0) 56 618 41 11
https://www.fishersci.ch/ch/en/customer-help-support/forms/email-us.html

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

customers in Switzerland:
Tox Info Suisse Emergency Number: **145 (24hr)**
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)
Chemtrec (24h) Toll-Free: 0800 564 402
Chemtrec Local: +41-43 508 20 11 (Zurich)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Carcinogenicity — Category 2 (H351)

Environmental hazards
Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements

Signal Word **Warning**

Hazard Statements
H351 - Suspected of causing cancer

Precautionary Statements
P201 - Obtain special instructions before use
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308 + P313 - IF exposed or concerned: Get medical advice/attention

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Antimony oxide (Sb2O3)	1309-64-4	EEC No. 215-175-0	>95	Carc. 2 (H351)
Lead oxide (PbO)	1317-36-8	EEC No. 215-267-0	<0.1	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Repr. 1A (H360Df)

				Lact. (H362) STOT RE 1 (H372) Carc. 2 (H351) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Arsenic oxide (As2O3)	1327-53-3	EEC No. 215-481-4	<0.1	Acute Tox. 2 (H300) Skin Corr. 1B (H314) Eye Dam. 1 (H318) Carc. 1A (H350) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Lead oxide (PbO)	Repr. 2 (H361f) :: C>=2.5% STOT RE 2 (H373) :: C>=0.5%	10 (acute) 1 (Chronic)	-
Arsenic oxide (As2O3)	-	1	-

Note
Note 1: The concentration stated or, in the absence of such concentrations, the generic concentrations of this Regulation (Table 3.1) or the generic concentrations of Directive 1999/45/EC (Table 3.2), are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture

REACH registration number	-	
Components	**Reach Registration Number**	
Antimony trioxide	01-2119475613-35	

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

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.

5.3. Advice for firefighters

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

6.2. Environmental precautions

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.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

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.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany)	Storage Class/LGK 13
Switzerland - Storage of hazardous substances	Storage class - SC 11/13 https://www.kvu.ch/de/themen/stoffe-und-produkte https://www.kvu.ch/fr/themes/substances-et-produits https://www.kvu.ch/it/temi/sostanze-e-prodotti

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

Component	European Union	The United Kingdom	France	Belgium	Spain
Antimony oxide (Sb2O3)		STEL: 1.5 mg/m³ 15 min TWA: 0.5 mg/m³ 8 hr	TWA / VME: 0.5 mg/m³ (8 heures).		TWA / VLA-ED: 0.5 mg/m³ (8 horas)
Lead oxide (PbO)		STEL: 0.45 mg/m³ 15 min TWA: 0.15 mg/m³ 8 hr	TWA / VME: 0.1 mg/m³ (8 heures). restrictive limit		TWA / VLA-ED: 0.15 mg/m³ (8 horas)
Arsenic oxide (As2O3)		STEL: 0.3 mg/m³ 15 min TWA: 0.1 mg/m³ 8 hr Carc. except Arsine	TWA / VME: 0.2 mg/m³ (8 heures).		TWA / VLA-ED: 0.01 mg/m³ (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Antimony oxide (Sb2O3)		TWA: 0.006 mg/m³ (8 Stunden). AGW - exposure factor 8	TWA: 0.5 mg/m³ 8 horas		TWA: 0.5 mg/m³ 8 tunteina
Lead oxide (PbO)		TWA: 0.004 mg/m³ (8 Stunden). MAK except lead arsenate and lead chromate Höhepunkt: 0.032 mg/m³	TWA: 0.05 mg/m³ 8 horas		
Arsenic oxide (As2O3)		Haut	TWA: 0.01 mg/m³ 8 horas	TWA: 0.0028 mg/m³ 8 uren	TWA: 0.01 mg/m³ 8 tunteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Antimony oxide (Sb2O3)	TRK-KZGW: 1.2 mg/m³ 15 Minuten TRK-KZGW: 0.4 mg/m³ 15 Minuten TRK-TMW: 0.3 mg/m³ TRK-TMW: 0.1 mg/m³ MAK-KZGW: 1.5 mg/m³ 15 Minuten MAK-TMW: 0.5 mg/m³ 8 Stunden		TWA: 0.1 mg/m³ 8 Stunden		TWA: 0.5 mg/m³ 8 timer
Lead oxide (PbO)	MAK-KZGW: 0.4 mg/m³ 15 Minuten MAK-TMW: 0.1 mg/m³ 8 Stunden		STEL: 0.8 mg/m³ 15 Minuten TWA: 0.1 mg/m³ 8 Stunden		TWA: 0.05 mg/m³ 8 timer
Arsenic oxide (As2O3)	TRK-TMW: 0.1 mg/m³		Haut/Peau TWA: 0.01 mg/m³ 8 Stunden		TWA: 0.005 mg/m³ 8 timer Hud

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Antimony oxide (Sb2O3)		TWA-GVI: 0.5 mg/m³ 8 satima. Sb			TWA: 0.1 mg/m³ 8 hodinách. Sb Ceiling: 0.2 mg/m³ Sb
Arsenic oxide (As2O3)		TWA-GVI: 0.1 mg/m³ 8 satima. As			

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Antimony oxide (Sb2O3)	TWA: 1 mg/m³				

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Antimony oxide (Sb2O3)	MAC: 1 mg/m³			TLV: 0.25 mg/m³ 8 timmar. Sb NGV	
Lead oxide (PbO)				TLV: 0.1 mg/m³ 8 timmar. Pb NGV TLV: 0.05 mg/m³ 8 timmar. Pb NGV	
Arsenic oxide (As2O3)		TWA: 0.1 mg/m³ 8 hodinách STEL: 0.5 mg/m³ 15 minútach	TWA: 0.1 mg/m³ 8 urah inhalable fraction STEL: 0.4 mg/m³ 15 minutah inhalable fraction		

Biological limit values
List source(s):

Component	European Union	United Kingdom	France	Spain	Germany
Lead oxide (PbO)			Lead: 400 µg/L blood Lead: 300 µg/L blood Lead: 200 µg/L blood Lead: 100 µg/L blood		
Arsenic oxide (As2O3)			Metabolites of inorganic Arsenic: 0.05 mg/g creatinine urine end of workweek		

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust
MDHS 99 Metals in air by ICP-AES
MDHS 91 Metals and metalloids in workplace air by X-ray fluorescence spectrometry

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)
See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Antimony oxide (Sb2O3) 1309-64-4 (>95)				DNEL = 67mg/kg bw/day
Arsenic oxide (As2O3) 1327-53-3 (<0.1)				DNEL = 112µg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Antimony oxide (Sb2O3) 1309-64-4 (>95)			DNEL = 0.315mg/m³	
Arsenic oxide (As2O3) 1327-53-3 (<0.1)				DNEL = 5µg/m³

Predicted No Effect Concentration (PNEC)
See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Antimony oxide (Sb2O3) 1309-64-4 (>95)	PNEC = 0.135mg/L	PNEC = 13.4mg/kg sediment dw		PNEC = 3.05mg/L	PNEC = 44.3mg/kg soil dw
Arsenic oxide (As2O3) 1327-53-3 (<0.1)	PNEC = 17.1µg/L	PNEC = 171.1mg/kg	PNEC = 1.2µg/L	PNEC = 80.3µg/L	PNEC = 0.7mg/kg soil dw

		sediment dw			

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Antimony oxide (Sb2O3) 1309-64-4 (>95)	PNEC = 0.0135mg/L	PNEC = 2.68mg/kg sediment dw			
Arsenic oxide (As2O3) 1327-53-3 (<0.1)	PNEC = 1.2µg/L	PNEC = 12mg/kg sediment dw		PNEC = 1.31mg/kg food	

8.2. Exposure controls

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use only under a chemical fume hood.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Neoprene	See manufacturers recommendations	-	EN 374	(minimum requirement)

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
Recommended Filter type: Particulates filter conforming to EN 143

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141
When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Powder Solid

Appearance White
Odor Odorless
Odor Threshold No data available
Melting Point/Range 656 °C / 1212.8 °F
Softening Point No data available

Boiling Point/Range	1550 °C / 2822 °F	@ 760 mmHg
Flammability (liquid)	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Flash Point	No information available	**Method -** No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
pH	No information available	
Viscosity	Not applicable	Solid
Water Solubility	Insoluble in water	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	**log Pow**	
Arsenic oxide (As2O3)	18.1	
Vapor Pressure	1.3 hPa @ 574 °C	
Density / Specific Gravity	No data available	
Bulk Density	No data available	
Vapor Density	Not applicable	Solid
Particle characteristics	No data available	

9.2. Other information

Molecular Formula	O3 Sb2
Molecular Weight	291.42
Evaporation Rate	Not applicable - Solid

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

10.4. Conditions to avoid

Avoid dust formation. Incompatible products. Excess heat.

10.5. Incompatible materials

Strong acids. Strong bases. Reducing Agent. Strong oxidizing agents.

10.6. Hazardous decomposition products

Antimony oxide.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	Based on available data, the classification criteria are not met
Inhalation	Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Antimony oxide (Sb2O3)	LD50 > 34600 mg/kg (Rat)	LD50 > 2000 mg/kg (Rabbit)	LC50 > 5.2 mg/L (Rat) 4 h
Lead oxide (PbO)	LD50 > 10000 mg/kg (Rat)	LD50 > 2000 mg/kg (Rat)	LC50 > 5.05 mg/L (Rat) 4 h
Arsenic oxide (As2O3)	LD50 = 20 mg/kg (Rat)	-	-

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; Category 2

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

Component	EU	UK	Germany	IARC
Antimony oxide (Sb2O3)				Group 2B
Lead oxide (PbO)				Group 2A
Arsenic oxide (As2O3)	Carc Cat. 1A		Cat. 1	Group 1

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs None known.

(j) aspiration hazard; Not applicable
Solid

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

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects 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 Fish	Water Flea	Freshwater Algae

Antimony oxide (Sb2O3)	LC50 >1000 mg/L/96h (Brachydanio rerio)	EC50: 361.5 - 496.0 mg/L, 48h Static (Daphnia magna) EC50: > 1000 mg/L, 48h (Daphnia magna)	EC50: 0.65 - 0.81 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: 0.63 - 0.8 mg/L, 72h (Pseudokirchneriella subcapitata)
Lead oxide (PbO)	Pimephales promelas: LC50=0.3 mg/L 96h	EC50=0.13 mg/L 48h	
Arsenic oxide (As2O3)	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 = 0.038 mg/L 24h EC50 = 0.96 mg/L 96h EC50 = 0.038 mg/L 24h	

Component	Microtox	M-Factor
Antimony oxide (Sb2O3)	EC50 > 3.5 mg/L 7 h	
Lead oxide (PbO)		10 (acute) 1 (Chronic)
Arsenic oxide (As2O3)	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	1

12.2. Persistence and degradability Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary

Persistence based on information available, May persist, Insoluble in water.

Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential May have some potential to bioaccumulate; Product has a high potential to bioconcentrate

Component	log Pow	Bioconcentration factor (BCF)
Arsenic oxide (As2O3)	18.1	80 - 236 dimensionless

12.4. Mobility in soil The product is water soluble, and may spread in water systems Spillage unlikely to penetrate soil Will likely be mobile in the environment due to its water solubility. Is not likely mobile in the environment due its low water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB assessment Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

12.6. Endocrine disrupting properties

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

Persistent Organic Pollutant This product does not contain any known or suspected substance

Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.
Switzerland - Waste Ordinance	Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600 https://www.fedlex.admin.ch/eli/cc/2015/891/en

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

ADR Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

IATA Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk according to IMO instruments Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories
Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Antimony oxide (Sb2O3)	1309-64-4	215-175-0	-	-	X	X	KE-09846	X	X
Lead oxide (PbO)	1317-36-8	215-267-0	-	-	X	X	KE-21926	X	X
Arsenic oxide (As2O3)	1327-53-3	215-481-4	-	-	X	X	KE-09858	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Antimony oxide (Sb2O3)	1309-64-4	X	ACTIVE	X	-	X	X	X
Lead oxide (PbO)	1317-36-8	X	ACTIVE	X	-	X	X	X
Arsenic oxide (As2O3)	1327-53-3	X	ACTIVE	X	-	X	X	X

Legend: X - Listed '-' - Not Listed **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

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 oxide (Sb2O3)	1309-64-4	-	Use restricted. See item 75. (see link for restriction details)	-
Lead oxide (PbO)	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 details)	SVHC Candidate list - Toxic for reproduction (Article 57 c)
Arsenic oxide (As2O3)	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

Seveso III Directive (2012/18/EC)

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
Antimony oxide (Sb2O3)	1309-64-4	Not applicable	Not applicable
Lead oxide (PbO)	1317-36-8	Not applicable	Not applicable
Arsenic oxide (As2O3)	1327-53-3	Not applicable	0.1 tonne

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Component	ANNEX I - PART 1 List of chemicals subject to export notification procedure (referred to in Article 8)	ANNEX I - PART 2 List of chemicals qualifying for PIC notification (referred to in Article 11)	ANNEX I - PART 3 List of chemicals subject to the PIC procedure (referred to in Articles 13 and 14)
Lead oxide (PbO) 1317-36-8 (<0.1)	sr — severe restriction i(2) — industrial chemical for	-	-

	public		
Arsenic oxide (As2O3) 1327-53-3 (<0.1)	p(2) — other pesticide including biocides sr — severe restriction	-	-

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32012R0649&qid=1604065742303.

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Antimony oxide (Sb2O3)	WGK1	
Lead oxide (PbO)	WGK3	
Arsenic oxide (As2O3)	WGK3	

Component	France - INRS (Tables of occupational diseases)
Antimony oxide (Sb2O3)	Tableaux des maladies professionnelles (TMP) - RG 73
Lead oxide (PbO)	Tableaux des maladies professionnelles (TMP) - RG 1
Arsenic oxide (As2O3)	Tableaux des maladies professionnelles (TMP) - RG 20,RG 20bis

Swiss Regulations
Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).
Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Lead oxide (PbO) 1317-36-8 (<0.1)	Prohibited and Restricted Substances		
Arsenic oxide (As2O3) 1327-53-3 (<0.1)	Prohibited and Restricted Substances		Annex I - pesticide

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3
H351 - Suspected of causing cancer
H300 - Fatal if swallowed
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H350 - May cause cancer
H360Df - May damage the unborn child. Suspected of damaging fertility
H372 - Causes damage to organs through prolonged or repeated exposure

H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
Predicted No Effect Concentration (PNEC)
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - (volatile organic compound)

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.
Chemical incident response training.

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This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 .

For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).

End of Safety Data Sheet