

## 1 Identification

### Product identifier

**Product name:** Cadmium tin oxide

**Stock number:** 39421

**CAS Number:**

12185-56-7

**Index number:**

048-001-00-5

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

**Identified use:** SU24 Scientific research and development

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

#### Manufacturer/Supplier:

Alfa Aesar

Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department

**Emergency telephone number:**

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

**Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)**



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

**Hazards not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

### Hazard pictograms



GHS07

### Signal word

#### Warning

H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

### Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell.

P312 Call a POISON CENTER/doctor/.../if you feel unwell.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

D1B - Toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects



### Classification system

#### HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 3 Health (acute effects) = 3

FIRE 0 Flammability = 0

REACTIVITY 0 Physical Hazard = 0

### Other hazards

#### Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

## 3 Composition/information on ingredients

### Chemical characterization: Substances

#### CAS# Description:

12185-56-7 Cadmium tin oxide

#### Identification number(s):

Index number: 048-001-00-5

## 4 First-aid measures

### Description of first aid measures

#### After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

#### After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

<b>Product name: Cadmium tin oxide</b>	
<div>After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor. After swallowing Seek medical treatment. Information for doctor Most important symptoms and effects, both acute and delayed No further relevant information available. Indication of any immediate medical attention and special treatment needed No further relevant information available.</div>	(Contd. of page 1)
<b>5 Fire-fighting measures</b> <div>Extinguishing media Suitable extinguishing agents Product is not flammable. Use fire-fighting measures that suit the surrounding fire. Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released: Toxic metal oxide fume Carbon monoxide and carbon dioxide Advice for firefighters Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.</div>	
<b>6 Accidental release measures</b> <div>Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation. Prevention of secondary hazards: No special measures required. Reference to other sections See Section 7 for information on safe handling See Section 8 for information on personal protection equipment. See Section 13 for disposal information.</div>	
<b>7 Handling and storage</b> <div>Handling Precautions for safe handling Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Information about protection against explosions and fires: The product is not flammable Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and receptacles: No special requirements. Information about storage in one common storage facility: Not required. Further information about storage conditions: Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Specific end use(s) No further relevant information available.</div>	
<b>8 Exposure controls/personal protection</b> <div>Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. Control parameters Components with limit values that require monitoring at the workplace:  Cadmium and compounds, as Cd mg/m3 ACGIH TLV 0.01; Suspected human carcinogen Austria Carcinogen Belgium TWA 0.05 Denmark TWA 0.01 Finland TWA 0.02; Carcinogen France VME 0.05 Germany Carcinogen Ireland TWA 0.025; Carcinogen Japan OEL 0.05; Group 1 carcinogen Korea TLV 0.01; Suspected human carcinogen Netherlands MAC-TGG 0.02; 0.1-MAC-K Norway TWA 0.05 Poland TWA 0.02; 0.05-STEL (fume) Poland TWA 0.04; 0.2-STEL (dust) Russia 0.01; 0.05-STEL Sweden NGV 0.05 (total dust) Sweden TWA 0.01 (resp. dust) Switzerland MAK-W 0.05; Carcinogen United Kingdom TWA 0.025 USA PEL 0.005  Tin metal, tin oxide and inorganic tin compounds, except tin hydride, as Sn mg/m3 ACGIH TLV 2 Austria MAK 2 Belgium TWA 2 Denmark TWA 2 Finland TWA 2 Germany MAK 2 Hungary TWA 1; 2-STEL (skin) Netherlands MAC-TGG 2 Norway TWA 1 Poland TWA 2 Switzerland MAK-W 2; 4-KZG-W United Kingdom TWA 2; 4-STEL</div>	
	(Contd. on page 3) USA

Product name: **Cadmium tin oxide**

USA PEL 2

(Contd. of page 2)

**Additional information:** No data

**Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**  
The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing immediately.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.

**Breathing equipment:**  
Use suitable respirator when high concentrations are present.  
Refer to 29CFR1910.1027 for regulations on respiratory protection required during exposure to cadmium and cadmium compounds.

**Protection of hands:**  
Impervious gloves  
Check protective gloves prior to each use for their proper condition.  
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form:	Powder
Color:	White
Odor:	Odorless
Odor threshold:	Not determined.

pH-value:	Not applicable.
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Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point:	Not applicable
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.

Danger of explosion:	Product does not present an explosion hazard.
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Explosion limits:

Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not applicable.
Density:	Not determined
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.

Solubility in / Miscibility with

Water:	Not determined
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
Other information	No further relevant information available.

10 Stability and reactivity

**Reactivity** No information known.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** No information known.

**Hazardous decomposition products:**

Carbon monoxide and carbon dioxide

Toxic metal oxide fume

11 Toxicological information

Information on toxicological effects

Acute toxicity:

Harmful if inhaled.  
Harmful in contact with skin.  
Harmful if swallowed.

Danger through skin absorption.

**LD/LC50 values that are relevant for classification:** No data

**Skin irritation or corrosion:** Irritant to skin and mucous membranes.

**Eye irritation or corrosion:** Irritating effect.

**Sensitization:** No sensitizing effects known.

**Germ cell mutagenicity:** No effects known.

Carcinogenicity:

IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

EPA-B1: Probable human carcinogen, limited evidence of carcinogenicity from epidemiologic studies.

Carcinogen as defined by OSHA.

ACGIH A2: Suspected human carcinogen: Agent is carcinogenic in experimental animals at dose levels, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.

**Reproductive toxicity:** No effects known.

(Contd. on page 4)  
USA

Product name: **Cadmium tin oxide**

(Contd. of page 3)

**Specific target organ system toxicity - repeated exposure:** No effects known.  
**Specific target organ system toxicity - single exposure:** No effects known.  
**Aspiration hazard:** No effects known.  
**Subacute to chronic toxicity:**  
Cadmium and cadmium compounds are highly toxic and experimental carcinogens. Exposure affects the respiratory tract, kidneys, and liver. Ingestion may cause nausea, salivation, vomiting and diarrhea. Ingestion or inhalation of cadmium/cadmium compounds may be fatal.  
Metallic tin and inorganic tin compounds may cause nausea, vomiting, diarrhea, irritation and pneumoconiosis.  
**Subacute to chronic toxicity:** No effects known.  
**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.



12 Ecological information

**Toxicity**  
**Aquatic toxicity:** No further relevant information available.  
**Persistence and degradability** No further relevant information available.  
**Bioaccumulative potential** No further relevant information available.  
**Mobility in soil** No further relevant information available.  
**Ecotoxicological effects:**  
**Remark:** Very toxic for aquatic organisms  
**Additional ecological information:**  
**General notes:**  
Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
May cause long lasting harmful effects to aquatic life.  
Avoid transfer into the environment.  
Very toxic for aquatic organisms  
**Results of PBT and vPvB assessment**  
**PBT:** Not applicable.  
**vPvB:** Not applicable.  
**Other adverse effects** No further relevant information available.

13 Disposal considerations

**Waste treatment methods**  
**Recommendation** Consult state, local or national regulations to ensure proper disposal.  
**Uncleaned packagings:**  
**Recommendation:** Disposal must be made according to official regulations.

14 Transport information

UN-Number DOT, IMDG, IATA	UN2570
UN proper shipping name DOT IMDG, IATA	Cadmium compounds (Cadmium tin oxide) CADMIUM COMPOUND (Cadmium tin oxide)
Transport hazard class(es) DOT 	
Class Label Class Label IMDG, IATA 	6.1 Toxic substances. 6.1 6.1 (T5) Toxic substances 6.1
Packing group DOT, IMDG, IATA	III
Environmental hazards:	Environmentally hazardous substance, solid
Special precautions for user	Warning: Toxic substances
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information: DOT Marine Pollutant (DOT): Item:	No
UN "Model Regulation":	UN2570, Cadmium compounds (Cadmium tin oxide), 6.1, III

15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)  
**Hazard pictograms**



GHS07

**Signal word** Warning  
**Hazard statements**  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

(Contd. on page 5)  
USA

Product name: Cadmium tin oxide

**Precautionary statements**  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell.  
P312 Call a POISON CENTER/doctor/.../if you feel unwell.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**  
This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.

**SARA Section 313 (specific toxic chemical listings)**

12185-56-7 Cadmium tin oxide

**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer**

12185-56-7 Cadmium tin oxide

**Prop 65 - Developmental toxicity** Substance is not listed.  
**Prop 65 - Developmental toxicity, female** Substance is not listed.  
**Prop 65 - Developmental toxicity, male** Substance is not listed.  
**Information about limitation of use:**  
For use only by technically qualified individuals.  
This product contains cadmium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.  
**Other regulations, limitations and prohibitive regulations** Refer to 29CFR1910.1027 for regulations concerning cadmium and cadmium compounds.  
**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.  
**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**  
Substance is not listed.  
**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.  
**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Date of preparation / last revision** 11/24/2015 / -

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
vPvB: very Persistent and very Bioaccumulative  
ACGIH: American Conference of Governmental Industrial Hygienists (USA)  
OSHA: Occupational Safety and Health Administration (USA)  
NTP: National Toxicology Program (USA)  
IARC: International Agency for Research on Cancer  
EPA: Environmental Protection Agency (USA)