

## 1 Identification

### Product identifier

**Product name:** Cadmium sulfide

**Stock number:** 13240

**CAS Number:**

1306-23-6

**EC number:**

215-147-8

**Index number:**

048-010-00-4

**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)

 GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 1B H350 May cause cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 1 H372 Causes damage to the lung, the kidneys, the reproductive system and the blood through prolonged or repeated exposure. Route of exposure: Oral.

 GHS07

Acute Tox. 4 H302 Harmful if swallowed.

**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 GHS08

### Signal word

**Danger**

### Hazard statements

H302 Harmful if swallowed.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

H361 Suspected of damaging fertility or the unborn child.

H372 Causes damage to the lung, the kidneys, the reproductive system and the blood through prolonged or repeated exposure. Route of exposure: Oral.

### Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P201 Obtain special instructions before use.

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

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

P405 Store locked up.

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

### WHMIS classification

D2A - Very toxic material causing other toxic effects



### Classification system

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

**(Hazardous Materials Identification System)**

**HEALTH** 2 Health (acute effects) = 2

**FIRE** 0 Flammability = 0

**REACTIVITY** 1 Physical Hazard = 1

### Other hazards

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Product name: Cadmium sulfide**

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### 3 Composition/information on ingredients

**Chemical characterization: Substances**

**CAS# Description:**

1306-23-6 Cadmium sulfide

**Concentration:** ≤100%

**Identification number(s):**

**EC number:** 215-147-8

**Index number:** 048-010-00-4

### 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.

**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**

Harmful if swallowed.

May cause cancer.

Suspected of damaging fertility or the unborn child.

Causes damage to the lung, the kidneys, the reproductive system and the blood through prolonged or repeated exposure. Route of exposure: Oral.

**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

### 5 Fire-fighting measures

**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:

Sulfur oxides (SOx)

Hydrogen sulfide

Cadmium oxide

**Advice for firefighters**

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

### 6 Accidental release measures

**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.

**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.

**Protective Action Criteria for Chemicals**

**PAC-1:** 0.13 mg/m<sup>3</sup>

**PAC-2:** 0.98 mg/m<sup>3</sup>

**PAC-3:** 6 mg/m<sup>3</sup>

### 7 Handling and storage

**Handling**

**Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

**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:**

Do not store together with acids.

Store away from oxidizing agents.

**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.

### 8 Exposure controls/personal protection

**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:**

**1306-23-6 Cadmium sulfide (100.0%)**

PEL (USA) Long-term value: 0.005 mg/m<sup>3</sup>  
as Cd; see 29 CFR 1910.1027

REL (USA) See Pocket Guide App. A

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USA

**Product name: Cadmium sulfide**

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TLV (USA)	Long-term value: 0.01 0.002* mg/m <sup>3</sup> as Cd; *respirable fraction; BEI
EL (Canada)	Long-term value: 0.01 0.002* mg/m <sup>3</sup> as Cd; ACGIH A2, IARC 1; *respirable

**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.

Store protective clothing separately.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use suitable respirator when high concentrations are present.

**Recommended filter device for short term use:**

Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

**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.

**Penetration time of glove material (in minutes)** Not determined

**Eye protection:** Safety glasses with side shields / NIOSH (US) or EN 166(EU)

**Body protection:** Protective work clothing.

**9 Physical and chemical properties**

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**

**Form:** Various forms (powder/flake/crystalline/beads, etc.)

**Odor:** Odorless

**Odor threshold:** Not determined.

**pH-value:** Not applicable.

**Change in condition**

**Melting point/Melting range:** 980 °C (1796 °F) (subl)

**Boiling point/Boiling range:** Not determined

**Sublimation temperature / start:** Not determined

**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.

**Explosion limits:**

**Lower:** Not determined

**Upper:** Not determined

**Vapor pressure at 440 °C (824 °F):** 0.0000013 hPa

**Density at 20 °C (68 °F):** 4.82 g/cm<sup>3</sup> (40.223 lbs/gal)

**Relative density** Not determined.

**Vapor density** Not applicable.

**Evaporation rate** Not applicable.

**Solubility in / Miscibility with**

**Water:** Insoluble

**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** Reacts with strong oxidizing agents

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

**Incompatible materials:**

Acids

Oxidizing agents

**Hazardous decomposition products:**

Sulfur oxides (SOx)

Hydrogen sulfide

Cadmium oxide

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

Harmful if swallowed.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

**LD/LC50 values that are relevant for classification:**

Oral	LD50	1166 mg/kg (mouse)
		7080 mg/kg (rat)

**Skin irritation or corrosion:** May cause irritation

**Eye irritation or corrosion:** May cause irritation

**Sensitization:** No sensitizing effects known.

**Germ cell mutagenicity:**

Suspected of causing genetic defects.

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USA

**Product name: Cadmium sulfide**

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The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

**Carcinogenicity:**

May cause cancer.

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

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.

NTP-K: Known to be carcinogenic: sufficient evidence from human studies.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.

**Reproductive toxicity:** Suspected of damaging fertility or the unborn child.

**Specific target organ system toxicity - repeated exposure:**

Causes damage to the lung, the kidneys, the reproductive system and the blood through prolonged or repeated exposure. Route of exposure: Oral.

**Specific target organ system toxicity - single exposure:** No effects known.

**Aspiration hazard:** No effects known.

**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.

**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.

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.

**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

UN3077

**UN proper shipping name**

DOT

ADR

IMDG

IATA

Environmentally hazardous substances, solid, n.o.s. (Cadmium sulfide)  
3077 Environmentally hazardous substances, solid, n.o.s. (Cadmium sulfide)  
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cadmium sulfide), MARINE POLLUTANT  
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cadmium sulfide)

**Transport hazard class(es)**

DOT, IMDG, IATA



**Class**

**Label**

**ADR**

9 Miscellaneous dangerous substances and articles  
9



**Class**

**Label**

9 (M7) Miscellaneous dangerous substances and articles  
9

**Packing group**

DOT, ADR, IMDG, IATA

III

**Environmental hazards:**

**Marine pollutant (IMDG):**

Yes (DOT)  
Symbol (fish and tree)

**Special marking (ADR):**

**Special marking (IATA):**

Symbol (fish and tree)  
Symbol (fish and tree)

**Special precautions for user**

**EMS Number:**

**Stowage Category**

**Stowage Code**

Warning: Miscellaneous dangerous substances and articles  
F-A,S-F

A

SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.

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USA

**Product name: Cadmium sulfide**

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**Transport/Additional information:**

**DOT**  
**Quantity limitations** On passenger aircraft/rail: No limit  
On cargo aircraft only: No limit  
**Marine Pollutant (DOT):** No  
**Remarks:** Special marking with the symbol (fish and tree).

**IMDG**  
**Limited quantities (LQ)** 5 kg  
**Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 g  
Maximum net quantity per outer packaging: 1000 g

**UN "Model Regulation":** UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (CADMIUM SULFIDE), 9, 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 GHS08

**Signal word** Danger

**Hazard statements**

H302 Harmful if swallowed.  
H341 Suspected of causing genetic defects.  
H350 May cause cancer.  
H361 Suspected of damaging fertility or the unborn child.  
H372 Causes damage to the lung, the kidneys, the reproductive system and the blood through prolonged or repeated exposure. Route of exposure: Oral.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P201 Obtain special instructions before use.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.  
All components of this product are listed on the Canadian Domestic Substances List (DSL).

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

1306-23-6 | Cadmium sulfide

**California Proposition 65**

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

1306-23-6 | Cadmium sulfide

**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:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.  
For use only by technically qualified individuals.

**Other regulations, limitations and prohibitive regulations**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.**

This substance is included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH).

**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 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/Revision:** Print date, revision date and version number are in the header of each page.

**Abbreviations and acronyms:**

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
ICAO: International Civil Aviation Organisation  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
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  
EINECS: European Inventory of Existing Commercial Chemical Substances  
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  
PBT: Persistent, Bioaccumulative and Toxic  
SVHC: Substances of Very High Concern  
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)  
Acute Tox. 4: Acute toxicity - Category 4  
Muta. 2: Germ cell mutagenicity - Category 2  
Carc. 1B: Carcinogenicity - Category 1B  
Repr. 2: Reproductive toxicity - Category 2  
STOT RE 1: Specific target organ toxicity (repeated exposure) - Category 1