

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/23/2014

Reviewed on 11/11/2010

1 Identification**Product identifier****Product name:** Cadmium sulfate**Stock number:** 12340**CAS Number:**

7790-84-3

EC number:

233-331-6

Index number:

048-009-00-9

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, A Johnson Matthey Company

Johnson Matthey Catalog Company, 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 hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification**Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 1 H330 Fatal if inhaled.



GHS08 Health hazard

Muta. 1A H340 May cause genetic defects.

Carc. 1A H350 May cause cancer.

Repr. 1A H360 May damage fertility or the unborn child.

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

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

T+; Very toxic

R26: Very toxic by inhalation.



T; Toxic

R45-46-60-61-25-48/23/25: May cause cancer. May cause heritable genetic damage. May impair fertility. May cause harm to the unborn child. Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.



N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Information concerning particular hazards for human and environment: Not applicable**Hazards not otherwise classified** No information known.**Label elements****Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labeled according to the CLP regulation.

(Contd. on page 2)

USA

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/23/2014

Reviewed on 11/11/2010

Product name: Cadmium sulfate

(Contd. of page 1)

Hazard pictograms

GHS06

GHS08

Signal word Danger**Hazard statements**

H301 Toxic if swallowed.

H330 Fatal if inhaled.

H340 May cause genetic defects.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

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

Precautionary statements

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

P284 [In case of inadequate ventilation] wear respiratory protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P320 Specific treatment is urgent (see on this label).

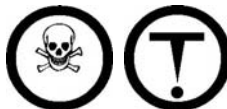
P405 Store locked up.

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

WHMIS classification

D1A - Very 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
FIRE	0
REACTIVITY	1

Health (acute effects) = 3

Flammability = 0

Physical Hazard = 1

Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients**Chemical characterization: Substances****CAS# Description:**

7790-84-3 Cadmium sulfate

Identification number(s):

EC number: 233-331-6

Index number: 048-009-00-9

4 First-aid measures**Description of first aid measures****General information**

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing has been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

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 Do not induce vomiting; immediately call for medical help.

(Contd. on page 3)

USA

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/23/2014

Reviewed on 11/11/2010

Product name: Cadmium sulfate

(Contd. of page 2)

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.

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 (SO_x)

Toxic metal oxide fume

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.

Do not allow product to reach sewage system or any water course.

Do not allow to penetrate the ground/soil.

Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to item 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.

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:** 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:**

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

(Contd. on page 4)

USA

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/23/2014

Reviewed on 11/11/2010

Product name: Cadmium sulfate

(Contd. of page 3)

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

7790-84-3 Cadmium sulfate (100.0%)

PEL (USA)	Long-term value: 0.005 mg/m ³ as Cd; see 29 CFR 1910.1027
REL (USA)	See Pocket Guide App. A
TLV (USA)	Long-term value: 0.01 0.002* mg/m ³ as Cd; *respirable fraction; BEI
EL (Canada)	Long-term value: 0.01 mg/m ³ as Cd; ACIGH A1, IARC 1

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:

Refer to 29CFR1910.1027 for regulations on respiratory protection required during exposure to cadmium and cadmium compounds.

Use self-contained respiratory protective device in emergency situations.

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:	Crystalline
Color:	White
Odor:	Not determined
Odor threshold:	Not determined.

pH-value: Not applicable.**Change in condition**

Melting point/Melting range:	41.5 °C (107 °F)
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.

Explosion limits:	
Lower:	Not determined

(Contd. on page 5)

- USA

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/23/2014

Reviewed on 11/11/2010

Product name: Cadmium sulfate

(Contd. of page 4)

Upper:	Not determined
Vapor pressure:	Not applicable.
Density at 20 °C (68 °F):	3.09 g/cm ³ (25.786 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water at 0 °C (32 °F):	1130 g/l
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

Incompatible materials:
Oxidizing agents
Aluminum/aluminum alloys.
Magnesium

Hazardous decomposition products:
Sulfur dioxide
Toxic metal oxide fume

11 Toxicological information**Information on toxicological effects****Acute toxicity:**

Fatal if swallowed.

Fatal if inhaled.

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

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:**

May cause genetic defects.

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.

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.

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

Reproductive toxicity:

May damage fertility or the unborn child.

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

Specific target organ system toxicity - repeated exposure:

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

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

(Contd. on page 6)

- USA -

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/23/2014

Reviewed on 11/11/2010

Product name: Cadmium sulfate

(Contd. of page 5)

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.

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.

Behavior in environmental systems:

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, ADR, IMDG, IATA

UN2570

UN proper shipping name

DOT

Cadmium compounds (cadmium sulfate)

ADR

2570 Cadmium compounds (cadmium sulfate)

IMDG, IATA

CADMIUM COMPOUND (cadmium sulfate)

Transport hazard class(es)

DOT

**Class**

6.1 Toxic substances.

Label

6.1

ADR**Class**

6.1 (T5) Toxic substances

(Contd. on page 7)

USA

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/23/2014

Reviewed on 11/11/2010

Product name: Cadmium sulfate

(Contd. of page 6)

Label 6.1
IMDG, IATA



Class 6.1 Toxic substances.
Label 6.1

Packing group
DOT, ADR, IMDG, IATA III

Environmental hazards: Environmentally hazardous substance, solid

Special precautions for user Warning: Toxic substances
Danger code (Kemler): 60

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

Transport/Additional information:

DOT
Marine Pollutant (DOT): No

UN "Model Regulation": UN2570, Cadmium compounds (cadmium sulfate), 6.1,
III

15 Regulatory information

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

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)

7790-84-3 Cadmium sulfate

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is listed.

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.

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.

Substances of very high concern (SVHC) according to REACH, Article 57

Substance is not listed.

REACH - Pre-registered substances Substance is 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: Health, Safety and Environmental Department.

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

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

(Contd. on page 8)

USA

Safety Data Sheet
acc. to OSHA HCS

Printing date 01/23/2014

Reviewed on 11/11/2010

Product name: Cadmium sulfate

(Contd. of page 7)

DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
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

USA