

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/28/2011

Reviewed on 09/12/2006

1 Identification of the substance/mixture and of the company/undertaking**Product identifier****Product name:** Cadmium chloride, anhydrous**Stock number:** 35728**CAS Number:**

10108-64-2

EINECS Number:

233-296-7

Index number:

048-008-00-3

Relevant identified uses of the substance or mixture and uses advised against.**Sector of 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 Hazards identification**Classification of the substance or mixture**

GHS06 Skull and crossbones

H301 Toxic if swallowed.

H330 Fatal if inhaled.



GHS08 Health hazard

H340 May cause genetic defects.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.



GHS09 Environment

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

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 if swallowed. 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.

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Label elements**Labelling according to EU guidelines:****Code letter and hazard designation of product:**

T+ Very toxic

N Dangerous for the environment

Risk phrases:

45 May cause cancer.

46 May cause heritable genetic damage.

60 May impair fertility

61 May cause harm to the unborn child

25 Also toxic if swallowed.

26 Also very toxic by inhalation.

48/23/25 Also toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

53 Avoid exposure - obtain special instructions before use.

45 In case of accident or if you feel unwell, seek medical advice immediately.

60 This material and its container must be disposed of as hazardous waste.

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

Hazard description:**WHMIS classification****Classification system****HMIS ratings (scale 0-4)**

(Hazardous Materials Identification System)

HEALTH	3
FIRE	0
REACTIVITY	1

Health (acute effects) = 3

Flammability = 0

Reactivity = 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:**

Cadmium chloride, anhydrous (CAS# 10108-64-2), 100%

Identification number(s):

EINECS Number: 233-296-7

Index number: 048-008-00-3

Additional information: Ampouled under argon

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.

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Seek immediate medical advice.

Information for doctor**Most important symptoms and effects, both acute and delayed**

Gastric or intestinal disorders.

Nausea

5 Firefighting 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

In case of fire, the following can be released:

Hydrogen chloride (HCl)

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.

Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

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**

Handle under dry protective gas.

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.

Store away from water/moisture.

Further information about storage conditions:

This product is hygroscopic.

Store under dry inert gas.

Protect from humidity and water.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

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

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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

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.

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**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
Odour threshold: Not determined.

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

Melting point/Melting range: 568°C (1054 °F)
Boiling point/Boiling range: 960°C (1760 °F)
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
Upper: Not determined

Vapor pressure: Not applicable.**Density at 20°C (68 °F):** 4.047 g/cm³ (33.772 lbs/gal)**Relative density** Not determined.**Vapour density** Not applicable.**Evaporation rate** Not applicable.**Solubility in / Miscibility with****Water at 20°C (68 °F):** 1400 g/l

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Segregation 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****Chemical stability****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions

Reacts with alkali metals.

Reacts violently with interhalogens.

Incompatible materials:

Oxidizing agents

Interhalogens

Water/moisture

Alkali metals

Hazardous decomposition products:

Hydrogen chloride (HCl)

Toxic metal oxide fume

11 Toxicological information**Information on toxicological effects****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	165 mg/kg (chicken)
		63 mg/kg (guinea pig)
		60 mg/kg (mouse)
		88 mg/kg (rat)
	LDLo	3000 mg/kg (wmn)

Primary irritant effect:**on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**Other information (about experimental toxicology):**

Mutagenic effects have been observed on tests with laboratory animals.

Reproductive effects have been observed on tests with laboratory animals.

Tumorigenic effects have been observed on tests with laboratory animals.

Carcinogenic effects have been observed on tests with laboratory animals.

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.

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

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

NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

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 components in this product.

12 Ecological information**Toxicity****Aquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.

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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 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.

Do not allow material to be released to the environment without proper governmental permits.

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****DOT regulations:**

Hazard class: 6.1
Identification number: UN2570
Packing group: III
Hazardous substance: 10 lbs, 4.54 kg
Proper shipping name (technical name): CADMIUM COMPOUND
Label: 6.1

Land transport ADR/RID (cross-border)

ADR/RID class: 6.1 (T5) Toxic substances
Danger code (Kemler): 60
UN-Number: 2570
Packaging group: III
Special marking: Symbol (fish and tree)
UN proper shipping name: 2570 CADMIUM COMPOUND (cadmium chloride)

Maritime transport IMDG:

IMDG Class: 6.1
UN Number: 2570
Label: 6.1
Packaging group: III
Marine pollutant: No

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Proper shipping name: CADMIUM COMPOUND**Air transport ICAO-TI and IATA-DGR:**

ICAO/IATA Class:	6.1
UN/ID Number:	2570
Label	6.1
Packaging group:	III
Proper shipping name:	CADMIUM COMPOUND

UN "Model Regulation": UN2570, CADMIUM COMPOUND, 6.1, III**Environmental hazards:** Environmentally hazardous substance, solid; Marine Pollutant**Special precautions for user Warning:** Toxic substances**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.**15 Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****Product related hazard informations:****Hazard symbols:**

T+ Very toxic

N Dangerous for the environment

Risk phrases:

45 May cause cancer.

46 May cause heritable genetic damage.

60 May impair fertility

61 May cause harm to the unborn child

25 Also toxic if swallowed.

26 Also very toxic by inhalation.

48/23/25 Also toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

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National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

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.

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 MSDS: Health, Safety and Environmental Department.

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Contact:

Zachariah C. Holt
Global EHS Manager

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)

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

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

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