

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name	Cadmium chloride
Stock number:	T2373
CAS Number:	7790-78-5
EC number:	233-296-7
Index number:	048-008-00-3


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

Identified use:	No further relevant information available.
	SU24 Scientific research and development


1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:	Alfa Aesar GmbH & Co.KG A Johnson Matthey Company Zeppelinstr. 7b 76185 Karlsruhe / Germany Tel: +49 (0) 721 84007 280 Fax: +49 (0) 721 84007 300 Email: tech@alfa.com www.alfa.com
Informing department:	Product safety Tel + +049 (0) 7275 988687-0
1.4 Emergency telephone number:	Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number) Poison Information Center Mainz www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240


SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

	GHS06 skull and crossbones
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Acute Tox. 3	H301 Toxic if swallowed.
Acute Tox. 1	H330 Fatal if inhaled.


	GHS08 health hazard
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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 liver, the heart, the blood tissue, the endocrine system and the musculoskeletal system through prolonged or repeated exposure. Route of exposure: Oral.


	GHS09 environment
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Aquatic Acute 1	H400 Very toxic to aquatic life.
Aquatic Chronic 1	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
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R26:	Very toxic by inhalation.
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	T; Toxic
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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.
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	N; Dangerous for the environment
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R50/53:	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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Information concerning particular hazards

for human and environment:	Not applicable
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Other hazards that do not result in classification	No information known.
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**2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008**

Hazard pictograms	
Signal word	
Hazard statements	

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

GHS06, GHS08, GHS09

Danger

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 liver, the heart, the blood tissue, the endocrine system and the musculoskeletal system through prolonged or repeated exposure. Route of exposure: Oral.

H410 Very toxic to aquatic life with long lasting effects.

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

P284 Wear respiratory protection.

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

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.

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

PBT:	Not applicable.
vPvB:	Not applicable.

SECTION 3: Composition/information on ingredients**3.1 Substances**

CAS# Designation:	7790-78-5 Cadmium chloride
Identification number(s):	
EC number:	233-296-7
Index number:	048-008-00-3

SECTION 4: First aid measures**4.1 Description of first aid measures****General information**

Instantly remove any clothing soiled by the product.
Remove breathing apparatus only after soiled clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.

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After inhalation	Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
After skin contact	Seek immediate medical advice. Instantly wash with water and soap and rinse thoroughly.
After eye contact	Seek immediate medical advice.
After swallowing	Rinse opened eye for several minutes under running water. Then consult doctor.
4.2 Most important symptoms and effects, both acute and delayed	Do not induce vomiting; instantly call for medical help.
4.3 Indication of any immediate medical attention and special treatment needed	Gastric or intestinal trouble Sickness No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media	Use fire fighting measures that suit the environment.
Suitable extinguishing agents	
5.2 Special hazards arising from the substance or mixture	If this product is involved in a fire, the following can be released: Hydrogen chloride (HCl) Toxic metal oxide smoke
5.3 Advice for firefighters	
Protective equipment:	Wear self-contained breathing apparatus. Wear full protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation
6.2 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 water bodies. Do not allow to enter the ground/soil.
6.3 Methods and material for containment and cleaning up:	Dispose of contaminated material as waste according to item 13. Ensure adequate ventilation.
Prevention of secondary hazards:	No special measures required.
6.4 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 information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling	Keep containers tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation/exhaustion at the workplace. Open and handle container with care.
Information about protection against explosions and fires:	The product is not flammable
7.2 Conditions for safe storage, including any incompatibilities	
Storage	
Requirements to be met by storerooms and containers:	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. Store in a locked cabinet or with access restricted to technical experts or their assistants.
7.3 Specific end use(s)	No further relevant information available.

SECTION 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.
8.1 Control parameters	
Components with critical values that require monitoring at the workplace:	Cadmium and compounds, as Cd mg/m ³
	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
Additional information:	No data
8.2 Exposure controls	
Personal protective equipment	
General protective and hygienic measures	The usual precautionary measures should be adhered to in handling the chemicals. Keep away from foodstuffs, beverages and food. Instantly remove any soiled and impregnated garments. Wash hands during breaks and at the end of the work.

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Breathing equipment:
Protection of hands:

Store protective clothing separately.
Maintain an ergonomically appropriate working environment.
Use self-contained respiratory protective device in emergency situations.
Check protective gloves prior to each use for their proper condition.
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Material of gloves
Penetration time of glove material
Eye protection:
Body protection:

Impervious gloves
Not determined
Safety glasses
Protective work clothing.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form: Powder
Colour: White
Smell: Odourless
Odour threshold: Not determined.

pH-value: Not applicable.

Change in condition

Melting point/Melting range: 34 °C (transition)
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined

Flash point: Not applicable
Inflammability (solid, gaseous) Not determined.
Ignition temperature: Not determined
Decomposition temperature: Not determined
Self-inflammability: Not determined.

Danger of explosion: Product is not explosive.

Critical values for explosion:

Lower: Not determined
Upper: Not determined
Steam pressure: Not applicable.
Density at 20 °C 3,327 g/cm³
Relative density Not determined.
Vapour density Not applicable.
Evaporation rate Not applicable.

Solubility in / Miscibility with
Water at 20 °C: 1680 g/l
Soluble

Partition coefficient (n-octanol/water): Not determined.

Viscosity:

dynamic: Not applicable.
kinematic: Not applicable.

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity**10.1 Reactivity**

No information known.

10.2 Chemical stability

Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions

Water reacts violently with alkali metals.
Reacts violently with interhalogens.

10.5 Incompatible materials:

Oxidizing agents
Interhalogens

10.6 Hazardous decomposition products:

Alkali metals
Hydrogen chloride (HCl)
Toxic metal oxide smoke

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity:**

Fatal if inhaled.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

LD/LC50 values that are relevant for classification:

No data

Skin irritation or corrosion:

Irritant for skin and mucous membranes.

Eye irritation or corrosion:

Irritant effect.

Sensitization:

No sensitizing effect known.

Germ cell mutagenicity:

May cause genetic defects.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for components in this product.

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.

Reproductive toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this product.
May damage fertility or the unborn child.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for components in this product.

Specific target organ system toxicity - repeated exposure:

Causes damage to the liver, the heart, the blood tissue, the endocrine system and the musculoskeletal system through prolonged or repeated exposure. Route of exposure: Oral.

Specific target organ system toxicity - single exposure:

No effects known.

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Aspiration hazard:	No effects known.	(Contd. of page 3)
Other information (about experimental toxicology):	Mutagenic effects have been observed on tests with laboratory animals. Mutagenic effects have been observed on tests with human lymphocytes. 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.	
Experience with humans:	The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for components in this product.	
Additional toxicological information:	To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.	



SECTION 12: Ecological information

12.1 Toxicity	No further relevant information available.
Aquatic toxicity:	No further relevant information available.
12.2 Persistence and degradability	No further relevant information available.
12.3 Bioaccumulative potential	No further relevant information available.
12.4 Mobility in soil	No further relevant information available.
Ecotoxicological effects:	
Remark:	Very toxic for fish
Additional ecological information:	
General notes:	Do not allow material to be released to the environment without proper governmental permits. Water danger class 3 (Self-assessment): extremely hazardous for water. Do not allow product to reach ground water, water bodies or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into soil. Also poisonous for fish and plankton in water bodies. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment.
12.5 Results of PBT and vPvB assessment	Very toxic for aquatic organisms
PBT:	Not applicable.
vPvB:	Not applicable.
12.6 Other adverse effects	No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods	Hand over to disposers of hazardous waste.
Recommendation	Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal.
Uncleaned packagings:	
Recommendation:	Disposal must be made according to official regulations.
Recommended cleaning agent:	Water, if necessary with cleaning agent.

SECTION 14: Transport information

UN-Number	UN2570
ADR, IMDG, IATA	
14.2 UN proper shipping name	2570 CADMIUM COMPOUND (cadmium chloride)
ADR	CADMIUM COMPOUND
IMDG, IATA	
14.3 Transport hazard class(es)	
ADR	
	
Class	6.1 (T5) Toxic substances.
Label	6.1
IMDG, IATA	
	
Class	6.1 Toxic substances.
Label	6.1
Packing group	III
ADR, IMDG, IATA	
14.5 Environmental hazards:	Environmentally hazardous substance, solid
14.6 Special precautions for user	Warning: Toxic substances.
Kemler Number:	60
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
Excepted quantities (EQ):	E1
Limited quantities (LQ)	5 kg
Transport category	2
Tunnel restriction code	E
UN "Model Regulation":	UN2570, CADMIUM COMPOUND (cadmium chloride), 6.1, III

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
Australian Inventory of Chemical Substances	Substance is listed.
Standard for the Uniform Scheduling of Drugs and Poisons	Substance is not listed.
National regulations	
Information about limitation of use:	Workers should not be exposed to this hazardous material. Exceptions can be made by the authorities in certain exceptional cases. Employment restrictions concerning young persons must be observed. Employment restrictions concerning women of child-bearing age must be observed. For use only by technically qualified individuals.

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Water hazard class:	Water danger class 3 (Self-assessment): extremely hazardous for water.
Other regulations, limitations and prohibitive regulations	
ELINCS (European List of Notified Chemical Substances)	Substance is not listed.
Substances of very high concern (SVHC) according to REACH, Article 57	Substance is not listed.
REACH - Pre-registered substances	Substance is not listed.
15.2 Chemical safety assessment:	A Chemical Safety Assessment has not been carried out.

SECTION 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 data specification sheet: Health, Safety and Environmental Department.

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
 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)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent

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