

**SAFETY DATA SHEET**

Version 4.3  
Revision Date 06/27/2014  
Print Date 08/07/2014

**1. PRODUCT AND COMPANY IDENTIFICATION**

**1.1 Product identifiers**

Product name : **Cadmium chloride hydrate**

Product Number : 208299  
Brand : Aldrich  
Index-No. : 048-008-00-3

CAS-No. : 654054-66-7

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

Identified uses : Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : (314) 776-6555

**2. HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 1), H330  
Germ cell mutagenicity (Category 1B), H340  
Carcinogenicity (Category 1B), H350  
Reproductive toxicity (Category 1B), H360  
Specific target organ toxicity - repeated exposure (Category 1), H372  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word : Danger

Hazard statement(s)

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 organs through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statement(s)**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P281 Use personal protective equipment as required.  
P284 Wear respiratory protection.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P310 Immediately call a POISON CENTER or doctor/ physician.  
P320 Specific treatment is urgent (see supplemental first aid instructions on this label).  
P330 Rinse mouth.  
P391 Collect spillage.  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P501 Dispose of contents/ container to an approved waste disposal plant.

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none**

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

Formula : CdCl<sub>2</sub> · xH<sub>2</sub>O  
Molecular Weight : 183.32 g/mol  
CAS-No. : 654054-66-7  
EC-No. : 233-296-7  
Index-No. : 048-008-00-3

**Hazardous components**

Component	Classification	Concentration
<b>Cadmium chloride hydrate</b> Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
	Acute Tox. 3; Acute Tox. 1; Muta. 1B; Carc. 1B; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H301, H330, H340, H350, H360, H372, H410	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

**4. FIRST AID MEASURES**

**4.1 Description of first aid measures**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

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**Safety**

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

no data available

**5. FIREFIGHTING MEASURES****5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture**

Hydrogen chloride gas, Cadmium/cadmium oxides

**5.3 Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information**

no data available

**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

**7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters****Components with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
Cadmium chloride hydrate	654054-66-7	TWA	0.0020 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Suspected human carcinogen		

		TWA	0,01 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
				Kidney damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen varies
		TWA	0,002 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
				Kidney damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen varies
				Potential Occupational Carcinogen See Appendix A
				Potential Occupational Carcinogen See Appendix A
		PEL	0,005 mg/m <sup>3</sup>	OSHA Specifically Regulated Chemicals/Carcinogens
				1910.1027 This standard applies to all occupational exposures to cadmium and cadmium compounds, in all forms, and in all industries covered by the Occupational Safety and Health Act, except the construction-related industries, which are covered under 29 CFR 1926.63. OSHA specifically regulated carcinogen

**Biological occupational exposure limits**

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Cadmium chloride hydrate	654054-66-7	cadmium	5 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
	Remarks	Not critical			
		cadmium	0.005 mg/g	Urine	ACGIH - Biological Exposure Indices (BEI)
		Not critical			

**8.2 Exposure controls****Appropriate engineering controls**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Personal protective equipment****Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body Protection**

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the

sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |   |                                       |
|---|---------------------------------------|
| a) Appearance                                   | Form: solid<br>Colour: white          |
| b) Odour  | no data available                     |
| c) Odour Threshold                              | no data available                     |
| d) pH   | no data available                     |
| e) Melting point/freezing point                 | no data available                     |
| f) Initial boiling point and boiling range      | no data available                     |
| g) Flash point                                  | no data available                     |
| h) Evaporation rate                             | no data available                     |
| i) Flammability (solid, gas)                    | no data available                     |
| j) Upper/lower flammability or explosive limits | no data available                     |
| k) Vapour pressure                              | 13 hPa (10 mmHg) at 656 °C (1,213 °F) |
| l) Vapour density                               | no data available                     |
| m) Relative density                             | 3.327 g/mL at 25 °C (77 °F)           |
| n) Water solubility                             | no data available                     |
| o) Partition coefficient: n-octanol/water       | no data available                     |
| p) Auto-ignition temperature                    | no data available                     |
| q) Decomposition temperature                    | no data available                     |
| r) Viscosity                                    | no data available                     |
| s) Explosive properties                         | no data available                     |
| t) Oxidizing properties                         | no data available                     |

### 9.2 Other safety information

no data available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

Avoid moisture. Air

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### 10.5 Incompatible materials

Oxidizing agents

### 10.6 Hazardous decomposition products

Other decomposition products - no data available  
In the event of fire: see section 5

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

no data available

Inhalation: no data available

Dermal: no data available

no data available

#### Skin corrosion/irritation

no data available

#### Serious eye damage/eye irritation

no data available

#### Respiratory or skin sensitisation

no data available

#### Germ cell mutagenicity

May alter genetic material.

In vivo tests showed mutagenic effects

#### Carcinogenicity

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Chronic exposure to cadmium may cause lung and prostate cancer.

Possible human carcinogen

IARC: 1 - Group 1: Carcinogenic to humans (Cadmium chloride hydrate)

1 - Group 1: Carcinogenic to humans (Cadmium chloride hydrate)

NTP: Known to be human carcinogen (Cadmium chloride hydrate)

Known to be human carcinogen The reference note has been added by TD based on the background information of the NTP. (Cadmium chloride hydrate)

OSHA: 1910.1027 (Cadmium chloride hydrate)

OSHA specifically regulated carcinogen (Cadmium chloride hydrate)

#### Reproductive toxicity

May cause congenital malformation in the fetus.

Presumed human reproductive toxicant

May cause reproductive disorders.

#### Specific target organ toxicity - single exposure

no data available

#### Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

#### Aspiration hazard

no data available

#### Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence  
Stomach - Irregularities - Based on Human Evidence

## 12. ECOLOGICAL INFORMATION

- 12.1 Toxicity**  
no data available
- 12.2 Persistence and degradability**  
no data available
- 12.3 Bioaccumulative potential**  
no data available
- 12.4 Mobility in soil**  
no data available
- 12.5 Results of PBT and vPvB assessment**  
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
- 12.6 Other adverse effects**  
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 2570 Class: 6.1 Packing group: III  
Proper shipping name: Cadmium compounds (Cadmium chloride hydrate)  
Reportable Quantity (RQ): 10 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

### IMDG

UN number: 2570 Class: 6.1 Packing group: III EMS-No: F-A, S-A  
Proper shipping name: CADMIUM COMPOUND (Cadmium chloride hydrate)  
Marine pollutant: No

### IATA

UN number: 2570 Class: 6.1 Packing group: III  
Proper shipping name: Cadmium compound (Cadmium chloride hydrate)

## 15. REGULATORY INFORMATION

### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Cadmium chloride hydrate	654054-66-7	1993-04-24

### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

## Massachusetts Right To Know Components

	CAS-No.	Revision Date
Cadmium chloride hydrate	654054-66-7	1993-04-24

## Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Cadmium chloride hydrate	654054-66-7	1993-04-24

## New Jersey Right To Know Components

	CAS-No.	Revision Date
Cadmium chloride hydrate	654054-66-7	1993-04-24

## California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Cadmium chloride hydrate	654054-66-7	1987-10-01

	CAS-No.	Revision Date
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Cadmium chloride hydrate	654054-66-7	1987-10-01

## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
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 organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

### HMIS Rating

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard:	0

### NFPA Rating

Health hazard:	3
Fire Hazard:	0
Reactivity Hazard:	0

### Further information

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**Preparation Information**  
Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

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