

**SIGMA-ALDRICH**

**Material Safety Data Sheet**

Version 3.0  
Revision Date 12/01/2009  
Print Date 07/02/2010

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : **Cadmium chloride**

Product Number : 202908  
Brand : Aldrich

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

Telephone : +18003255832  
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Emergency Phone # : (314) 776-6555

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : CdCl<sub>2</sub>  
Molecular Weight : 183.32 g/mol

| CAS-No.                 | EC-No.    | Index-No.    | Concentration |
|-------------------------|-----------|--------------|---------------|
| <b>Cadmium chloride</b> |           |              |               |
| 10108-64-2              | 233-296-7 | 048-008-00-3 | -             |

**3. HAZARDS IDENTIFICATION**

**Emergency Overview**

**OSHA Hazards**

Carcinogen, Target Organ Effect, Highly toxic by inhalation, Toxic by ingestion, Teratogen

**Target Organs**

Bone, Kidney, Lungs, Liver, Pancreas., Male reproductive system.

**HMIS Classification**

Health hazard: 4  
Chronic Health Hazard: \*  
Flammability: 0  
Physical hazards: 0

**NFPA Rating**

Health hazard: 4  
Fire: 0  
Reactivity Hazard: 0

**Potential Health Effects**

**Inhalation** May be fatal if inhaled. May cause respiratory tract irritation.

**Skin** May be harmful if absorbed through skin. May cause skin irritation. May be fatal if absorbed through skin.  
**Eyes** May cause eye irritation.  
**Ingestion** Toxic if swallowed.

**4. 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. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

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

**5. FIRE-FIGHTING MEASURES**

**Flammable properties**

Flash point not applicable

Ignition temperature no data available

**Suitable extinguishing media**

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

**Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**

Wear respiratory protection. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

**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.

**Methods for cleaning up**

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

**7. HANDLING AND STORAGE**

**Handling**

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

**Storage**

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

hygroscopic Air sensitive. Store under inert gas.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Components with workplace control parameters**

0001-0001

| Components       | CAS-No.  | Value | Control parameters      | Update     | Basis                                   |
|------------------|--|-------|-------------------------|------------|---|
| Cadmium chloride | 10108-64-2   | TWA   | 0.002 mg/m <sup>3</sup> | 1994-09-01 | USA, ACGIH Threshold Limit Values (TLV) |
| Remarks          | <p>Suspected human carcinogen: Human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as a confirmed human carcinogen; OR, the agent is carcinogenic in experimental animals at dose(s), by route(s) of exposure, at site(s), of histologic type(s), or by mechanism(s) considered relevant to worker exposure. The A2 is used primarily when there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals with relevance to humans.</p> <p>Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.</p> <p>Substances for which there is a Biological Exposure Index or indices (see BEI® section) Substances for which the TLV is higher than the OSHA Permissible Exposure Limit (PEL) and/or the NIOSH Recommended Exposure Limit (REL). See CFR 58(124) :36338-33351, June 30, 1993, for revised OSHA PEL.</p> <p>Substance identified by other sources as a suspected or confirmed human carcinogen. Refers to Appendix A -- Carcinogens.</p> |       |                         |            |   |

#### Personal protective equipment

##### 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).

##### Hand protection

Handle with gloves.

##### Eye protection

Face shield and safety glasses

##### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

##### Hygiene measures

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

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

##### Appearance

Form solid  
Colour white

##### Safety data

pH no data available  
Melting point 568 °C (1,054 °F)  
Boiling point 960 °C (1,760 °F) at 1,013 hPa (760 mmHg)  
Flash point not applicable  
Ignition temperature no data available  
Lower explosion limit no data available  
Upper explosion limit no data available

Vapour pressure 13 hPa (10 mmHg) at 656 °C (1,213 °F)  
Density 4.050 g/cm<sup>3</sup>  
Water solubility no data available

#### 10. STABILITY AND REACTIVITY

##### Storage stability

Stable under recommended storage conditions.

##### Conditions to avoid

Air Avoid moisture.

##### Materials to avoid

Oxidizing agents, Bromine trifluoride

##### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Cadmium/cadmium oxides

#### 11. TOXICOLOGICAL INFORMATION

##### Acute toxicity

LD50 Oral - rat - 88 mg/kg

Remarks: Gastrointestinal.Changes in structure or function of salivary glands. Diarrhoea Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

##### Irritation and corrosion

no data available

##### Sensitisation

no data available

##### Chronic exposure

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.

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

NTP: Known to be human carcinogen (Cadmium chloride)

OSHA: 1910.1027 (Cadmium chloride)

May alter genetic material.

May cause congenital malformation in the fetus.

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

##### Signs and Symptoms of Exposure

Acute inhalation exposure to cadmium fumes may cause "metal fume fever" with flu-like symptoms of weakness, fever, headache, chills, nausea, vomiting, dizziness, sweating, muscular pain, cough and difficulty breathing. Acute pulmonary edema may develop within 24 hours and reaches a maximum by three days. The first chronic effect of exposure to cadmium is generally kidney damage, manifested by excretion of excessive protein in the urine, followed by anemia, teeth discoloration and loss of smell. Cadmium also is believed to cause pulmonary emphysema and bone disease.

**Potential Health Effects**

**Inhalation** May be fatal if inhaled. May cause respiratory tract irritation.  
**Skin** May be harmful if absorbed through skin. May cause skin irritation. May be fatal if absorbed through skin.  
**Eyes** May cause eye irritation.  
**Ingestion** Toxic if swallowed.  
**Target Organs** Bone, Kidney, Lungs, Liver, Pancreas., Male reproductive system.,

**12. ECOLOGICAL INFORMATION****Elimination Information (persistence and degradability)**

**Bioaccumulation** Oncorhynchus mykiss (rainbow trout) - 180 d  
 Bioconcentration factor (BCF): 38

**Ecotoxicity effects**

**Toxicity to fish** LC50 - Oncorhynchus mykiss (rainbow trout) - 0.003 mg/l - 96 h  
**Toxicity to daphnia and other aquatic invertebrates.** EC50 - Daphnia magna (Water flea) - 0.016 mg/l - 48 h  
 mortality NOEC - Daphnia magna (Water flea) - 0.039 mg/l - 48 h

**Further information on ecology**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**13. DISPOSAL CONSIDERATIONS****Product**

Observe all federal, state, and local environmental regulations. 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  
 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  
 Marine pollutant: No

**IATA**

UN-Number: 2570 Class: 6.1 Packing group: III  
 Proper shipping name: Cadmium compound

**15. REGULATORY INFORMATION****OSHA Hazards**

Carcinogen, Target Organ Effect, Highly toxic by inhalation, Toxic by ingestion, Teratogen

**DSL Status**

All components of this product are on the Canadian DSL list.

**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**

|                  | CAS-No.    | Revision Date |
|------------------|------------|---------------|
| Cadmium chloride | 10108-64-2 | 1993-04-24    |

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

|                  | CAS-No.    | Revision Date |
|------------------|------------|---------------|
| Cadmium chloride | 10108-64-2 | 1993-04-24    |

**Pennsylvania Right To Know Components**

|                  | CAS-No.    | Revision Date |
|------------------|------------|---------------|
| Cadmium chloride | 10108-64-2 | 1993-04-24    |

**New Jersey Right To Know Components**

|                  | CAS-No.    | Revision Date |
|------------------|------------|---------------|
| Cadmium chloride | 10108-64-2 | 1993-04-24    |

**California Prop. 65 Components**

|   | CAS-No.    | Revision Date |
|---|------------|---------------|
| WARNING! This product contains a chemical known in the State of California to cause cancer.<br>Cadmium chloride | 10108-64-2 | 1987-10-01    |

**California Prop. 65 Components**

|   | CAS-No.    | Revision Date |
|---|------------|---------------|
| WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.<br>Cadmium chloride | 10108-64-2 | 1987-10-01    |

**16. OTHER INFORMATION****Further information**

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