

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Cadmium Chloride, Enriched Cadmium
Chemical Formula	CdCl ₂
Molecular Weight	183.31 amu
CAS No.	10108-64-2
RTECS No.	EV0175000
Synonyms	Caddy, Cadmium dichloride, Dichlorocadmium, VI-Cad
Supplier Address*	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	Infotrac/ +1 800-535-5053 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Highly Toxic (USA) Very Toxic (EU).

Dangerous for the environment.

May cause cancer. May cause heritable genetic damage.

May impair fertility. May cause harm to the unborn child. Also toxic if swallowed. Also very toxic by inhalation.

Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Danger: Contains cadmium. Cancer hazard. Avoid creating dust. Can cause lung and kidney disease. California Prop. 65 carcinogen and reproductive hazard.

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 4 Flammability = 0 Reactivity = 1



HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 4* Flammability = 0 Reactivity = 1

HEALTH HAZARD	4
FLAMMABILITY	0
PHYSICAL HAZARD	1
PERSONAL PROTECTION	

**additional chronic hazards present*

Potential Health Effects

<i>Inhalation</i>	May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract. May be fatal if inhaled. May cause respiratory tract irritation.
<i>Ingestion</i>	Toxic if swallowed
<i>Skin Contact</i>	May cause skin irritation
<i>Skin Absorption</i>	May be harmful if absorbed through the skin
<i>Eye Contact</i>	May cause eye irritation
<i>Target Organ(s) or System(s)</i>	Bones, kidneys, liver, lungs, pancreas, male reproductive system
<i>Signs and Symptoms of Exposure</i>	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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name:	Cadmium Chloride
CAS No.:	10108-64-2
Molecular Weight:	183.31 amu
Chemical Formula:	CdCl ₂

4. FIRST AID MEASURES

<i>Eye Contact</i>	In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.
<i>Skin Contact</i>	In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.
<i>Oral Exposure</i>	If swallowed, wash out mouth with water, provided person is conscious. Call a physician immediately.
<i>Inhalation</i>	If inhaled, remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

5. FIREFIGHTING MEASURES

<i>Flammability</i>	Not considered a fire hazard
<i>Explosion Hazard</i>	Not considered an explosion hazard
<i>Suitable Extinguishing Media</i>	Water spray, carbon dioxide, dry chemical powder, or appropriate foam
<i>Protective Equipment</i>	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
<i>Specific Hazards</i>	Emits toxic fumes under fire conditions
Flash Point:	N/A
Autoignition Temp:	N/A
Flammability:	N/A

6. ACCIDENTAL RELEASE MEASURES

<i>Personal precaution</i>	Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.
<i>Methods for Containment</i>	Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.
<i>Procedure to be Followed in Case of Leak or Spill</i>	Evacuate area.

7. HANDLING AND STORAGE

<i>Handling</i>	Do not breathe dust. Do not get in eyes, on skin or on clothing. Avoid prolonged or repeated exposure.
<i>Storage</i>	Keep container tightly closed. Handle and store under nitrogen.
<i>Special Requirements</i>	Air- and moisture-sensitive. Handle under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<i>Engineering Controls</i>	Safety shower and eye bath. Use only in a chemical fume hood.
Personal Protective Equipment	
<i>Respiratory Protection</i>	Government-approved respirator
<i>Skin Protection</i>	Compatible chemical-resistant gloves
<i>Eye Protection</i>	Chemical safety goggles
<i>General Hygiene Measures</i>	Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA Remarks: inhalable dust	ACGIH	TWA	0.01 mg (Cd)/m ³
USA Remarks: respirable dust	ACGIH	TWA	0.002 mg (Cd)/m ³
USA	MSHA Standard-air	TWA	0.2 mg (Cd)/m ³
USA	NIOSH		Lowest feasible concentration

RTECS NUMBER: EV0175000**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Solid	Solubility: N/A
pH: N/A	BP/BP Range: N/A
MP/MP Range: 568 °C	Freezing Point: N/A
Vapor Pressure: 10 mmHg 656 °C	Vapor Density: 6.3 g/l
Saturated Vapor Concentration: N/A	SG/Density: 4.05 g/cm ³
Bulk Density: N/A	Odor Threshold: N/A
Volatile%: N/A	VOC Content: N/A
Water Content: N/A	Solvent Content: N/A
Evaporation Rate: N/A	Viscosity: N/A
Surface Tension: N/A	Partition Coefficient: N/A
Decomposition Temperature: N/A	Flash Point: N/A
Explosion Limits: N/A	Flammability: N/A
Autoignition Temperature: N/A	Refractive Index: N/A
Optical Rotation: N/A	Miscellaneous Data: N/A

10. STABILITY AND REACTIVITY

<i>Stability</i>	Stable
<i>Hazardous Decomposition Products</i>	Nature of decomposition products not known
<i>Hazardous Polymerization</i>	Will not occur
<i>Materials to Avoid</i>	Oxidizing agents, bromine trifluoride

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Oral LD50

LD50 Oral - Rat - 88 mg/kg

Remarks

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

Inhalation LC50

No data available

<i>Dermal LD50</i>	No data available
<i>Other Information on Acute Toxicity</i>	No data available
<i>Skin Corrosion/Irritation</i>	No data available
<i>Serious Eye Damage/Eye Irritation</i>	No data available
<i>Respiratory or Skin Sensitization</i>	No data available
<i>Germ Cell Mutagenicity Effects</i>	May alter genetic material. In vivo tests showed mutagenic effects.
<i>Carcinogenicity</i>	This is, or contains a component that has been reported to be, carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classifications. Chronic exposure to cadmium may cause lung or prostate cancer. Possible human carcinogen.
<i>IARC</i>	1 - Group 1: Carcinogenic to humans (Cadmium chloride) 1 - Group 1: Carcinogenic to humans (Cadmium chloride)
<i>NTP</i>	Known to be human carcinogen (Cadmium chloride) The reference note has been added by TD based on the background information of the NTP. (Cadmium chloride)
<i>OSHA</i>	1910.1027 (Cadmium chloride)
<i>Reproductive Toxicity</i>	Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.
<i>Teratogenicity</i>	May cause congenital malformation in the fetus. Presumed human reproductive toxicant.
<i>Specific Target Organ Toxicity/ Single Exposure (Globally Harmonized System)</i>	No data available
<i>Specific target organ toxicity/ Repeated Exposure (Globally Harmonized System)</i>	Causes damage to organs through prolonged or repeated exposure
<i>Aspiration Hazard</i>	No data available

12. ECOLOGICAL INFORMATION

Toxicity

<i>Toxicity to Fish LC50</i>	<i>Oncorhynchus mykiss</i> (rainbow trout) - 0.003 mg/l - 96.0 h
<i>Toxicity to Daphnia and Other Aquatic Invertebrates</i>	Immobilization EC50 - <i>Daphnia magna</i> (water flea) - 0.016 mg/l - 48 h Immobilization NOEC - <i>Daphnia magna</i> (water flea) - 0.039 mg/l - 48 h
<i>Persistence and Degradability</i>	According to the results of tests of biodegradability, this product is not readily biodegradable.
<i>Bioaccumulative Potential</i>	Bioaccumulation <i>Oncorhynchus mykiss</i> (rainbow trout) - 180 d
<i>Bioconcentration Factor (BCF)</i>	38
<i>Mobility in Soil</i>	No data available
<i>PBT and vPvB Assessment</i>	No data available
<i>Other Adverse Effects</i>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS*Appropriate Method of Disposal*

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. Observe all federal, state and local environmental regulations.

14. TRANSPORT INFORMATION**DOT**

Proper Shipping Name	Cadmium compounds
UN#	2570
Class	6.1
Packing Group	Packing Group III
Hazard Label	Keep away from food
PIH	Not PIH

IATA

Proper Shipping Name	Cadmium compound
IATA UN Number	2570
Hazard Class	6.1
Packing Group	III

15. REGULATORY INFORMATION

OSHA Hazards Carcinogen, Target Organ Effect, Highly Toxic by Inhalation, Toxic by Ingestion, Teratogen, Mutagen

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

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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

Pennsylvania Right To Know Components

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

New Jersey Right To Know Components

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

California Prop. 65 Components

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

16. OTHER INFORMATION

Prepared By	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
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Revision Number	4
Revision Note	Update Supplier Address

ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)

NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

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