

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Cadmium, Enriched Cadmium
CAS No.	7440-43-9
Chemical Formula	Cd
Molecular Weight	112.4 amu
Supplier Address*	ISOFLEX USA PO Box 29475 San Francisco CA 94129 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. HAZARDOUS IDENTIFICATION

Emergency Overview:

California Prop. 65 Carcinogen.

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

Health Hazard = 0 Flammability = 0 Reactivity = 0



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

Health Hazard = 0 Flammability = 0 Physical Hazard = 0

HEALTH HAZARD	0
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

Potential Health Effects

<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>Inhalation</i>	May be harmful if inhaled; material may be irritating to mucous membranes and upper respiratory tract
<i>Ingestion</i>	May be harmful if swallowed
<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, tooth discoloration, and loss of smell. Cadmium also is believed to cause pulmonary emphysema and bone disease.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name:	Cadmium
CAS No.:	7440-43-9
Molecular Weight:	112.4 amu
Chemical Formula:	Cd

4. FIRST AID MEASURES

<i>Oral Exposure</i>	If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
<i>Inhalation Exposure</i>	If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
<i>Dermal Exposure</i>	In case of contact, immediately wash skin with soap and copious amounts of water.
<i>Eye Exposure</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.

5. FIRE-FIGHTING MEASURES

<i>Flash Point</i>	N/A
<i>Autoignition Temperature</i>	N/A
<i>Flammability</i>	N/A
<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 Hazard(s)</i>	Emits toxic fumes under fire conditions

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Exercise appropriate precautions to minimize direct contact with skin or eyes and to prevent inhalation of dust.

Cleanup Methods

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.

7. HANDLING AND STORAGE

Handling

User exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage

Keep tightly closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Safety shower and eye bath; mechanical exhaust required

Personal Protective Equipment:

Respiratory

Dust mask

Hand

Protective gloves

Eye

Chemical safety goggles

General Hygiene Measures

Wash thoroughly after handling

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form

Powder

Color

Light grey

Safety Data

Molecular Weight:	112.4 amu	pH:	N/A
Solubility:	N/A	BP/BP Range:	765 °C
MP/MP Range:	320.9 °C	Freezing Point:	N/A
Vapor Pressure:	N/A	Vapor Density:	N/A
Saturated Vapor Concentration:	N/A	SG/Density:	8.65 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		

N/A = not available

10. STABILITY AND REACTIVITY

Stability

Stable

Materials to Avoid

Oxidizing agents, acids

Hazardous Decomposition Products

Cadmium/cadmium oxides

Hazardous Polymerization

Will not occur

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Oral LD50 LD50 Oral - Rat - 225 mg/kg

Inhalation LC50 LC50 Inhalation - rat - 30 h - 25 mg/m³
Remarks: Lungs, Thorax, or Respiration: Dyspnea

Dermal LD50 No data available

Skin Corrosion/Irritation No data available

Serious Eye Damage/Irritation No data available

Respiratory or Skin Sensitization No data available

Germ Cell Mutagenicity In vitro tests showed mutagenic effects

Carcinogenicity Possible human carcinogen
IARC: 1 - Group 1: Carcinogenic to humans (Cadmium)
NTP: Known to be human carcinogen (Cadmium)
OSHA: 1910.1027 (Cadmium)

Reproductive Toxicity Suspected human reproductive toxicant

Teratogenicity No data available

Specific Target Organ Toxicity – Single Exposure (Globally System) No data available

Specific Target Organ Toxicity – Repeated Exposure (Globally Harmonized System) Causes damage to organs through prolonged or repeated exposure

Aspiration Hazard No data available

Potential Health Effects

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

Ingestion Toxic if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure

Damage to the lungs. Kidney injury may occur; prolonged or repeated exposure can cause vomiting, diarrhea, lung irritation

Synergistic Effects No data available

Additional Information RTECS: EU9800000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish

Mortality LOEC - *Oncorhynchus mykiss* (rainbow trout) - 0.0015 mg/l - 96 h

LC50 - *Pimephales promelas* (fathead minnow) - 1.0 µg/l - 96 h

*Toxicity to daphnia
and other aquatic
invertebrates*

Mortality NOEC - *Daphnia* - 0.019 mg/l - 24 h

Mortality LOEC - *Daphnia* - 0.039 mg/l - 24 h

EC50 - *Daphnia magna* (Water flea) - 0.024 mg/l - 48 h

Toxicity to algae

Growth inhibition IC50 - *Chaetoceros sp.* - 0.028 mg/l - 48 h

Persistence and Degradability

No data available

Bioaccumulative Potential

Bioaccumulation

Oncorhynchus mykiss (rainbow trout) - 72 d

Bioconcentration factor (BCF): 55

Mobility in Soil

No data available

PBT and vPvB Assessment

No data available

Other Adverse Effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life, with long-lasting effects.

13. DISPOSAL CONSIDERATIONS

*Appropriate Method of Disposal
of Substance or Preparation*

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

UN 2570

Hazard Class

6.1

Packing Group

Packing Group I

Hazard Label

Toxic substances.

PIH

Not PIH

IATA

Proper Shipping Name

Cadmium compound

IATA UN Number

UN 2570

Hazard Class

6.1

Packing Group

I

15. REGULATORY INFORMATION

OSHA Hazards

Carcinogen, Target Organ Effect, Highly toxic by inhalation, Toxic by ingestion, Reproductive hazard, 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 CAS No. 7440-43-9 Revision Date 1993-04-24

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components

Cadmium CAS No. 7440-43-9 Revision Date 1993-04-24

Pennsylvania Right to Know Components

Cadmium CAS No. 7440-43-9 Revision Date 1993-04-24

New Jersey Right to Know Components

Cadmium CAS No. 7440-43-9 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 CAS No. 7440-43-9 Revision Date 2009-02-01

California Prop. 65 Components

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Cadmium CAS No. 7440-43-9 Revision Date 2009-02-01

16. REGULATORY INFORMATION

Prepared By ISOFLEX USA
 PO Box 29475
 San Francisco CA 94129
 United States

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Revision Number 2

Revision Note Required review and update

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	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

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

General Disclaimer

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