

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Cadmium Metal Foil, Enriched Cadmium Foil
Chemical Formula	Cd
Molecular Weight	112.41 g/mol
CAS No.	7440-43-9
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. HAZARDS IDENTIFICATION

Very Toxic (T+) and Dangerous to the Environment (N)

May cause cancer, and very toxic by inhalation (**R45 & R26**)

Toxic: Danger of serious damage to health by prolonged exposure through inhalation and if swallowed (**R48/23/25**)

Possible risk of impaired fertility (**R62**)

Possible risk of irreversible effects (**R68**)

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment (**R50/53**)

Possible risk of harm to unborn child (**R63**)

California Prop. 65 carcinogen

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

Health Hazard = 4 Flammability = 0 Reactivity = 0



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

Health Hazard = 4 Flammability = 0 Physical Hazard = 0

HEALTH HAZARD	4
FLAMMABILITY	0
PHYSICAL HAZARD	0

For additional information on toxicity, please refer to Section 10.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Product Name	Cadmium Foil, Enriched Cadmium Foil
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4. FIRST AID MEASURES

<i>General Information</i>	Immediately remove any clothing soiled by the product. Remove breathing apparatus only after contaminated clothing has been completely removed. In case of irregular breathing or respiratory arrest, provide artificial respiration.
<i>Oral Exposure</i>	Seek immediate medical advice.
<i>Inhalation Exposure</i>	If inhaled, remove to fresh air. Seek medical attention.
<i>Dermal Exposure</i>	Immediately wash skin with soap and copious amounts of water. Generally, the product does not irritate the skin.
<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. FIREFIGHTING MEASURES

<i>Flash Point</i>	Not available
<i>Autoignition Temperature</i>	Not determined
<i>Flammability</i>	Not available
<i>Suitable Extinguishing Media</i>	Special powder for metal fires. Do not use water.

Firefighting

<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 metal oxide fumes under fire conditions

6. ACCIDENTAL RELEASE MEASURES

<i>Personal Precaution(s)</i>	Exercise appropriate precautions to minimize direct contact with skin or eyes and to prevent inhalation of dust.
<i>Environmental Precautions</i>	Do not allow material to be released to the environment without proper governmental permits.
<i>Methods for Cleaning Up</i>	Sweep up, place in a bag, and dispose of according to Section 11.

7. HANDLING AND STORAGE

<i>Handling</i>	Keep container tightly sealed. Ensure good ventilation in workplace. Open and handle container with care to minimize contact with skin, mouth and eyes.
<i>Storage</i>	Store in a cool, dry place in tightly closed containers.
<i>Storage to Protect against Explosion</i>	No special measures required

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls Safety shower and eye bath

Personal Protective Equipment:

<i>General Protective Measures</i>	The usual precautionary measures for handling chemicals should be followed.
<i>Breathing Equipment</i>	Not required
<i>Hand</i>	Protective gloves
<i>Eye</i>	Safety goggles

Components with Limit Values That Require Monitoring at the Workplace (mg/m³):

USA PEL:	0.005
United Kingdom TWA:	0.025
Japan OEL:	0.05 (Group 1 Carcinogen)
ACGIH TLV:	0.01 (Suspected Carcinogen)
France VME:	0.05
Germany:	Carcinogen
Korea TLV:	0.01 Suspected human carcinogen)

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Solid ingot		
Molecular Weight:	112.41 amu		
pH:	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	Miscellaneous Data:	N/A
Solubility:	N/A		

N/A = not available

10. STABILITY AND REACTIVITY

<i>Stability</i>	Stable under normal conditions; decomposition will not occur if used and stored according to specifications
<i>Materials to Avoid</i>	Acids, oxidizing agents, potassium
<i>Hazardous Decomposition Products</i>	Cadmium/cadmium oxides
<i>Hazardous Polymerization</i>	Has not been reported

11. TOXICOLOGICAL INFORMATION

LD/LC50 values that are relevant for classification:

Oral	LD50	890 mg/kg (Mouse) 2330 mg/kg (Rat)
	LDLo	70 mg/kg (Rabbit)
Inhalative	LC50/30M	25 mg/m ³ (Rat)
	LCLo/20M	39 mg/m ³ (Human)
<i>Skin Contact</i>		May cause skin irritation
<i>Eye Contact</i>		May cause eye irritation
<i>Inhalation</i>		N/A (Ingot cannot be inhaled)
<i>Ingestion</i>		May be harmful if swallowed. Can cause nausea, salivation, vomiting and diarrhea. Ingestion of cadmium may be fatal.
<i>Signs and Symptoms of Exposure</i>		Acute inhalation exposure to cadmium fumes or ingestion of metal 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.
<i>Other Information</i>		Tumorigenic effects have been observed on tests with laboratory animals. Reproductive effects have been observed on tests with laboratory animals. Mutagenic effects have been observed on tests with laboratory animals. To the best of our knowledge, the acute and chronic toxicity of this substance is not fully known.

12. ECOLOGICAL INFORMATION

<i>Remark</i>	Very toxic to fish
<i>General Notes</i>	Do not allow product to reach ground water, water course or sewer system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Do not allow material to be released to the environment without proper governmental permits.

13. DISPOSAL CONSIDERATIONS

<i>Product</i>	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.
<i>Contaminated Packaging</i>	Dispose of as unused product.

14. TRANSPORT INFORMATION

Not a hazardous material for transportation.

DOT Regulations	<i>Hazard Class: None</i>
Land Transport ADR/RID (Cross Border)	<i>ADR/RID Class: None</i>
Maritime Transport IMDG	<i>IMDG Class: None</i>
Air Transport ICAO-TI and IATA DGR	<i>ICAO/IATA Class: None</i>

15. REGULATORY INFORMATION

SARA 302 Components	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 Shot / CAS No. 7440-43-9 / Revision Date 2007-07-01
SARA 311/312	Acute Health Hazard, Chronic Health Hazard
Massachusetts Right to Know Components	Cadmium Shot / CAS No. 7440-43-9 / Revision Date 2007-07-01
Pennsylvania Right to Know Components	Cadmium Shot / CAS No. 7440-43-9 / Revision Date 2007-07-01
New Jersey Right to Know Components	Cadmium Shot / CAS No. 7440-43-9 / Revision Date 2007-07-01
California Prop. 65 Components	Warning! This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

16. OTHER INFORMATION

Prepared By	ISOFLEX USA PO Box 29475 San Francisco CA 94129 United States
Issuing Date	September 15, 2014
Revision Date	August 01, 2021
Revision Number	4
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
HMS	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

For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between ISOFLEX USA (or any of its affiliates and subsidiaries) and the purchaser.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. ISOFLEX shall not be held liable for any damage resulting from handling or from contact with the above product.

The logo for ISO FLEX features the word "ISO" in a light blue, sans-serif font, followed by "FLEX" in a larger, bold, red, italicized sans-serif font. A large, light blue, curved swoosh or underline element arches over the text from the left side.