

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 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

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 |
| Chemical Formula | Cd |
| Molecular Weight | 112.41 g/mol |
| CAS No. | 7440-43-9 |

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:

General Protective Measures The usual precautionary measures for handling chemicals should be followed.

Breathing Equipment Not required

Hand Protective gloves

Eye 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) |

Skin Contact May cause skin irritation

Eye Contact May cause eye irritation

Inhalation N/A (Ingot cannot be inhaled)

Ingestion May be harmful if swallowed. Can cause nausea, salivation, vomiting and diarrhea. Ingestion of cadmium may be fatal.

Signs and Symptoms of Exposure 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.

Other Information 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

Remark Very toxic to fish

General Notes 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*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**

| | |
|----------------------|--|
| Proper Shipping Name | Toxic solid, inorganic, n.o.s. (Cadmium) |
| UN | UN 3288 |
| Hazard Class | 6.1 |
| Packing Group | II |

IATA

| | |
|----------------------|--|
| Proper Shipping Name | Toxic solid, inorganic, n.o.s. (Cadmium) |
| IATA UN Number | UN 3288 |
| Hazard Class | 6.1 |
| Packing Group | II |

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 472615
San Francisco CA 94147
United States

Issuing Date
Revision Date
Revision Number
Revision Note

September 15, 2014
April 22, 2024
5
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 | 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.

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The logo for ISO FLEX features the word "ISO FLEX" in a bold, red, sans-serif font. A large, light blue, curved swoosh or arc is positioned behind the text, starting from the left and curving upwards and then downwards to the right, partially overlapping the letters.