

15117 Washington Highway
P. O. Box 1055 Ashland VA 23005

Phone: (804) 227-3381
Fax: (804) 227-3404

CHEMTREC: (800) 424-9300
Poision Center: (800) 562-8236

Safety Data Sheet

Section 1: Product and Company Information

Product Name: Cadmium

Company: Fine Metals Corporation
15117 Washington Hwy
Ashland, VA 23005

For more information call: 1-804-227-3381

(Monday - Friday 9-4:30)

In case of emergency: Transportation (Chemtrec) 1-800-424-9300

Poison Center: 1-800-562-8236

(24 hours/day, 7 days/week)

Section 2: HAZARD IDENTIFICATION



Emergency Overview

Emergency Overview: Carcinogenicity, Category 1B; Acute toxicity (inhalation), Category 2; Target organ toxicity (repeated exposure), Category 1; Mutagenicity, Category 2; Reproductive Toxicity, Category 2; Acute Toxicity (oral), Category 3; Acute Hazards to the Aquatic Environment, Category 1; Chronic Hazard to the Environment, Category 1

Hazard Statements: Fatal if inhaled (H330); Toxic if swallowed (H301); May cause cancer (H350); Suspected of causing genetic defects (H341); Suspected of damaging fertility or the unborn child (H361); Causes damage to organs through prolonged or repeat exposure (H372); Very toxic to aquatic life with long lasting effects (H410)

Precautionary Statements:

Prevention: Do not breathe dust/fume/gas/mist/vapours/spray. (P260); Wear respiratory protection (P284); Do not handle until all safety precautions have been read and understood. (P202); Avoid release to the environment. (P273)

Response: If inhaled: Remove to fresh air and keep at rest in a position comfortable for breathing. (P304+P340); If exposed or concerned: Get medical advice/attention. (P308+P313); Collect spillage. (P391)

Appearance/Form:

Form: Solid

Color: Bluish-white metal

Odor: None

Hazard Summary: Carcinogen. Toxic if swallowed. Negligible fire or explosion hazard in bulk form. Powdered material may form explosive dust-air mixtures.

Acute Health Effects

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

Eyes: May cause eye irritation.

Ingestion: May be toxic if swallowed. Acute poisoning following ingestion causes GI disturbances, salivation, shock, liver and kidney damage. Ingestion may produce fluid loss, acute renal failure, and cardiopulmonary depression. May cause death but the irritant and emetic action is so violent that little of the cadmium is absorbed and fatal poisoning does not normally occur.

Inhalation: May be fatal if inhaled. May be harmful if inhaled. May cause respiratory tract irritation. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count.

Chronic Exposure: If inhaled damage may be delayed. May cause nausea, vomiting, abdominal pain, diarrhea, chest tightness, weakness, and delayed pulmonary edema. Irritating for skin and eyes. Probable teratogen. Repeated inhalation may cause chronic bronchitis. Chronic inhalation may cause nasal septum ulceration and perforation. Cadmium and compounds may cause lung, liver and kidney damage and lung and prostate cancer in humans. May cause loss of smell, emphysema, anemia, bone demineralization and lung fibrosis. The primary target organ for chronic cadmium disease is clearly the kidney. Suspected of causing genetic defects.

Safety Data Sheet

Aggravated Medical Conditions: Respiratory and kidney disease.

Carcinogenicity: Probable human carcinogen. May cause respiratory tract cancer. May increase the risk of liver, prostate, respiratory and kidney cancers.

Section 3: Composition/Information on Ingredients

Chemical Name	CAS-No.	Reach #	EC #	Concentration
Cadmium	7440-43-9	Not available	231-152-8	>/ = 99 wt%

Section 4: FIRST AID MEASURES

Eye Contact: Immediately flush eyes, including under eyelids, with large amounts of water for at least 15 minutes, occasionally lifting upper and lower lids. Call a physician.

Skin Contact: Remove contaminated clothing. Wash contaminated skin with soap and water.

Inhalation: Move to fresh air at once, artificial respiration if needed, one should obtain medical attention even if no symptoms are seen. Medical observation is recommended for 24 to 48 hours after breathing overexposure, as pulmonary edema may be delayed.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical help immediately.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing Media: Use dry chemical extinguishing agents, dry sand or dry ground dolomite, dry sodium chloride-based extinguishers.

Unsuitable extinguishing media: Do not use water, foam, CO₂ or Halons.

Specific hazards during firefighting: Flammable solid in dust or powder form. Toxic fumes may be formed during fire. Dust can be an explosion hazard when exposed to heat or flame. May burn rapidly with flare burning effect. May re-ignite after fire is extinguished. Dangerous fire hazard in the form of dust when exposed to heat or flame.

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Ensure adequate ventilation for cleanup. Avoid dust formation. Avoid breathing dust, vapours, mist or gas. Cleanup personnel should wear appropriate protective equipment.

Environmental Precautions: This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.

Methods for Cleaning Up: Restrict persons not wearing protective equipment from area of spill until cleanup is complete. Remove all ignition sources. Wearing full protective equipment, cover spill with dry sand or vermiculite. Mix well and carefully transfer to a container. Avoid generating dusty conditions. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Place under an inert atmosphere. It may be necessary to contain and dispose of Cadmium as a hazardous waste. Contact your state Environmental Program for specific recommendations. Avoid release to the environment.

Section 7: HANDLING AND STORAGE

Handling: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Use spark-proof tools and explosion proof equipment. Avoid contact with skin and eyes. Do not breathe dust, vapor, mist or gas. Keep away from heat and flame.

Storage: Store away from incompatible material. Sources of ignition such as smoking and open flames are prohibited where Cadmium is used, handled, or stored in a manner that could create a potential fire or explosion hazard. Keep container tightly closed. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Controls: Use process enclosures, local exhaust ventilation or other means to maintain employee exposure as far below limits as possible

Component Exposure Limits

Safety Data Sheet

Component	Location	Value
Cadmium	US ACGIH TLV TWA	0.002
	US OSHA OEL TWA	0.005
	Canada - BC, ON TWA	0.002
	Canada- PQ TWA	0.025
	Austria TWA	0.15
	Austria STEL	0.6
	Denmark TWA	0.005
	Denmark STEL	0.01
	France TWA	0.05
	Hungary, Switzerland TWA	0.015
	Poland, Spain TWA	0.01
	Sweden TWA	0.02
	Japan TWA	0.05
	Singapore TWA	0.01
	UK WEL TWA	0.025

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Respiratory Protection: If ventilation is inadequate and this material is handled at elevated temperatures or dusts/fumes/mists are generated a NIOSH/MSHA approved air purifying respirator may be permissible under circumstances where airborne concentrations are expected to exceed exposure limits.

Eye/Face: Wear safety glasses or goggles as appropriate to the task performed.

Skin Protection: Wear protective gloves, lab coat, chemical resistant overalls or other protective clothing. Wash contaminated clothing before reuse.

Work Hygienic Practices: Practice good chemical hygiene during and after use.

Comments: None

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Odor: None

Color: Grey

Melting Point: 320° C

Boiling Point: 765° C / 1409° F

Vapor Pressure: 1 mm Hg at 394° C

Vapor Density (air = 1): Not available

Evaporation Rate: Not available

Solubility In Water: Insoluble

Specific Gravity (water = 1): 8.65

Atomic Weight: 112.411

% Volatility By Volume: Not available

Density: 8.65 g/cc

Section 10: STABILITY AND REACTIVITY

Stability: Oxidizes when exposed to air. Easily tarnishes in moist air. Powder or liquid is pyrophoric. Contact with acid liberates gas.

Safety Data Sheet

Incompatible Materials: Strong acids, strong bases, oxidizing materials.
Hazardous Decomposition Products: Toxic cadmium oxide fumes.
Possibility of Hazardous Reactions: Not available

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Acute toxicity is almost always caused by inhalation of cadmium fumes or dust which are produced when cadmium is heated. There is general a latent period of a few hours after exposure before symptoms develop. During the ensuing period, symptoms may appear progressively. Acute inhalation exposure to high levels of cadmium in humans may result in effects on the lung, such as bronchial and pulmonary irritation. A single acute exposure to high levels of cadmium can result in long-lasting impairment of lung function. Cadmium is considered to have high acute toxicity, based on short-term animal tests in rats.

Chronic Toxicity: Long-term exposure to high levels can result in accumulation in body tissues. Under these conditions, cadmium can remain in the body for years. Most of the metal accumulates in the bones, liver and kidneys, where it can damage the functioning of those organs. Can result in joint and bone damage. Other effects noted in occupational settings from chronic exposure of humans to cadmium in air are effects on the lung, including bronchiolitis and emphysema.

Reproductive Toxicity: Suspected of damaging fertility or the unborn child.

Mutagenicity: Suspected of causing genetic defects.

Carcinogenicity: Known to be a human carcinogen (Group I)

Other: None

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Cadmium has been shown to be a developmental toxicant in animals resulting in fetal malformations and other effects. Earthworms and other essential soil organisms are extremely susceptible to cadmium poisoning. They can die at very low concentrations and this has consequences for the soil structure.

Persistence/Degradability: Cadmium does not break down in the environment, but can change form. Cadmium binds strongly to soil particles.

Bioaccumulation/Accumulation: Fish, plants, and animals take up cadmium from the environment. In aquatic ecosystems cadmium can bioaccumulate in mussels, oysters, shrimps, lobsters and fish. The susceptibility to cadmium can vary greatly between aquatic organisms. When cadmium is present in soil the uptake through plants will increase. This is a potential danger to the animals that are dependent upon the plants for survival. Cadmium can accumulate in their bodies. Cows may have large amounts of cadmium in their kidneys due to this. 20 day bioconcentration factor (BCF)=88.9(Cyprinus carpio)

Mobility in Environment: Cadmium particles in air can travel long distances before falling to the ground or water. Some forms of cadmium dissolve in water.

Section 13: DISPOSAL CONSIDERATIONS

Waste Classification: Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Recycling is disposal method of choice.

All disposal activities must comply with federal, state, provincial and local regulations.

Section 14: TRANSPORT INFORMATION

US DOT (ground): Toxic solid, inorganic, n.o.s.; Hazard class: 6.1; UN number: 3288; Packing group: II Reportable quantity under CERCLA: 10 lbs.

ICAO/IATA (air): Toxic solid, inorganic, n.o.s.; UN number: 3288; Hazard class: 6.1; Packing group: II

IMO/IMDG (water): Toxic solid, inorganic, n.o.s. UN number: 3288; Hazard class: 6.1; Packing group: II; EmS: F-A, S-A

Special Provisions: None

Section 15: REGULATORY INFORMATION

UNITED STATES

SARA Title III (Superfund Amendments and Reauthorization Act) 313 Reportable Ingredients: Yes

TSCA (Toxic Substance Control Act) status: All components of this product are included in inventory, exempt, or notified.

STATE REGULATIONS

The following components appear in one or more of the following states hazardous substances list

Component	CAS #	CA	MA	MN	NJ	PA	RI
Cadmium	7440-43-9	Yes	Yes	Yes	Yes	Yes	Yes

Safety Data Sheet

California Proposition 65: This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm and may be subject to the requirements of California proposition 65 (CA Health and Safety Code section 25249.5): Cadmium

CANADA

WHMIS (Workplace Hazardous Materials Information System): All components of this product are included in inventory, exempt, or notified.

Domestic Substance List (Inventory): All components of this product are included in inventory, exempt, or notified.

GENERAL COMMENTS

None

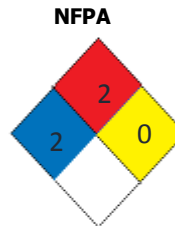
Section 16: OTHER INFORMATION

Information Contact: sds@finemetalscorp.com

Issue Date: 7/3/1999

Revision Date: 1/1/2015

HMIS®(II)	
Health:	2
Flammability:	2
Reactivity:	0
PPE:	E



Ratings range from 0 (no hazard) to 4 (severe hazard)

The information contained in this SDS is believed to be correct, but is not all inclusive and shall be used only as a guide. Fine Metals Corporation shall not be liable for any damage resulting from handling or from contact with the product listed in the SDS. Any comments or questions should be directed to:

Safety Manager
Fine Metals Corporation
15117 Washington Highway
P O Box 1055
Ashland VA 23005
(804) 227-3381