



Chemtrec: (800) 424-9300
Poison Center: (800) 562-8236
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SAFETY DATA SHEET

Identity: Cadmium

Formula: Cd

SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 112.41

CAS #	OSHA PEL	ACGIH TLV	%
7440-43-9	5ug/m3	0.05mg/m3	100.0%

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 765.00°C

Vapor Pressure (vs. air or mmHg): 1mm at 394.0°C

Melting Point: 321.1°C

Specific gravity: 8.65gm/cc

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble/ soluble in dilute nitric & sulfuric acid

Appearance and odor: Grayish-white pieces, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Unknown

Explosive Limits: LEL: N/A UEL: N/A

Extinguishing Media: Use suitable extinguishing media for surrounding materials and type of fire.

Special Fire Fighting Procedures: Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire and Explosion Hazards:

-When heated to high temperatures cadmium may emit toxic fumes of cadmium.



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- Dust-air mixtures may be explosive. Finely divided metal may be flammable pyrophoric in air.
- Explosion hazard in the form of dust when exposed to ammonium nitrate and hydrozoic acid.
- Contact with acids may form flammable hydrogen gas.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability): None

Incompatibility: Strong oxidizers; elemental sulfurs; ammonia, zinc, selenium, tellurium metals; acids; ammonium nitrate; hydrozoic acid and nitryl fluoride

Hazardous Decomposition or Byproducts: Airborne cadmium fumes, cadmium oxide, and hydrogen gas

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Route of entry: Inhalation? Yes Ingestion? Yes Eyes? Yes Skin? Yes Other? No

Cadmium compounds are confirmed carcinogens producing lung tremors. Poison by ingestion. Inhalation of fumes or dusts affects the respiratory tract and the kidneys. Brief exposure to high concentration may result in pulmonary edema and death. Fatal concentrations may be breathed without sufficient discomfort to warn a worker to leave the exposure. Cadmium oxide fumes can cause metal fume fever. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Signs and Symptoms of Overexposure:

Inhalation: Throat dryness, cough, headache, vomiting, chest pain, extreme restlessness and irritability, pneumonitis, possibly bronchiopneumonia.

Ingestion: Increased salivation, choking, vomiting, abdominal pain, anemia, renal dysfunction, diarrhea, and tenesmus.

Skin: Redness, itching and burning.

Eye: Redness, itching, burning and watering.

Health Hazards (Acute and Chronic):

Inhalation:

Acute: Highly toxic (symptoms may be delayed for several hours). May cause irritation to upper respiratory tract, vertigo, constriction of the throat, metallic taste in the mouth and cough, dyspnea, cyanosis, chest pain, flu-like symptoms (weakness, nausea, vomiting, headache, fever, chills, shivering, profuse sweating, muscular pain in the back and limbs) and pulmonary edema. More exposure may cause pulmonary fibrosis/hypertrophy of bronchial vessels and renal necrosis and/or liver damage.

Chronic: May cause irreversible lung injury, pulmonary fibrosis, damage to olfactory nerve. All routes of entry may cause kidney damage, osteomalacia, osteoporosis, spontaneous fractures, hemolytic and iron deficiency anemia, weight loss, irritability, renal tubular necrosis, cardiovascular effects, liver damage, prostate and respiratory cancers. Is determined to be mutagenic, experimental teratogen, neoplastic, tumorigenic and carcinogen.



Ingestion:

Acute: May cause irritation of mouth and throat, increased salivation, burning sensation, cramps in stomach, nausea, headache and vomiting, weakness, dizziness, diarrhea, shock, convulsions, coma and death.

Chronic: May cause irreversible renal tubular dysfunction, functional changes in the liver, pancreas and adrenal glands

Skin:

Acute: Direct contact may result in irritation.

Chronic: Repeated or prolonged exposure may result in dermatitis.

Eye:

Acute: Direct contact may cause irritation, redness, and pain.

Chronic: Repeated or prolonged exposure may cause conjunctivitis.

Target Organs: May affect the respiratory system, kidneys, prostate and blood.

Carcinogenicity: NTP? Yes IARC Monographs? Yes OSHA Regulated? Yes

Medical Conditions Aggravated by Exposure: Kidney or respiratory dysfunction, blood or bone disorders

Emergency and First Aid Procedures:

Inhalation: Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

Ingestion: Give 1-2 glasses of milk or water and seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person

Skin: Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist

Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

Waste disposal method:

Dispose of in accordance with state, local, and federal regulations.

Hazard Label Information:

DANGER: CONTAINS CADMIUM. Use chemical splash goggles and avoid creating dust

Precautions to be taken in handling:

Store in tightly sealed container in a cool, dry area away from heat and sources of ignition. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES



Protective Equipment Summary (Hazard Label Information):

NIOSH approved respirator, impervious rubber gloves, safety glasses, clothes to prevent contact.

Ventilation:

Local Exhaust: To maintain concentration at low exposure levels.

Special: Enclose process if possible

Mechanical (General): Not recommended

Other: Engineering and work practices

Work/Hygienic/Maintenance Practices:

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Handle in a controlled, inert atmosphere. Minimize exposure of cadmium by local exhaust and enclosing process if/when possible. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established
