

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	CADMIUM, METAL
Chemical Synonyms	Cadmium Metal, Mossy, Sticks
Formula	Cd
Unit(s) Size	30 grams to 2.5 Kg.
C.A.S. No.	7440-43-9

CHEMTREC
800-424-9300
Day 716-226-6177
Night 716-334-4222

NFPA HAZARD RATING
LEAST SLIGHT MODERATE HIGH EXTREME
0 1 2 3 4

HMIS*
Health 3
Fire 0
Reactivity 0

SECTION II HAZARDOUS INGREDIENTS OF MIXTURES

Principal Hazardous Component(s)	%	TLV Units
Cadmium Metal	>99.8%	See Section V.

WARNING! POISONOUS FUMES MAY BE FORMED ON HEATING.

HAZARDOUS DUST - USE ONLY WITH ADEQUATE EXHAUST VENTILATION.

MAY BE HARMFUL IF SWALLOWED. SUSPECTED CARCINOGEN.*

SECTION III PHYSICAL DATA

Melting Point (°F)	320.9°C (610°F)	Specific Gravity (H ₂ O = 1)	8.642 @ 20°C
Boiling Point (°F)	767°C (1412°F)	Percent Volatile by Volume (%)	0% @ 20°C
Vapor Pressure (mm Hg)	1 mm @ 394°C	Evaporation Rate (=1)	Non-volatile (NA).
Vapor Density (Air=1)	Data not listed.		
Solubility in Water	Insoluble.		
Appearance & Odor	Silvery-white, bluish, lustrous metal - powder, mossy, rods, sticks; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Greater than 767°C (1412°F)	Flammable Limits in Air % by Volume	NA	Lower	Upper
Extinguisher Media	Carbon dioxide (CO ₂) or dry chemical type (ABC); sand can be used.				

SPECIAL FIREFIGHTING PROCEDURES

Cadmium dust will burn with evolution of cadmium oxide fumes. Fire-fighters must wear self-contained breathing apparatus and full protective clothing.

(1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4, GUIDE PAGE NO. 31)

UNUSUAL FIRE AND EXPLOSION HAZARDS

At temperatures above 610°F Cadmium or Cadmium oxide fumes may be evolved. Dangerous; when heated, Cadmium emits highly toxic fumes; it can react vigorously with oxidizing materials.

* RTECS: EU9800000 CARCINOGENIC REVIEW: Animal Positive.
Cancer hazard based on tests with laboratory animals.

D.O.T. **NON-REGULATED.**

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20

SECTION V HEALTH HAZARD DATA

Threshold Limited Value ACGIH-TLV 8-hour TWA (1984-85) (dust) 0.05 mg/m³; Fume 0.05 mg/m³
OSHA PEL 8-hour TWA (dust) 0.2 mg/m³; 0.1 mg/m³. ACGIH STEL 1984-85 0.2 mg/m³.

Effects of Overexposure A single exposure to excessive levels of cadmium fumes or dust can cause severe lung irritation, chest pain and edema which may be fatal. Lower exposure levels may cause dryness of throat, cough, headache, shortness of breath and vomiting. **SKIN:** Possible skin irritation. Possible skin coloration. **EYES:** Mechanical irritation.

Emergency and First Aid Procedures **INHALATION:** When concentrated fume has been inhaled, remove to fresh air, give oxygen and contact a physician. **EYES:** (Abnormal circumstance). Flush thoroughly with water. Call physician if irritation develops. **SKIN:** Flush thoroughly with water, then wash with mild soap and water. **INGESTION:** If swallowed, if conscious, give one or two glasses of water, induce vomiting and call a physician. Never give anything by mouth to an unconscious person.

SECTION VI REACTIVITY DATA

Stability	Unstable	Conditions to Avoid	Excessive temperature above 610°F that may produce fumes.
	Stable	X	

Incompatibility (Materials to Avoid) Cadmium dust can react vigorously with oxidizing agents. Tarnishes in moist air. Contact with Hydrazoic acid may cause explosion. Avoid storage or use near acids or alkaline hydroxides.

Hazardous Decomposition Products Heat treatment, welding or soldering of cadmium metal will produce toxic cadmium oxide fumes.

Hazardous Polymerization	Conditions to Avoid	Not applicable.
May Occur	Will Not Occur	X

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled Recover for use if not contaminated. Any normal clean up procedure is applicable, however, if there is any possibility of cadmium dust exposure, approved respiratory equipment should be worn.

Waste Disposal Method Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only. Dispose of in an approved chemical landfill or contract with an approved and licensed disposal agency.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type) If dusty or fume condition prevail, work in ventilation hood or wear a NIOSH-approved dust mask or respirator for fumes.

Ventilation	Local Exhaust	Recommended.	Special	Required where there is risk of exposure
	Mechanical (General)	Recommended.	Other	No.

Protective Gloves Rubber, leather. **Eye Protection** Chemical safety glasses.

Other Protective Equipment Goggles, lab coat, ventilation, proper gloves, eye wash station.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing Store in a cool, dry place away from corrosive materials where corrosion of cadmium metal may occur. Most operation in which cadmium oxide fume dust is produced will require process enclosure ventilation designed for the operation. Wash thoroughly after handling.

Other Precautions Read label on container before using. Do not wear contact lenses when working with chemicals. Personal respiratory protective equipment may be used for temporary or supplemental control. Local exhaust required for melting, grinding, and soldering operation. Remove and wash contaminated clothing. Use care in handling. Abrasive to skin.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Rev. No.	No. 2	Date	1/20/92	Approved	Alexander A. Piccirilli	Chemical Safety Coordinator	AP
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