SUPPLIER

MATERION

MATERIAL SAFETY DATA SHEET

GENERATED 03/15/2011, **REVISION** 05/05/1993, **DATE CREATED** 02/15/1993

SECTION I - PRODUCT IDENTIFICATION
Cadmium metal, powder

PRODUCT NAME:	Cadmium metal, powder
PRODUCT CODE:	C-MSDS0001
REFERENCE #:	7440-43-9
MANUFACTURER INFORMATION	
COMPANY NAME:	Materion Advanced Chemicals Inc. 1316 W. St. Paul Avenue Milwaukee, WI 53233
EMERGENCY CONTACT:	CHEMTREC (800)424-9300
ALTERNATE EMERGENCY CONTACT:	Materion Advanced Chemicals Inc. (414)289-9800
CHEMICAL FAMILY:	Metal
CAS NUMBER:	7440-43-9
RTECS #:	EU9800000
FORMULA:	Cd
MOLECULAR WEIGHT:	112.40
SYNONYMS	

Cadmium metal - particle size less than 100 microns.

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SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION
Cadmium metal, powder

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TLV	Other Limits

Cadmium	7440-43-9	100.0 %	5 ug/m3	0.05 mg/m3	CL 0.6 mg/m3

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS
Cadmium metal, powder

PHYSICAL STATES: [ ] Gas [ ] Liquid [X] Solid
MELTING POINT: 320.90 C
BOILING POINT: 765.00 C
SPECIFIC GRAVITY (WATER = 1): 8.642gm/cc
VAPOR PRESSURE (VS. AIR OR MM HG): 1 mm at 394.0 C
VAPOR DENSITY (VS. AIR = 1): NA
EVAPORATION RATE (VS BUTYL ACETATE=1): NA
SOLUBILITY IN WATER: Insoluble
SOLUBILITY NOTES
Soluble in dilute nitric & sulfuric acid
PERCENT VOLATILE: N.A.
APPEARANCE AND ODOR

Grayish-white powder, no odor
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SECTION IV - FIRE AND EXPLOSION HAZARD DATA
Cadmium metal, powder

FLASH PT: N.A. Method Used: Unknown
EXPLOSIVE LIMITS: LEL: NA UEL: NA
EXTINGUISHING MEDIA

AUTOIGNITION TEMPERATURE: 250 C (layer), 570 C (cloud)
USE: Class D extinguishing agent such as dry chemical, dolomite, sodium chloride, sand, or graphite.
DO NOT USE: Water, carbon dioxide, foam or halons.
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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.
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UNUSUAL FIRE AND EXPLOSION HAZARDS

When heated to high temperatures cadmium may emit toxic fumes of cadmium.
FLAMMABLE SOLID. Dust-air mixtures may be explosive. Finely divided metal may be pyrophoric in air.
Flammable and explosive when exposed to heat, flame or by chemical reaction with oxidizing agents, metals, ammonia, zinc, selenium, tellurium.
Explosion hazard in the form of dust when exposed to ammonium nitrate and hydrozoic acid.
Contact with acids may form flammable hydrogen gas.
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HAZARDOUS COMBUSTION PRODUCTS

SECTION V - REACTIVITY DATA
Cadmium metal, powder

STABILITY: Unstable [ ] Stable [X]

CONDITIONS TO AVOID - INSTABILITY

None
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INCOMPATIBILITY - MATERIALS TO AVOID

Strong oxidizers; elemental sulfurs; ammonia, zinc, selenium, tellurium metals; acids; ammonium nitrate; hydrozoic acid and nitryl fluoride.
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HAZARDOUS DECOMPOSITION OR BYPRODUCTS

Airborne cadmium fumes, cadmium oxide and hydrogen gas.
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HAZARDOUS POLYMERIZATION: Will occur [ ] Will not occur [X]

CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION

None
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SECTION VI - HEALTH HAZARD DATA
Cadmium metal, powder

HEALTH HAZARDS (ACUTE AND CHRONIC)

Cadmium compounds are confirmed carcinogens producing lung tumors. Poison by ingestion. Inhalation of fumes or dusts affects the respiratory tract and the kidneys. Brief exposure to high concentrations 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)

INHALATION:
Acute: Highly toxic (symptoms may be delayed for several hours). May cause irritation of the upper respiratory tract, rhinitis, 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 severe exposure may cause proliferative interstitial pneumonitis, pulmonary fibrosis/hypertrophy of bronchial vessels and renal necrosis and/or liver damage.
Chronic: May cause irreversible lung injury, pulmonary fibrosis, damage to the olfactory nerve. All routes of entry may cause kidney damage, osteomalacia, osteoporosis, and spontaneous fractures, hemolytic and iron-deficiency anemia, weight loss, and irritibility, renal tubular necrosis, cardiovascular effects, liver damage and prostatic and respiratory cancers. Is determined to be mutagenic, experimental teratogen, neoplastic, tumorigen and carcinogen.

INGESTION:
Acute: May cause irritation of mouth and throat, increased salivation, burning sensation and 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, pain and smarting.
Chronic: Repeated or prolonged exposure may cause conjuctivitis.

TARGET ORGANS: May affect the respiratory system, kidneys, prostate and blood.
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CARCINOGENICITY: NTP? Yes IARC Monographs? Yes OSHA Regulated? Yes

RECOMMENDED EXPOSURE LIMITS

See "Section II"

LD 50 / LC 50

See "Other Toxicity Data"

SIGNS AND SYMPTOMS OF EXPOSURE

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, tenesmus.

SKIN: Redness, itching and burning.

EYE: Redness, itching, burning and watering.

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MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Kidney or respiratory disfunction, blood or bone disorders.

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EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim to fresh air; if conscious, encourage victim to blow nose, cough up, then spit out mucous and saliva; keep warm and quite; give oxygen if breathing is difficult and seek medical attention immediately.

INGESTION: Seek medical attention immediately.

SKIN: Remove contaminated clothing from affected area; brush material off skin. Wash affected area with mild soap and water. Seek medical attention immediately.

EYE: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention.

---------- CADMIUM OTHER TOXICITY DATA ----------

orl-rat TDLO: 155 mg/kg (male 13W pre):REP cyt-ham: ovr 1 umol/L
orl-rat TDLO: 21500 ug/kg(multi):TER ihl-wmn TCLO: 129 ug/m3/20Y-C:CAR
ims-rat TDLO: 40 mg/kg/4W-I:CAR ims-rat TD: 70 mg/kg:ETA
ims-rat TD: 45 mg/kg/4W-I:NEO ihl-man TCLO: 88 ug/m3/8.6Y:KID
ihl-hmn LCLO: 39 mg/m3/20M unk-man LDLO: 15 mg/kg
orl-rat LD50: 225 mg/kg ihl-rat LC50: 25 mg/m3/30M
ipr-rat LD50: 4 mg/kg scu-rat LD50: 9 mg/kg
ivn-rat LD50: 1800 ug/kg orl-mus LD50: 890 mg/kg
ihl-mus LCLO: 170 mg/m3 orl-rbt LDLO: 70 mg/kg
scu-rbt LDLO: 6 mg/kg ivn-rbt LDLO: 5mg/kg
ims-ham LDLO: 25 mg/kg

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE
Cadmium metal, powder

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Wear appropriate respiratory and protective equipment specified in section VIII-control measures. 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. Use non-sparking tools.

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WASTE DISPOSAL METHOD

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

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HAZARD LABEL INFORMATION:

DANGER: CONTAINS CADMIUM Use chemical splash goggles and face AVOID CREATING DUST CAN CAUSE LUNG AND KIDNEY DISEASE

PRECAUTIONS TO BE TAKEN IN HANDLING

The above is OSHA 29 CFR 1910.1027 (m)(3)(ii) minimium requirement for cadmium warning labels. Store in tightly sealed container in a cool, dry area away form heat and sources of ignition. Wash thoroughly after handling.

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PRECAUTIONS TO BE TAKEN IN STORING

OTHER PRECAUTIONS

Do not breath or ingest cadmium dust.

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SECTION VIII- CONTROL MEASURES
Cadmium metal, powder

PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:

NIOSH approved respirator Rubber gloves Safety glasses Clothes to prevent skin contact

RESPIRATORY EQUIPMENT (SPECIFY TYPE)

Select according to OSHA 29 CFR 1910.1027(g)(2)(i) Table 2

EYE PROTECTION

Vented goggles and/or face shield

PROTECTIVE GLOVES

Rubber, butyl, PVC

OTHER PROTECTIVE CLOTHING

Protective gear suitable to prevent contamination by cadmium dust.

VENTILATION

Local Exhaust: To maintain concentration at or below PEL
Special: Enclose process if possible
Mechanical (Gen): Not recommended
Other: Engineering and work practices

WORK/HYGIENIC/MAINTENANCE PRACTICES

Implement engineering and work practice controls to reduce and maintain concentration of exposure to cadmium at or below PEL. [OSHA 29 CFR 1910.1027 (f)(1)(i)]. Handle in a controlled, inert atmosphere. Minimize exposure of cadmium by local exhaust and enclosing process if/when possible. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Shower and change clothes at the end of workshift (DO NOT wear contaminated clothing home). Do not blow dust off clothing or skin with compressed air.
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SECTION IX - ADDITIONAL COMMENTS
Cadmium metal, powder

No data available.

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