Material Safety Data Sheet

Cadmium metal, granular  
MSDS# 03720

Section 1 - Chemical Product and Company Identification

MSDS Name: Cadmium metal, granular
Catalog Numbers: 61213-5000, C/0080/48
Synonyms: None.
Company Identification: Fisher Scientific UK  
Bishop Meadow Road, Loughborough  
Leics. LE11 5RG
For information in Europe, call: (01509) 231166
Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

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CAS#: 7440-43-9
Chemical Name: Cadmium
%: 100
EINECS#: 231-152-8
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Hazard Symbols:
T+ F
Risk Phrases:
45 11 25 26

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Potential Health Effects
Eye:
Causes eye irritation.
Skin:
Causes skin irritation.
Ingestion:
Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion may produce fluid loss, acute renal failure, and cardiopulmonary depression.
Inhalation:
May be fatal if inhaled. 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. Damage may be delayed. May cause nausea, vomiting, abdominal pain, diarrhea, chest tightness, weakness, and delayed pulmonary edema. In humans inhalation causes proteinuria, an excess of protein in the urine.
Chronic:
May cause respiratory tract cancer. 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.

Section 4 - First Aid Measures

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:
Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:
Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation:
POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Attempt rescue only after notifying at least one other person of the emergency and putting into effect established emergency procedures. Do not become a casualty yourself.

Notes to Physician:
Administration of calcium disodium EDTA may be useful in acute poisoning with its use at the discretion of qualified medical personnel. Persons with kidney disease, chronic respiratory disease, liver disease, or skin disease may be at increased risk from exposure to this substance.

Section 5 - Fire Fighting Measures

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Material can spontaneously ignite (pyrophoric) when exposed to air at normal or slightly elevated temperatures. Dust can be an explosion hazard when exposed to heat or flame. Flammable solid. 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.

Extinguishing Media:
Use dry sand, graphite powder, dry sodium chloride-based extinguishers.

Section 6 - Accidental Release Measures

General Information:
Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Place under an inert atmosphere.

Section 7 - Handling and Storage

Handling:
Wash thoroughly after handling. Wash thoroughly after handling. 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. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Do not ingest or inhale. Handle under an inert atmosphere. Store protected from air. Use only in a chemical fume hood. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:
Keep away from heat and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not expose to air. Store under an inert atmosphere.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:
Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood. See 29CFR 1910.1027 for regulations applying to all occupational exposures to cadmium and cadmium compounds, in all forms.

Exposure Limits
CAS# 7440-43-9:
United Kingdom, WEL - TWA: 0.025 mg/m³ TWA
United Kingdom, WEL - STEL: 0.075 mg/m³ STEL
United States OSHA: 0.2 mg/m³ TWA (dust); 0.1 mg/m³ TWA (fume); 0.6 mg/m³ Ceiling (dust); 0.3 mg/m³ Ceiling (fume); 2.5 µg/m³ Action Level; 5 µg/m³ TWA (Do not eat, drink or chew tobacco or gum or apply cosmetics in regulated areas. Carcinogen - dust can cause lung and kidney
Belgium - TWA: 0.002 mg/m³ VLE (respirable particulate); 0.01 mg/m³ VLE (inhalable particulate)
France - VME: 0.05 mg/m³ VME
Germany: (cadmium compounds): 0.05 mg/m³ VME (as Cd)
Japan: 0.05 mg/m³ OEL
Malaysia: 0.01 mg/m³ TWA; 0.002 mg/m³ TWA (respirable fraction)
Netherlands: (chromium compounds): 0.01 mg/m³ STEL
Netherlands: 0.005 mg/m³ MAC
Russia: 0.01 mg/m³ TWA (aerosol)
Russia: 0.05 mg/m³ STEL (aerosol)
Spain: 0.01 mg/m³ VLA-ED (inhalable fraction); 0.002 mg/m³ VLA-ED (respirable fraction)

Personal Protective Equipment
Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:
Wear appropriate protective gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.
Section 9 - Physical and Chemical Properties

Physical State: Granules
Color: silver white
Odor: odorless
pH: Not available
Vapor Pressure: Not applicable.
Viscosity: Not applicable.
Boiling Point: 765 deg C @ 760 mmHg (1,409.00 F)
Freezing/Melting Point: 321 deg C (609.80 F)
Autoignition Temperature: Not available.
Flash Point: Not available
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
Decomposition Temperature: Not available
Solubility in water: Insoluble
Specific Gravity/Density: 8.64 @ 25 C
Molecular Formula: Cd
Molecular Weight: 112.40

Section 10 - Stability and Reactivity

Chemical Stability:
Oxidizes when exposed to air. Easily tarnishes in moist air. Powder
or liquid is pyrophoric. Contact with acid liberates gas.
Conditions to Avoid:
Ignition sources, dust generation, excess heat, prolonged exposure
to
air.
Incompatibilities with Other Materials
Strong oxidizing agents, acids, sulfur, zinc, selenium, tellurium.
Hazardous Decomposition Products
Toxic cadmium oxide fumes.
Hazardous Polymerization
Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 7440-43-9: EU9800000
LD50/LC50:
RTECS: CAS# 7440-43-9: Inhalation, rat: LC50 = 25
mg/m3/30M; Oral, mouse: LD50 = 890 mg/kg; Oral, rat: LD50 =
2330 mg/kg;
Other:
Carcinogenicity:
Cadmium -
ACGIH: A2 - Suspected Human Carcinogen (Cadmium compounds).
California: carcinogen, initial date 10/1/87
NTP: Known carcinogen
IARC: Group 1 carcinogen
Other:
See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity:
Fish: Rainbow trout: TLm = 30 ppm; 24 Hr; Hard waterFish: Striped
bass: LC50 = 0.001 ppm; 24-48 Hr; Static bioassayFish: Fathead
Minnow: TL50 = 7.2 ppm; 96 Hr; UnspecifiedFish:
Bluegill/Sunfish: LCO = 0.08 ppm; 96 Hr; Static bioassay (Hard
water)

Section 13 - Disposal Considerations
Dispose of in a manner consistent with federal, state, and local regulations.
Section 14 - Transport Information

IATA
Shipping Name:          TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.
Hazard Class:           6.1
UN Number:              2930
Packing Group:          I

IMO
Shipping Name:          TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.
Hazard Class:           6.1
UN Number:              2930
Packing Group:          I

RID/ADR
Shipping Name:          TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.
Hazard Class:           6.1
UN Number:              2930
Packing Group:          I

USA RQ: CAS# 7440-43-9: 10 lb final RQ (no reporting of releases of this hazard)

Section 15 - Regulatory Information

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: T+ F
Risk Phrases:
R 45  May cause cancer.
R 11  Highly flammable.
R 25  Toxic if swallowed.
R 26  Very toxic by inhalation.

Safety Phrases:
S 53  Avoid exposure - obtain special instructions before use.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45  In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)
CAS# 7440-43-9: Not available
Canada
CAS# 7440-43-9 is listed on Canada's DSL List
US Federal
TSCA
CAS# 7440-43-9 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date:
6/28/1999
Revision #6 Date
6/06/2006
Revisions were made in Sections:
9
The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any
special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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