Material Safety Data Sheet

Cadmium sulfate octahydrate
MSDS# 03810

Section 1 - Chemical Product and Company Identification

MSDS Name: Cadmium sulfate octahydrate
Catalog Numbers:  
C/0480/48, C/0480/53, C/0520/48, C/0520/70
Synonyms: Cadmium sulphate octahydrate; sulfuric acid cadmium salt octahydrate
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#: 7790-84-3
Chemical Name: Cadmium sulfate octahydrate
%: 100
EINECS#: unlisted
Hazard Symbols: 
Risk Phrases: 
Text for R-phrases: see Section 16
Hazard Symbols: T N
Risk Phrases: 49 22 48/23/25 50/53

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful if swallowed. May cause cancer by inhalation. Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Carcinogen.

Potential Health Effects
Eye: Causes eye irritation.
Skin: Causes skin irritation. May be harmful if absorbed through the skin.
Ingestion: Harmful if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause unconsciousness.
Inhalation: Effects may be delayed. Causes respiratory tract irritation.
Irresistible may lead to chemical pneumonitis and pulmonary edema.

May cause dyspnea (difficult or labored breathing). May cause cough, chest pain, fever, muscular cramps, and headache.

Chronic: May cause respiratory tract cancer. Prolonged or repeated exposure may cause permanent bone structure abnormalities. May cause liver and kidney damage. May cause anemia and other blood cell abnormalities.
Chronic inhalation may cause pulmonary emphysema. Chronic inhalation may cause pulmonary fibrosis. Inhalation of dust may cause chronic rhinitis (inflammation of the mucous membrane of the nose).

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 immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

Antidote: The use of Calcium disodium EDTA as a chelating agent should be determined by qualified medical personnel.

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

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. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash hands before eating. Minimize dust generation and accumulation.

Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Store in a cool, dry place. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection Engineering Controls: Facilities storing or utilizing this material should be equipped
with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits
CAS# 7790-84-3:
United Kingdom, WEL - TWA: (cadmium compounds): 0.025 mg/m³ TWA (except cadmium oxide fume, cadmium sulphide, cadmium sulphide p)
United Kingdom, WEL - STEL: (cadmium compounds): 0.075 mg/m³ STEL (except cadmium oxide fume, cadmium sulphide, cadmium sulphide)
United States OSHA: 2.5 µg/m³ Action Level (as Cd); 5 µg/m³ PEL (as Cd). Do not eat, drink or chew tobacco or gum or apply cosmetics in regulated areas. Carcinogen: dust can cause lung and kidney disease. See 29 CFR 1910.1027) (Cadmium compounds).
Belgium - TWA: (cadmium compounds): 0.002 mg/m³ VLE (respirable particulates, as Cd); 0.01 mg/m³ VLE (inhalable part
France - VME: (cadmium compounds): 0.05 mg/m³ VME (as Cd)
Germany: (cadmium compounds): 0.05 mg/m³ VME (as Cd)
Japan: (cadmium compounds): 0.05 mg/m³ OEL (as Cd)
Malaysia: (cadmium compounds): 0.01 mg/m³ TWA (as Cd); 0.002 mg/m³ TWA (respirable fraction, as Cd)
Russia: (cadmium compounds): 0.05 mg/m³ TWA (as Cd)
Russia: (cadmium compounds): 0.01 mg/m³ STEL (as Cd)
Spain: (cadmium compounds): 0.01 mg/m³ VLA-ED (inhalable fraction, except cadmium sulfoselenide and cadmium
CAS# 10124-36-4:
United Kingdom, WEL - TWA: (cadmium compounds): 0.025 mg/m³ TWA (except cadmium oxide fume, cadmium sulphide, cadmium sulphide p)
United Kingdom, WEL - STEL: (cadmium compounds): 0.075 mg/m³ STEL (except cadmium oxide fume, cadmium sulphide, cadmium sulphide)
United States OSHA: 2.5 µg/m³ Action Level (as Cd); 5 µg/m³ PEL (as Cd). Do not eat, drink or chew tobacco or gum or apply cosmetics in regulated areas. Carcinogen: dust can cause lung and kidney disease. See 29 CFR 1910.1027) (Cadmium compounds).
Belgium - TWA: (cadmium compounds): 0.002 mg/m³ VLE (respirable particulates, as Cd); 0.01 mg/m³ VLE (inhalable part
France - VME: (cadmium compounds): 0.05 mg/m³ VME (as Cd)
Germany: (cadmium compounds): 0.05 mg/m³ VME (as Cd)
Japan: (cadmium compounds): 0.05 mg/m³ OEL (as Cd)
Malaysia: (cadmium compounds): 0.01 mg/m³ TWA (as Cd); 0.002 mg/m³ TWA (respirable fraction, as Cd)
Russia: (cadmium compounds): 0.05 mg/m³ TWA (as Cd)
Russia: (cadmium compounds): 0.01 mg/m³ STEL (as Cd)
Spain: 0.01 mg/m³ VLA-ED (inhalable fraction, as Cd); 0.002 mg/m³ VLA-ED (respirable fr

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 and clothing to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.
Respirators:
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Color: white
Odor: none reported
pH: Not available
Vapor Pressure: Negligible.
Viscosity: Not applicable.
Boiling Point: Not available
Freezing/Melting Point: 126 deg F (52.22 C)
Autoignition Temperature: Not applicable
Flash Point: Not applicable.
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
Decomposition Temperature: Not available
Solubility in water: Soluble in water.
Specific Gravity/Density: 3.09 (water=1)
Molecular Formula: CdSO4.8H2O
Molecular Weight: 769.51

Section 10 - Stability and Reactivity

Chemical Stability: Stable.
Conditions to Avoid:
Incompatible materials, dust generation.
Incompatibilities with Other Materials
Metals, oxidizing agents, zinc, selenium, tellurium, hydrogen azide,
Violently reacts with magnesium and with aluminum powder when heated..
Hazardous Decomposition Products
Oxides of sulfur, toxic cadmium oxide fumes.
Hazardous Polymerization
Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 7790-84-3: EV2850000
CAS# 10124-36-4: EV2700000
LD50/LC50:
Not available
CAS# 10124-36-4: Oral, mouse: LD50 = 47 mg/kg; Oral, rat: LD50 = 280 mg/kg;.
Not available
Carcinogenicity:
Cadmium sulfate octahydrate -
California: carcinogen, initial date 10/1/87 (Cadmium compounds).
NTP: Known carcinogen (Cadmium compounds).
IARC: Group 1 carcinogen (Cadmium compounds).
Cadmium sulfate -
California: carcinogen, initial date 10/1/87 (Cadmium compounds).
NTP: Known carcinogen (Cadmium compounds).
IARC: Group 1 carcinogen (Cadmium compounds).
Other:
See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location.

Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

IATA

Shipping Name: CADMIUM COMPOUND
Hazard Class: 6.1
UN Number: 2570
Packing Group: III

IMO

Shipping Name: CADMIUM COMPOUND
Hazard Class: 6.1
UN Number: 2570
Packing Group: III

RID/ADR

Shipping Name: CADMIUM COMPOUND
Hazard Class: 6.1
UN Number: 2570
Packing Group: III

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T N

Risk Phrases:

R 49 May cause cancer by inhalation.
R 22 Harmful if swallowed.
R 48/23/25 Toxic : danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 22 Do not breathe dust.
S 36/37 Wear suitable protective clothing and gloves.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)

CAS# 7790-84-3: Not available
CAS# 10124-36-4: 3

Canada

CAS# 10124-36-4 is listed on Canada's DSL List

US Federal

TSCA

CAS# 7790-84-3 is not listed on the TSCA Inventory. It is for research and development use only.
CAS# 10124-36-4 is listed on the TSCA Inventory.
Section 16 - Other Information

Text for R-phrases from Section 2

MSDS Creation Date:
5/12/1998
Revision #5 Date
11/03/2005

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