

## SAFETY DATA SHEET

Revision Date 17-Jan-2018

Revision Number 3

### 1. Identification

**Product Name** Cadmium  
**Cat No. :** C3-500  
**CAS-No** 7440-43-9  
**Synonyms** No information available  
**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use

#### Details of the supplier of the safety data sheet

##### Company

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

##### **Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|  |             |
|--|-------------|
| Flammable solids                                     | Category 2  |
| Acute oral toxicity                                  | Category 4  |
| Acute dermal toxicity                                | Category 4  |
| Acute Inhalation Toxicity - Dusts and Mists          | Category 2  |
| Germ Cell Mutagenicity                               | Category 2  |
| Carcinogenicity                                      | Category 1A |
| Reproductive Toxicity                                | Category 2  |
| Specific target organ toxicity (single exposure)     | Category 3  |
| Target Organs - Respiratory system.                  |             |
| Specific target organ toxicity - (repeated exposure) | Category 1  |
| Target Organs - Kidney, Blood.                       |             |
| Combustible dust                                     | Yes         |

#### Label Elements

##### **Signal Word**

Danger

**Hazard Statements**

Flammable solid  
 May form combustible dust concentrations in air  
 Fatal if inhaled  
 Harmful if swallowed  
 Harmful in contact with skin  
 May cause respiratory irritation  
 Suspected of causing genetic defects  
 May cause cancer  
 Suspected of damaging fertility. Suspected of damaging the unborn child  
 Causes damage to organs through prolonged or repeated exposure

**Precautionary Statements****Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Do not breathe dust/fume/gas/mist/vapors/spray  
 Use only outdoors or in a well-ventilated area  
 Ground/bond container and receiving equipment  
 Use explosion-proof electrical/ventilating/lighting/equipment

**Response**

IF exposed or concerned: Get medical attention/advice

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Immediately call a POISON CENTER or doctor/physician

**Skin**

IF ON SKIN: Wash with plenty of soap and water  
 Wash contaminated clothing before reuse  
 Call a POISON CENTER or doctor/physician if you feel unwell

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
 Rinse mouth

**Fire**

Fight fire with normal precautions from a reasonable distance  
 Evacuate area

**Storage**

Store locked up  
 Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Very toxic to aquatic life with long lasting effects  
 WARNING. Cancer and Reproductive Harm - <https://www.p65warnings.ca.gov/>.

### 3. Composition/Information on Ingredients

| Component | CAS-No | Weight % |
|-----------|--------|----------|
|-----------|--------|----------|

|         |           |     |
|---------|-----------|-----|
| Cadmium | 7440-43-9 | 100 |
|---------|-----------|-----|

#### 4. First-aid measures

|  |  |
|--|--|
| <b>General Advice</b>                      | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.  |
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.   |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.  |
| <b>Inhalation</b>                          | Move to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. |
| <b>Ingestion</b>                           | Do not induce vomiting. Call a physician or Poison Control Center immediately.   |
| <b>Most important symptoms and effects</b> | None reasonably foreseeable. . Kidney disorders: May cause harm to the unborn child: Blood disorders   |
| <b>Notes to Physician</b>                  | Treat symptomatically  |

#### 5. Fire-fighting measures

|   |                          |
|---|--------------------------|
| <b>Unsuitable Extinguishing Media</b>   | No information available |
| <b>Flash Point</b>                      | No information available |
| <b>Method -</b>                         | No information available |
| <b>Autoignition Temperature</b>         | No information available |
| <b>Explosion Limits</b>                 |                          |
| <b>Upper</b>                            | No data available        |
| <b>Lower</b>                            | No data available        |
| <b>Sensitivity to Mechanical Impact</b> | No information available |
| <b>Sensitivity to Static Discharge</b>  | No information available |

#### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. Fine dust dispersed in air may ignite. Dust can form an explosive mixture in air. Pyrophoric properties of solids and liquids. Do not allow run-off from fire fighting to enter drains or water courses.

#### Hazardous Combustion Products

Highly toxic fumes

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

#### NFPA

| Health | Flammability | Instability | Physical hazards |
|--------|--------------|-------------|------------------|
| 4      | 1            | 0           | N/A              |

#### 6. Accidental release measures

|                                  |   |
|----------------------------------|---|
| <b>Personal Precautions</b>      | Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.   |
| <b>Environmental Precautions</b> | Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. |

**Methods for Containment and Clean Up** Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

## 7. Handling and storage

**Handling** Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe vapors/dust. Do not ingest.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere.

## 8. Exposure controls / personal protection

### Exposure Guidelines

| Component | ACGIH TLV   | OSHA PEL  | NIOSH IDLH                | Mexico OEL (TWA)  |
|-----------|---|---|---------------------------|---|
| Cadmium   | TWA: 0.01 mg/m <sup>3</sup><br>TWA: 0.002 mg/m <sup>3</sup> | Ceiling: 0.3 mg/m <sup>3</sup><br>Ceiling: 0.6 mg/m <sup>3</sup><br>(Vacated) STEL: 0.3 ppm<br>TWA: 0.1 mg/m <sup>3</sup><br>TWA: 0.2 mg/m <sup>3</sup><br>TWA: 5 µg/m <sup>3</sup> | IDLH: 9 mg/m <sup>3</sup> | TWA: 0.01 mg/m <sup>3</sup><br>TWA: 0.002 mg/m <sup>3</sup> |

### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

**Engineering Measures** Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal Protective Equipment

**Eye/face Protection** 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 and body protection** Long sleeved clothing.

**Respiratory Protection** 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.

**Hygiene Measures** When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feeding stuffs.

## 9. Physical and chemical properties

|                            |                          |
|----------------------------|--------------------------|
| <b>Physical State</b>      | Solid                    |
| <b>Appearance</b>          | Silver                   |
| <b>Odor</b>                | Odorless                 |
| <b>Odor Threshold</b>      | No information available |
| <b>pH</b>                  | No information available |
| <b>Melting Point/Range</b> | 321 °C / 609.8 °F        |

|  |                             |
|--|-----------------------------|
| Boiling Point/Range                    | 765 °C / 1409 °F @ 760 mmHg |
| Flash Point                            | No information available    |
| Evaporation Rate                       | Not applicable              |
| Flammability (solid,gas)               | No information available    |
| Flammability or explosive limits       |                             |
| Upper                                  | No data available           |
| Lower                                  | No data available           |
| Vapor Pressure                         | No information available    |
| Vapor Density                          | Not applicable              |
| Specific Gravity                       | 8.64 @ 25°C                 |
| Solubility                             | Insoluble in water          |
| Partition coefficient; n-octanol/water | No data available           |
| Autoignition Temperature               | No information available    |
| Decomposition Temperature              | No information available    |
| Viscosity                              | Not applicable              |
| Molecular Formula                      | Cd                          |
| Molecular Weight                       | 112.40                      |

## 10. Stability and reactivity

|                                  |   |
|----------------------------------|---|
| Reactive Hazard                  | None known, based on information available  |
| Stability                        | Stable under recommended storage conditions. Moisture sensitive. Air sensitive.                               |
| Conditions to Avoid              | Incompatible products. Excess heat. Avoid dust formation. Exposure to air or moisture over prolonged periods. |
| Incompatible Materials           | Strong oxidizing agents, Strong acids, Sulfur oxides  |
| Hazardous Decomposition Products | Highly toxic fumes  |
| Hazardous Polymerization         | Hazardous polymerization does not occur.  |
| Hazardous Reactions              | None under normal processing.   |

## 11. Toxicological information

### Acute Toxicity

#### Product Information Component Information

| Component | LD50 Oral                 | LD50 Dermal | LC50 Inhalation                            |
|-----------|---------------------------|-------------|--|
| Cadmium   | LD50 = 2330 mg/kg ( Rat ) | Not listed  | LC50 = 25 mg/m <sup>3</sup> ( Rat ) 30 min |

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No    | IARC    | NTP   | ACGIH | OSHA | Mexico |
|-----------|-----------|---------|-------|-------|------|--------|
| Cadmium   | 7440-43-9 | Group 1 | Known | A2    | X    | A2     |

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

NTP: (National Toxicity Program)

ACGIH: (American Conference of Governmental Industrial Hygienists)

*Known - Known Carcinogen*  
*Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*  
 A1 - *Known Human Carcinogen*  
 A2 - *Suspected Human Carcinogen*  
 A3 - *Animal Carcinogen*  
 ACGIH: (American Conference of Governmental Industrial Hygienists)

|  |  |
|--|--|
| <b>Mutagenic Effects</b>                         | Possible risk of irreversible effects                                    |
| <b>Reproductive Effects</b>                      | Possible risk of impaired fertility. May cause harm to the unborn child. |
| <b>Developmental Effects</b>                     | No information available.  |
| <b>Teratogenicity</b>                            | No information available.  |
| <b>STOT - single exposure</b>                    | Respiratory system   |
| <b>STOT - repeated exposure</b>                  | Kidney Blood   |
| <b>Aspiration hazard</b>                         | No information available   |
| <b>Symptoms / effects,both acute and delayed</b> | Kidney disorders: May cause harm to the unborn child: Blood disorders    |
| <b>Endocrine Disruptor Information</b>           | No information available   |
| <b>Other Adverse Effects</b>                     | The toxicological properties have not been fully investigated.           |

**12. Ecological information**



**Ecotoxicity**

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

| Component | Freshwater Algae | Freshwater Fish   | Microtox   | Water Flea                                      |
|-----------|------------------|---|------------|---|
| Cadmium   | Not listed       | LC50: 0.0004 - 0.003 mg/L, 96h (Pimephales promelas)<br>LC50: = 0.016 mg/L, 96h (Oryzias latipes)<br>LC50: = 21.1 mg/L, 96h flow-through (Lepomis macrochirus)<br>LC50: = 0.24 mg/L, 96h static (Cyprinus carpio)<br>LC50: = 4.26 mg/L, 96h semi-static (Cyprinus carpio)<br>LC50: = 0.002 mg/L, 96h (Cyprinus carpio)<br>LC50: = 0.006 mg/L, 96h static (Oncorhynchus mykiss)<br>LC50: = 0.003 mg/L, 96h | Not listed | EC50: = 0.0244 mg/L, 48h Static (Daphnia magna) |

|  |  |                                    |  |  |
|--|--|------------------------------------|--|--|
|  |  | flow-through (Oncorhynchus mykiss) |  |  |
|--|--|------------------------------------|--|--|

**Persistence and Degradability** No information available

**Bioaccumulation/ Accumulation** No information available.

**Mobility** No information available.

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

**UN-No** UN2930  
**Proper Shipping Name** TOXIC SOLIDS, FLAMMABLE, ORGANIC, N.O.S.  
**Proper technical name** Cadmium  
**Hazard Class** 6.1  
**Subsidiary Hazard Class** 4.1  
**Packing Group** I

#### TDG

**UN-No** UN2930  
**Proper Shipping Name** TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.  
**Hazard Class** 6.1  
**Subsidiary Hazard Class** 4.1  
**Packing Group** I

#### IATA

**UN-No** UN2930  
**Proper Shipping Name** TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.  
**Hazard Class** 6.1  
**Subsidiary Hazard Class** 4.1  
**Packing Group** I

#### IMDG/IMO

**UN-No** UN2930  
**Proper Shipping Name** TOXIC SOLID, FLAMMABLE, ORGANIC, N.O.S.  
**Hazard Class** 6.1  
**Subsidiary Hazard Class** 4.1  
**Packing Group** I

### 15. Regulatory information

#### International Inventories

| Component | TSCA | DSL | NDSL | EINECS    | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL         |
|-----------|------|-----|------|-----------|--------|-----|-------|------|------|-------|--------------|
| Cadmium   | X    | X   | -    | 231-152-8 | -      |     | X     | -    | X    | X     | KE-0439<br>7 |

#### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

### U.S. Federal Regulations

TSCA 12(b) Not applicable

### SARA 313

| Component | CAS-No    | Weight % | SARA 313 - Threshold Values % |
|-----------|-----------|----------|-------------------------------|
| Cadmium   | 7440-43-9 | 100      | 0.1                           |

SARA 311/312 Hazard Categories See section 2 for more information

### CWA (Clean Water Act)

| Component | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|-----------|----------------------------|-----------------------------|------------------------|---------------------------|
| Cadmium   | -                          | -                           | X                      | X                         |

### Clean Air Act

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|-----------|-----------|-------------------------|-------------------------|
| Cadmium   | X         |                         | -                       |

OSHA Occupational Safety and Health Administration  
Not applicable

| Component | Specifically Regulated Chemicals                              | Highly Hazardous Chemicals |
|-----------|---|----------------------------|
| Cadmium   | 5 µg/m <sup>3</sup> TWA<br>2.5 µg/m <sup>3</sup> Action Level | -                          |

CERCLA This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|-----------|--------------------------|----------------|
| Cadmium   | 10 lb                    | -              |

California Proposition 65 This product contains the following proposition 65 chemicals

| Component | CAS-No    | California Prop. 65                              | Prop 65 NSRL | Category                    |
|-----------|-----------|--|--------------|-----------------------------|
| Cadmium   | 7440-43-9 | Carcinogen<br>Developmental<br>Male Reproductive | 0.05 µg/day  | Developmental<br>Carcinogen |

### U.S. State Right-to-Know Regulations

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-----------|---------------|------------|--------------|----------|--------------|
| Cadmium   | X             | X          | X            | X        | X            |

### U.S. Department of Transportation

Reportable Quantity (RQ): Y  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

### U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

### Other International Regulations

Mexico - Grade No information available

## 16. Other information

**Prepared By** Regulatory Affairs  
Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

**Revision Date** 17-Jan-2018  
**Print Date** 17-Jan-2018  
**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**