

## SAFETY DATA SHEET

Revision Date 30-Mar-2024

Revision Number 3

### 1. Identification

**Product Name** Cadmium powder

**Cat No. :** 11891

**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

Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757

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

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**: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 Inhalation Toxicity - Dusts and Mists          | Category 2  |
| Germ Cell Mutagenicity                               | Category 2  |
| Carcinogenicity                                      | Category 1A |
| Reproductive Toxicity                                | Category 2  |
| Specific target organ toxicity - (repeated exposure) | Category 1  |
| Target Organs - Lungs, Kidney.                       |             |

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

Flammable solid

Fatal if inhaled  
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  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear respiratory protection  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
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

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**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

**General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

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>                          | Remove 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.                                                                                                                                                                                                                                                                                                   |
| <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

Do not allow run-off from fire-fighting to enter drains or water courses.

### Hazardous Combustion Products

Cadmium oxide.

### 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**  
4

**Flammability**  
2

**Instability**  
0

**Physical hazards**  
-

## 6. Accidental release measures

|                                  |                                                                                                                                                                                                                                                                                          |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal Precautions</b>      | Ensure adequate ventilation. Use personal protective equipment as required. 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. Should not be released into the environment. |

**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## 7. Handling and storage

|                 |                                                                                                                                                                                                                                                                          |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Handling</b> | Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance. |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place.

## 8. Exposure controls / personal protection

### Exposure Guidelines

| Component | ACGIH TLV                                                   | OSHA PEL                                                                                                                | NIOSH                     | 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: 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: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures** Ensure adequate ventilation, especially in confined areas.

### 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** Wear appropriate protective gloves and clothing to prevent skin exposure.

**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.

**Recommended Filter type:** Particulates filter conforming to EN 143.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

|                                        |                          |
|----------------------------------------|--------------------------|
| Physical State                         | Solid                    |
| Appearance                             | No information available |
| Odor                                   | No information available |
| Odor Threshold                         | No information available |
| pH                                     | No information available |
| Melting Point/Range                    | 321.1 °C / 610 °F        |
| Boiling Point/Range                    | 765 °C / 1409 °F         |
| 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                         | 23 hPa @ 20 °C           |
| Vapor Density                          | Not applicable           |
| Specific Gravity                       | 8.65 g/cm <sup>3</sup>   |
| Bulk Density                           | 2700 kg/m <sup>3</sup>   |
| Solubility                             | No information available |
| Partition coefficient; n-octanol/water | No data available        |
| Autoignition Temperature               | No information available |
| Decomposition Temperature              | No information available |

## Viscosity

Not applicable

## 10. Stability and reactivity

**Reactive Hazard** None known, based on information available

**Stability** Stable under normal conditions.

**Conditions to Avoid** Incompatible products.

**Incompatible Materials** Strong oxidizing agents

**Hazardous Decomposition Products** Cadmium oxide

**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 = 1140 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)*

*Known - Known Carcinogen*

*Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

*A1 - Known Human Carcinogen*

*A2 - Suspected Human Carcinogen*

*A3 - Animal Carcinogen*

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

*Mexico - Occupational Exposure Limits - Carcinogens*

*Mexico - Occupational Exposure Limits - Carcinogens*

*A1 - Confirmed Human Carcinogen*

*A2 - Suspected Human Carcinogen*

*A3 - Confirmed Animal Carcinogen*

*A4 - Not Classifiable as a Human Carcinogen*

*A5 - Not Suspected as a Human Carcinogen*

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

|                                                   |                                                                |
|---------------------------------------------------|----------------------------------------------------------------|
| <b>Teratogenicity</b>                             | No information available.                                      |
| <b>STOT - single exposure</b>                     | None known                                                     |
| <b>STOT - repeated exposure</b>                   | Lungs Kidney                                                   |
| <b>Aspiration hazard</b>                          | No information available                                       |
| <b>Symptoms / effects, both acute and delayed</b> | No information available                                       |
| <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. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

| 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 flow-through (Oncorhynchus mykiss) | Not listed | EC50: = 0.0244 mg/L, 48h Static (Daphnia magna) |

|                                      |                           |
|--------------------------------------|---------------------------|
| <b>Persistence and Degradability</b> | May persist               |
| <b>Bioaccumulation/ Accumulation</b> | No information available. |
| <b>Mobility</b>                      | No information available. |

## 13. Disposal considerations

|                               |                                                                                                                                                                                                                                                                 |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waste Disposal Methods</b> | 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

|                                |                                           |
|--------------------------------|-------------------------------------------|
| <b>UN-No</b>                   | UN3179                                    |
| <b>Proper Shipping Name</b>    | Flammable solid, toxic, inorganic, n.o.s. |
| <b>Technical Name</b>          | (Cadmium powder)                          |
| <b>Hazard Class</b>            | 4.1                                       |
| <b>Subsidiary Hazard Class</b> | 6.1                                       |
| <b>Packing Group</b>           | II                                        |

### TDG

**UN-No** UN3179  
**Proper Shipping Name** Flammable solid, toxic, inorganic, n.o.s.  
**Hazard Class** 4.1  
**Subsidiary Hazard Class** 6.1  
**Packing Group** II

**IATA**

**UN-No** UN3179  
**Proper Shipping Name** FLAMMABLE SOLID, TOXIC, INORGANIC, N.O.S.\*  
**Hazard Class** 4.1  
**Subsidiary Hazard Class** 6.1  
**Packing Group** II

**IMDG/IMO**

**UN-No** UN3179  
**Proper Shipping Name** Flammable solid, toxic, inorganic, n.o.s.  
**Hazard Class** 4.1  
**Subsidiary Hazard Class** 6.1  
**Packing Group** II

## 15. Regulatory information

**United States of America Inventory**

| Component | CAS No    | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|-----------|-----------|------|-----------------------------------------------|-----------------------------|
| Cadmium   | 7440-43-9 | X    | ACTIVE                                        | -                           |

**Legend:**

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

**International Inventories**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component | CAS No    | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|-----------|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Cadmium   | 7440-43-9 | X   | -    | 231-152-8 | X     | X    |      | X    | X     | KE-04397 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

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

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

| Component | CWA - Hazardous | CWA - Reportable | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|-----------|-----------------|------------------|------------------------|---------------------------|
|-----------|-----------------|------------------|------------------------|---------------------------|

|         | Substances | Quantities |   |   |
|---------|------------|------------|---|---|
| Cadmium | -          | -          | X | X |

**Clean Air Act**

OSHA - Occupational Safety and Health Administration Not applicable

| Component | Specifically Regulated Chemicals      | Highly Hazardous Chemicals |
|-----------|---------------------------------------|----------------------------|
| Cadmium   | 5 µg/m³ TWA<br>2.5 µg/m³ 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) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

| Component | Hazardous Substances RQs | CERCLA Extremely Hazardous Substances RQs | SARA Reportable Quantity (RQ) |
|-----------|--------------------------|-------------------------------------------|-------------------------------|
| Cadmium   | 10 lb                    | -                                         | 10 lb<br>4.54 kg              |

**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        | -            |

**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

**Authorisation/Restrictions according to EU REACH**

| Component | CAS No    | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances                                                   | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)                                             |
|-----------|-----------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Cadmium   | 7440-43-9 | -                                                                   | Use restricted. See item 72.<br>(see link for restriction details)<br>Use restricted. See item 23.<br>(see link for restriction | SVHC Candidate list - 231-152-8 - Carcinogenic, Article 57a; Specific target organ toxicity after repeated exposure, Article 57(f) - human health |

|  |  |  |                                                                                                                                                      |  |
|--|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  |  |  | details)<br>Use restricted. See item 28.<br>(see link for restriction details)<br>Use restricted. See item 75.<br>(see link for restriction details) |  |
|--|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------|--|

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

#### REACH links

<https://echa.europa.eu/authorisation-list>

<https://echa.europa.eu/substances-restricted-under-reach>

<https://echa.europa.eu/candidate-list-table>

#### Safety, health and environmental regulations/legislation specific for the substance or mixture

| Component | CAS No    | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|-----------|-----------|----------|------------------------------|---------------------------|--------------------------------------------|
| Cadmium   | 7440-43-9 | Listed   | Not applicable               | Not applicable            | 0.01% (Max. Conc.)                         |

#### Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

#### Other International Regulations

| Component | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-----------|-----------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|------------------------------------|
| Cadmium   | 7440-43-9 | Not applicable                                                                            | Not applicable                                                                           | Not applicable             | Annex I - Y26                      |

## 16. Other information

#### Prepared By

Health, Safety and Environmental Department  
 Email: chem.techinfo@thermofisher.com  
 www.thermofisher.com

#### Revision Date

30-Mar-2024

#### Print Date

30-Mar-2024

#### Revision Summary

New emergency telephone response service provider.

#### 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**