

## SAFETY DATA SHEET

Creation Date 21-Oct-2009

Revision Date 27-Mar-2024

Revision Number 3

### 1. Identification

|                             |  |
|-----------------------------|--|
| <b>Product Name</b>         | <b>Cerium ingot</b>                            |
| <b>Cat No. :</b>            | <b>00065</b>                                   |
| <b>CAS No</b>               | 7440-45-1                                      |
| <b>Synonyms</b>             | No information available                       |
| <b>Recommended Use</b>      | Laboratory chemicals.                          |
| <b>Uses advised against</b> | 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

#### Label Elements

##### **Signal Word**

Warning

##### **Hazard Statements**

Flammable solid

**Precautionary Statements****Prevention**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting equipment  
Wear protective gloves/protective clothing/eye protection/face protection

**Fire**

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

**Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition/Information on Ingredients

| Component         | CAS No    | Weight % |
|-------------------|-----------|----------|
| Cerium            | 7440-45-1 | >95      |
| White mineral oil | 8042-47-5 | -        |

### 4. First-aid measures

|  |  |
|--|--|
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.          |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.  |
| <b>Inhalation</b>                          | Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration. |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Get medical attention.   |
| <b>Most important symptoms and effects</b> | No information available.  |
| <b>Notes to Physician</b>                  | Treat symptomatically  |

### 5. Fire-fighting measures

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>     | Water mist may be used to cool closed containers. |
| <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                          |

**Sensitivity to Static Discharge** No information available

### Specific Hazards Arising from the Chemical

Flammable.

### Hazardous Combustion Products

Heavy metal oxides.

### 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.

### NFPA

**Health**  
1

**Flammability**  
3

**Instability**  
0

**Physical hazards**  
N/A

## 6. Accidental release measures

### Personal Precautions

Use personal protective equipment as required. Avoid dust formation. Remove all sources of ignition. Take precautionary measures against static discharges.

### Environmental Precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

**Methods for Containment and Clean Up** Pick up and transfer to properly labelled containers. Remove all sources of ignition.

## 7. Handling and storage

### Handling

Wear personal protective equipment/face protection. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools.

### Storage.

Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame. Incompatible Materials. Strong oxidizing agents.

## 8. Exposure controls / personal protection

### Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

### Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment.

### 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                             | Grey                     |
| Odor                                   | No information available |
| Odor Threshold                         | No information available |
| pH                                     | No information available |
| Melting Point/Range                    | 815 °C / 1499 °F         |
| Boiling Point/Range                    | 3257 °C / 5894.6 °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                         | No information available |
| Vapor Density                          | Not applicable           |
| Specific Gravity                       | No information available |
| Solubility                             | Reacts with water        |
| Partition coefficient; n-octanol/water | No data available        |
| Autoignition Temperature               | No information available |
| Decomposition Temperature              | No information available |
| Viscosity                              | Not applicable           |
| Molecular Formula                      | Ce                       |
| Molecular Weight                       | 140.12                   |

## 10. Stability and reactivity

|                                  |  |
|----------------------------------|--|
| Reactive Hazard                  | Yes  |
| Stability                        | Moisture sensitive. Air sensitive.   |
| Conditions to Avoid              | Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to air. Exposure to moisture. |
| Incompatible Materials           | Strong oxidizing agents  |
| Hazardous Decomposition Products | Heavy metal oxides   |
| 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 |
|-------------------|-------------------|----------------------|-----------------|
| White mineral oil | >5000 mg/kg (Rat) | >3000 mg/kg (Rabbit) | Not listed      |

**Toxicologically Synergistic** No information available

#### Products

#### 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     |
|-------------------|-----------|------------|------------|------------|------------|------------|
| Cerium            | 7440-45-1 | Not listed | Not listed | Not listed | Not listed | Not listed |
| White mineral oil | 8042-47-5 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** No information available

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system. Reacts with water so no ecotoxicity data for the substance is available.

| Component         | Freshwater Algae | Freshwater Fish                                  | Microtox   | Water Flea |
|-------------------|------------------|--|------------|------------|
| White mineral oil | Not listed       | LC50: > 10000 mg/L, 96h<br>(Lepomis macrochirus) | Not listed | Not listed |

**Persistence and Degradability** May persist based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Is not likely mobile in the environment.

| Component         | log Pow |
|-------------------|---------|
| White mineral oil | 6       |

## 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 UN1333  
 Proper Shipping Name CERIUM  
 Hazard Class 4.1  
 Packing Group II

### TDG

UN-No UN1333  
 Proper Shipping Name CERIUM  
 Hazard Class 4.1  
 Packing Group II

### IATA

**UN-No** UN1333  
**Proper Shipping Name** CERIUM  
**Hazard Class** 4.1  
**Packing Group** II

**IMDG/IMO**

**UN-No** UN1333  
**Proper Shipping Name** CERIUM  
**Hazard Class** 4.1  
**Packing Group** II

## 15. Regulatory information

**United States of America Inventory**

| Component         | CAS No    | TSCA | TSCA Inventory notification -<br>Active-Inactive | TSCA - EPA Regulatory<br>Flags |
|-------------------|-----------|------|--|--------------------------------|
| Cerium            | 7440-45-1 | X    | ACTIVE   | -                              |
| White mineral oil | 8042-47-5 | 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     |
|-------------------|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Cerium            | 7440-45-1 | X   | -    | 231-154-9 | X     | X    |      | X    | X     | KE-05379 |
| White mineral oil | 8042-47-5 | X   | -    | 232-455-8 | X     | X    | X    | X    | X     | KE-35412 |

**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 does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**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)**

Not applicable

**Clean Air Act**

Not applicable

**OSHA** - Occupational Safety and Health Administration

Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and

Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

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

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

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
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**

Not applicable

| 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) |
|-------------------|-----------|---|---|---|
| Cerium            | 7440-45-1 | -   | -   | -   |
| White mineral oil | 8042-47-5 | -   | -   | -   |

**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) |
|-------------------|-----------|----------------|------------------------------|---------------------------|--|
| Cerium            | 7440-45-1 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |
| White mineral oil | 8042-47-5 | Listed         | Not applicable               | Not applicable            | Not applicable                             |

**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) |
|-------------------|-----------|---|--|----------------------------|------------------------------------|
| Cerium            | 7440-45-1 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |
| White mineral oil | 8042-47-5 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

**16. Other information**

|                         |  |
|-------------------------|--|
| <b>Prepared By</b>      | Health, Safety and Environmental Department<br>Email: chem.techinfo@thermofisher.com<br>www.thermofisher.com |
| <b>Creation Date</b>    | 21-Oct-2009  |
| <b>Revision Date</b>    | 27-Mar-2024  |
| <b>Print Date</b>       | 27-Mar-2024  |
| <b>Revision Summary</b> | 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**