



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** Cerium (Ce) powder and pieces

### Other means of identification

**SDS number** 1GR  
**Materion Code** 1GR  
**CAS number** 7440-45-1  
**Synonyms** Cerium

### Manufacturer/Importer/Supplier/Distributor information

#### Manufacturer

**Company name** Materion Advanced Chemicals Inc.  
**Address** 407 N 13th Street  
1316 W. St. Paul Avenue  
Milwaukee, WI 53233  
United States  
**Telephone** 414.212.0257  
**E-mail** advancedmaterials@materion.com  
**Contact person** Noreen Atkinson  
**Emergency phone number** Chemtrec 800.424.9300

## 2. Hazard(s) identification

**Physical hazards** Flammable solids Category 1

Substances and mixtures which, in contact with water, emit flammable gases Category 2

**Health hazards** Specific target organ toxicity, single exposure Category 1

**Environmental hazards** Hazardous to the aquatic environment, acute hazard Category 1

Hazardous to the aquatic environment, long-term hazard Category 1

**OSHA defined hazards** Not classified.

### Label elements



**Signal word** Danger

**Hazard statement** Flammable solid. Flammable solid. In contact with water releases flammable gas. If in contact with water, releases flammable gases. Causes damage to organs. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

### Precautionary statement

#### Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Do not allow contact with water. Keep away from any possible contact with water, because of violent reaction and possible flash fire. Handle under inert gas. Protect from moisture. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not eat, drink, or smoke when using this product. Avoid release to the environment. Wear protective gloves/eye protection/face protection.

#### Response

Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. IF exposed or concerned: Call a POISON CENTER/doctor. In case of fire: Use appropriate media to extinguish. Collect spillage.

#### Storage

Store in a dry place. Store in a closed container. Store locked up. Store away from incompatible materials.

#### Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

|  |   |
|--|---|
| <b>Hazard(s) not otherwise classified (HNOC)</b> | None known.   |
| <b>Supplemental information</b>                  | 100% of the mixture consists of component(s) of unknown acute oral toxicity. 100% of the mixture consists of component(s) of unknown acute dermal toxicity.<br>For further information, please contact the Product Stewardship Department at +1.800.862.4118. |

### 3. Composition/information on ingredients

#### Substances

| Chemical name | Common name and synonyms | CAS number | %   |
|---------------|--------------------------|------------|-----|
| Cerium        | Cerium                   | 7440-45-1  | 100 |

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### 4. First-aid measures

|   |   |
|---|---|
| <b>Inhalation</b>   | Move to fresh air. Call a physician if symptoms develop or persist.   |
| <b>Skin contact</b>   | Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. Rinse with water. Get medical attention if irritation develops and persists.   |
| <b>Eye contact</b>  | Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.   |
| <b>Ingestion</b>  | Get medical advice/attention if you feel unwell.  |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Direct contact with eyes may cause temporary irritation.  |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed. |
| <b>General information</b>  | If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.   |

### 5. Fire-fighting measures

|  |  |
|--|--|
| <b>Suitable extinguishing media</b>                                  | Foam. Dry chemical powder. Carbon dioxide (CO2).   |
| <b>Unsuitable extinguishing media</b>                                | Water. Do not use water jet as an extinguisher, as this will spread the fire.  |
| <b>Specific hazards arising from the chemical</b>                    | In contact with water releases flammable gas. During fire, gases hazardous to health may be formed.  |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.  |
| <b>Fire fighting equipment/instructions</b>                          | In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Do not get water inside container. Water runoff can cause environmental damage. |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.   |
| <b>General fire hazards</b>  | Flammable solid. In contact with water releases flammable gas.   |

### 6. Accidental release measures

|  |   |
|--|---|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.   |
| <b>Methods and materials for containment and cleaning up</b>               | ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not get water on spilled substance or inside containers. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. Collect spillage. Prevent product from entering drains. Stop the flow of material, if this is without risk.<br><br>Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.<br><br>Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. |
| <b>Environmental precautions</b>   | Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.  |

## 7. Handling and storage

### Precautions for safe handling

Keep away from any possible contact with water, because of violent reaction and possible flash fire. Handle under inert gas. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Store locked up. Never allow product to get in contact with water during storage. Keep away from heat, sparks and open flame. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store in a dry place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

No exposure limits noted for ingredient(s).

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Appropriate engineering controls

Ventilate as needed to control airborne dust. Use explosion-proof ventilation equipment if airborne dust levels are high.

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Wear eye/face protection. Wear eye/face protection.

#### Skin protection

##### Hand protection

Wear appropriate chemical resistant gloves.

##### Other

Wear suitable protective clothing. Use of an impervious apron is recommended. Wear protective gloves.

#### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

#### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

### General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.

## 9. Physical and chemical properties

### Appearance

#### Physical state

Solid.

#### Form

Solid.

#### Color

Not available.

#### Odor

Not available.

#### Odor threshold

Not available.

#### pH

Not available.

#### Melting point/freezing point

Not available.

#### Initial boiling point and boiling range

Not available.

#### Flash point

Not available.

#### Evaporation rate

Not available.

#### Flammability (solid, gas)

Flammable solid.

#### Upper/lower flammability or explosive limits

##### Flammability limit - lower (%)

Not available.

##### Flammability limit - upper (%)

Not available.

##### Explosive limit - lower (%)

Not available.

##### Explosive limit - upper (%)

Not available.

#### Vapor pressure

< 0.0000001 kPa at 25 °C

#### Vapor density

Not available.

|  |                |
|--|----------------|
| <b>Relative density</b>                        | Not available. |
| <b>Solubility(ies)</b>                         |                |
| <b>Solubility (water)</b>                      | Not available. |
| <b>Partition coefficient (n-octanol/water)</b> | Not available. |
| <b>Auto-ignition temperature</b>               | Not available. |
| <b>Decomposition temperature</b>               | Not available. |
| <b>Viscosity</b>                               | Not available. |
| <b>Other information</b>                       |                |
| <b>Explosive properties</b>                    | Not explosive. |
| <b>Molecular formula</b>                       | Ce             |
| <b>Molecular weight</b>                        | 140.12 g/mol   |
| <b>Oxidizing properties</b>                    | Not oxidizing. |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport.  |
| <b>Chemical stability</b>                 | Risk of ignition.  |
| <b>Possibility of hazardous reactions</b> | Hazardous polymerization does not occur.   |
| <b>Conditions to avoid</b>                | Exposure to moisture. Contact with water liberates flammable gas. Moisture. Heat, flames and sparks. High temperatures. Contact with incompatible materials. |
| <b>Incompatible materials</b>             | Strong oxidizing agents.   |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products are known.   |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Due to lack of data the classification is not possible. |
| <b>Skin contact</b> | Due to lack of data the classification is not possible. |
| <b>Eye contact</b>  | Due to lack of data the classification is not possible. |
| <b>Ingestion</b>    | Due to lack of data the classification is not possible. |

|   |  |
|---|--|
| <b>Symptoms related to the physical, chemical and toxicological characteristics</b> | Direct contact with eyes may cause temporary irritation. |
|---|--|

### Information on toxicological effects

|  |   |
|--|---|
| <b>Acute toxicity</b>                    | Not known.  |
| <b>Skin corrosion/irritation</b>         | Due to lack of data the classification is not possible. |
| <b>Serious eye damage/eye irritation</b> | Due to lack of data the classification is not possible. |

### Respiratory or skin sensitization

|                                  |   |
|----------------------------------|---|
| <b>Respiratory sensitization</b> | Due to lack of data the classification is not possible. |
| <b>Skin sensitization</b>        | Due to lack of data the classification is not possible. |

|                               |   |
|-------------------------------|---|
| <b>Germ cell mutagenicity</b> | Due to lack of data the classification is not possible. |
|-------------------------------|---|

|                        |   |
|------------------------|---|
| <b>Carcinogenicity</b> | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |
|------------------------|---|

#### IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

#### US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

|                              |   |
|------------------------------|---|
| <b>Reproductive toxicity</b> | Due to lack of data the classification is not possible. |
|------------------------------|---|

|   |                             |
|---|-----------------------------|
| <b>Specific target organ toxicity - single exposure</b> | Causes damage to organs (). |
|---|-----------------------------|

**Specific target organ toxicity - repeated exposure** Due to lack of data the classification is not possible.

**Aspiration hazard** Due to lack of data the classification is not possible.

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

### DOT

**UN number** UN3078  
**UN proper shipping name** Cerium, turnings or gritty powder  
**Transport hazard class(es)**  
**Class** 4.3  
**Subsidiary risk** -  
**Label(s)** 4.3  
**Packing group** II  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**Special provisions** A1, IB7, IP2, T3, TP33  
**Packaging exceptions** 151  
**Packaging non bulk** 212  
**Packaging bulk** 242

### IATA

**UN number** UN3078  
**UN proper shipping name** Cerium, turnings or gritty powder  
**Transport hazard class(es)**  
**Class** 4.3  
**Subsidiary risk** -  
**Label(s)** 4.3  
**Packing group** II  
**Environmental hazards** No.  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

### IMDG

**UN number** UN3078  
**UN proper shipping name** Cerium, turnings or gritty powder  
**Transport hazard class(es)**  
**Class** 4.3  
**Subsidiary risk** -  
**Label(s)** 4.3  
**Packing group** II

**Environmental hazards**

**Marine pollutant**

No.

**EmS**

Not available.

**Special precautions for user**

Read safety instructions, SDS and emergency procedures before handling.

**DOT**



**IATA; IMDG**



**15. Regulatory information**

**US federal regulations**

CERCLA/SARA Hazardous Substances - Not applicable.

All components are on the U.S. EPA TSCA Inventory List.  
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not regulated.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - Yes  
Pressure Hazard - No  
Reactivity Hazard - Yes

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical**

No

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations** California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

## **16. Other information, including date of preparation or last revision**

**Issue date** 05-17-2015

**Revision date** 10-29-2018

**Version #** 06

**Disclaimer** Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.