

## ***Material Safety Data Sheet***

Identity: Cerium

Formula: Ce

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### SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM makes no warranty, expressed or implied with respect to such information and we assume no liability resulting from its use.

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### SECTION II - PRODUCT INFORMATION/HAZARDOUS INGREDIENTS

CAS #7440-45-1

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<b>Hazardous Components</b>	<b>CAS #</b>	<b>OSHA</b>	<b>ACGIH TLV</b>	<b>%</b>
Cerium	7440-45-1	Y	Not established	>99

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### SECTION III - PHYSICAL/ CHEMICAL CHARACTERISTICS

Boiling Point: 3428°C @ 760mmHg

Specific Gravity: 0.65 at 25 C (77 F)

Melting Point: 798°C

Vapor Pressure: NA

Physical States: Solid

Vapor Density: NA

Evaporation Rate: NA

Solubility in Water: insoluble

% Volatile: NA

Appearance and Odor: Silver ingot solid; odorless

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### SECTION IV - FIRE AND EXPLOSION DATA

Flash Point: NA

Extinguishing Media: Recommended: dry chemical, Class D extinguisher  
Not Recommended: water.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards: Product will burn under fire conditions. May react with water liberating flammable, explosive hydrogen gas. Like all organic and most dry chemicals, as a powder or dust, this product (when mixed with air in critical proportions and in the presence of an ignition source) may present an explosion hazard.

Hazardous Decomposition Materials (Under Fire Conditions): none known.

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## SECTION V - REACTIVITY DATA

Stability: This material is stable under normal handling and storage conditions. Conditions to Avoid – Dusting conditions, electric arcs, open flame, spark, and moisture. Incompatibility - Materials to avoid: Air, strong acids, strong oxidizing agents, acid chlorides, halogens, chlorates, bromates, and iodates.

Hazardous Decomposition or byproducts: Hydrogen.

Hazardous Polymerization: Will not occur.

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## SECTION VI - HEALTH HAZARD DATA

### A. EMERGENCY OVERVIEW:

Physical appearance and odor: silver ingot solid, odorless.

Warning Statements: FLAMMABLE SOLID. MAY BE SPONTANEOUSLY COMBUSTIBLE IN AIR. REACTS WITH WATER AND DILUTE ACIDS TO PRODUCE FLAMMABLE, EXPLOSIVE HYDROGEN GAS.

### B. POTENTIAL HEALTH EFFECTS:

**Acute Eye:** Non-irritating. May cause foreign body irritation only.

**Acute Skin:** Skin absorption not likely.

**Acute Inhalation:** Low acute inhalation toxicity. May cause upper respiratory tract irritation.

**Acute Ingestion:** Low acute oral toxicity.

**Chronic Effects:** This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

### First Aid Measures for Accidental:

**Eye Exposure:** Rinse particulate matter from eye. Seek medical attention if irritation develops or persists or if visual changes occur.

**Skin Exposure:** In case of contact, wash with plenty of soap and water. Seek medical attention if irritation develops or persists.

**Inhalation:** If respiratory irritation or distress occurs, remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

**Ingestion:** If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention. Do not leave victim unattended.

Medical conditions possibly aggravated by exposure: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema, or bronchitis.

Note to Physician: All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treat symptomatically. No specific antidote available.

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## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE.

Evacuation Procedures and Safety: Wear appropriate protective gear for the situation.

Cleanup and Disposal of Spill: Sweep up and place in appropriate closed container. Vacuuming should be prohibited. Use non-sparking tools. Clean up residual material by washing area with water.

Handling: Avoid breathing dusts or vapors. Avoid direct or prolonged contact with skin and eyes. Use nonsparking tools and grounded/bonded equipment and containers when transferring.

Hazard Label Information: Store in tightly closed containers. Store in an area that is dry.

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## SECTION VIII - CONTROL MEASURES

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs

Assistance with selections, use and maintenance of worker protection equipment is generally available from equipment manufacturers

**Exposure Guidelines:** No exposure limits were found for this product or any of its ingredients

**Engineering controls:** Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: general area dilution/exhaust ventilation.

**Respiratory protection:** When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against dusts, mists, and fumes.

**Eye/Face protection:** Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

It is generally regarded as good practice to wear a minimum of safety glasses with side shields when working in industrial environments

**Skin protection:** Skin contact should be minimized through use of gloves and suitable long-sleeved clothing (i.e., shirts and pants). Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls: Personal hygiene is an important work practice exposure control measure and the following general measure should be taken when working with or handling this material:

- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes of contact with this material.