SAFETY DATA SHEET

1 PRODUCT AND SUPPLIER IDENTIFICATION

Product Name: Cerium Hydrate

Formula: $Ce(OH)_4$

Supplier: Stanford Advanced Materials
23661 Birtcher Dr.
Lake Forest, CA 92630

Telephone: (949) 407-8904

Fax: (949) 812-6690

Emergency: (949) 407-8904

Recommended Uses: Scientific Research

2 HAZARDS IDENTIFICATION

GHS Classification (29 CFR 1910.1200): Not classified as hazardous

GHS Label Elements:

Signal Word: N/A

Hazard Statements: N/A

Precautionary Statements: N/A

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Cerium (IV) Hydroxide

CAS#: 12014-56-1

EC#: 234-599-7

Common Names and Synonyms: Cerium(4+) tetrahydroxide, cerium tetrahydrate, ceric hydroxide

4 FIRST AID MEASURES

General Measures: Remove patient from area of exposure.

INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek medical attention.

INGESTION: Rinse mouth with water. Do not induce vomiting. Seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Remove contaminated clothing, brush material off skin, wash affected area with soap and water. Seek medical attention if symptoms persist.

EYES: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

Most Important Symptoms/Effects, Acute and Delayed: May cause irritation. See section 11 for more information.

Indication of Immediate Medical Attention and Special Treatment: No other relevant information available.

5 FIREFIGHTING MEASURES

Extinguishing Media: Use suitable extinguishing agent for surrounding materials and type of fire.

Unsuitable Extinguishing Media: No information available.

Specific Hazards Arising from the Material: May emit toxic fumes under fire conditions.

Special Protective Equipment and Precautions for Firefighters: Full face, self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Wear appropriate respiratory and protective equipment specified in section 8. Isolate spill area and provide ventilation. Avoid breathing dust or fume. Avoid contact with skin and eyes. Eliminate all sources of ignition.

Methods and Materials for Containment and Cleaning Up: Avoid raising dust. Scoop or vacuum up using a vacuum system equipped with a HEPA filter. Place in properly labeled closed containers.

Environmental Precautions: Do not flush to sewer, stream, or other bodies of water. Do not allow to enter drains or to be released to the environment.

7 HANDLING AND STORAGE

Precautions for Safe Handling: Handle in an enclosed, controlled process. Avoid creating dust. Provide adequate ventilation if dusts are created. Avoid breathing dust or fumes. Avoid contact with skin and eyes. Wash thoroughly before eating or smoking. See section 8 for information on personal protection equipment.

Conditions for Safe Storage, Including Any Incompatibilities: Store in a cool, dry, well-ventilated area. Store in a tightly sealed container. Protect from moisture. See section 10 for more information on incompatible materials.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:	**OSHA / PEL**:	**ACGIH / TLV**:
Cerium Hydroxide	No exposure limit established	No exposure limit established

Appropriate Engineering Controls: Handle in an enclosed, controlled process. Whenever possible the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Individual Protection Measures, Such as Personal Protective Equipment:

Respiratory Protection: Wear a NIOSH/MSHA approved respirator when high concentrations are present.

Eye Protection: Safety glasses

Skin Protection: Wear impermeable gloves, protective work clothing as necessary.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Form: Powder

Color: Pale yellow

Odor: Not determined

Odor Threshold: Not determined

pH: N/A

Melting Point: No data

Boiling Point: No data

Flash Point: N/A

Evaporation Rate: N/A

Flammability: No data

Upper Flammable Limit: No data

Lower Flammable Limit: No data

Vapor Pressure: No data

Vapor Density: N/A

Relative Density (Specific Gravity): No data

Solubility in H_2O: Insoluble

Partition Coefficient (n-octanol/water): Not determined

Autoignition Temperature: No data

Decomposition Temperature: No data

Viscosity: N/A

10 STABILITY AND REACTIVITY

Reactivity: No specific test data available.

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: No data

Conditions to Avoid: No data

Incompatible Materials: Acids, oxidizing agents.

Hazardous Decomposition Products: Cerium oxides.

11 TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, skin and eyes.

Symptoms of Exposure: May cause irritation to eyes and abraded skin. May cause irritation to lungs.

Acute and Chronic Effects:

Cerium Compounds: Cerium compounds are mildly to moderately toxic, depending on the particular compound. In an animal study, cerium carbonate, cerium fluoride, and cerium oxide were not found to be acutely toxic, showed no signs of dermal irritation, and were minimally irritating to eyes. Cerium chloride was found to be more acutely toxic (LD50 oral - rat - 1291 Ce/kg), and a severe skin irritant.

Rare Earth Compounds: In animal studies exposure to rare earths via inhalation or intratracheally has been proven to cause acute pneumonitis with neutrophil infiltration in the lung. Long-term exposure to

rare earths dust seems to cause pneumoconiosis in humans. Deposition and retention in the body following exposure to rare earth compounds is primarily determined by its chemical forms. Rare earth compounds did not show high acute toxicity by intravenous or intraperitoneal routes in animal mortality studies. There is evidence that rare earth ions (+3) function as Ca2+ antagonists.

Acute Toxicity: No data

Carcinogenicity: **NTP**: Not identified as carcinogenic **IARC**: Not identified as carcinogenic

To the best of our knowledge the chemical, physical and toxicological characteristics of the substance are not fully known.

12 ECOLOGICAL INFORMATION

Ecotoxicity: No data

Persistence and Degradability: No data

Bioaccumulative Potential: No data

Mobility in Soil: No data

Other Adverse Effects: Do not allow material to be released to the environment. No further relevant information available.

13 DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Product: Dispose of in accordance with Federal, State and Local regulations.

Packaging: Dispose of in accordance with Federal, State and Local regulations.

14 TRANSPORT INFORMATION

Shipping Regulations: Not regulated

UN Number: N/A

UN Proper Shipping Name: N/A

Transport Hazard Class: N/A

Packing Group: N/A

Marine Pollutant: No

15 REGULATORY INFORMATION

TSCA Listed: Yes

DSL Listed: Yes

Regulation (EC) No 1272/2008 (CLP): N/A

WHMIS 2015 Classification: N/A

HMIS Ratings: **Health**: 1 **Flammability**: 0 **Physical**: 0

NFPA Ratings: **Health**: 1 **Flammability**: 0 **Instability**: 0

Chemical Safety Assessment: A chemical safety assessment has not been carried out.

16 OTHER INFORMATION

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