

# SUPPLIER



## MATERIAL SAFETY DATA SHEET

**GENERATED** 03/15/2011, **REVISION** 05/19/2005, **SUPERCEDES REVISION** 12/03/1996,  
**DATE CREATED** 05/17/1990

### SECTION I - PRODUCT IDENTIFICATION

**Cerium oxide CeO<sub>2</sub>, powder and pieces**

**PRODUCT NAME:** Cerium oxide CeO<sub>2</sub>, powder and pieces

**PRODUCT CODE:** C-MSDS0046

**REFERENCE #:** 1306-38-3

#### **MANUFACTURER INFORMATION**

**COMPANY NAME:** Materion Advanced Chemicals Inc.  
 1316 W. St. Paul Avenue  
 Milwaukee, WI 53233

**EMERGENCY CONTACT:** CHEMTREC (800)424-9300

**ALTERNATE EMERGENCY CONTACT:** Materion Advanced Chemicals Inc. (414)289-9800

**CHEMICAL FAMILY:** Metal oxide

**CAS NUMBER:** 1306-38-3

**FORMULA:** CeO<sub>2</sub>

**MOLECULAR WEIGHT:** 172.12

#### **SYNONYMS**

Cerium oxide, cerium (IV) oxide, cerium dioxide, ceria, ceric dioxide, nidoral.

### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

**Cerium oxide CeO<sub>2</sub>, powder and pieces**

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TLV	Other Limits

Cerium oxide	1306-38-3	0.0 -100.0 %	NE	NE	NE
See SECTION IX- ADDITIONAL COMMENTS FOR COSHH Regulations	NA	0.0 -100.0 %			

### SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

#### Cerium oxide CeO<sub>2</sub>, powder and pieces

<b><u>PHYSICAL STATES:</u></b>	<input type="checkbox"/> Gas	<input type="checkbox"/> Liquid	<input checked="" type="checkbox"/> Solid
<b><u>MELTING POINT:</u></b>	2600.00 C		
<b><u>BOILING POINT:</u></b>			
<b><u>SPECIFIC GRAVITY (WATER = 1):</u></b>	7.65		
<b><u>VAPOR PRESSURE (VS. AIR OR MM HG):</u></b>	NA		
<b><u>VAPOR DENSITY (VS. AIR = 1):</u></b>	NA		
<b><u>EVAPORATION RATE (VS BUTYL ACETATE=1):</u></b>	NA		
<b><u>SOLUBILITY IN WATER:</u></b>	insoluble		
<b><u>SOLUBILITY NOTES</u></b>			
insoluble-dilute acids, soluble-H <sub>2</sub> SO <sub>4</sub>			
<b><u>PERCENT VOLATILE:</u></b>	N.A.		
<b><u>APPEARANCE AND ODOR</u></b>			

Brownish-white powder and pieces, no odor.

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

#### Cerium oxide CeO<sub>2</sub>, powder and pieces

<b><u>FLASH PT:</u></b>	N.A.	Method Used:	Unknown
<b><u>EXPLOSIVE LIMITS:</u></b>	LEL: NA	UEL:	NA
<b><u>EXTINGUISHING MEDIA</u></b>			

USE: Not applicable. Use suitable extinguishing media for surrounding materials and type of fire.

#### **SPECIAL FIRE FIGHTING PROCEDURES**

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

## **UNUSUAL FIRE AND EXPLOSION HAZARDS**

None recorded.

## **HAZARDOUS COMBUSTION PRODUCTS**

### **SECTION V - REACTIVITY DATA** **Cerium oxide CeO<sub>2</sub>, powder and pieces**

**STABILITY:** Unstable [ ☐ ] Stable [ ☒ ]

## **CONDITIONS TO AVOID - INSTABILITY**

None

## **INCOMPATIBILITY - MATERIALS TO AVOID**

Strong acids

## **HAZARDOUS DECOMPOSITION OR BYPRODUCTS**

None recorded.

**HAZARDOUS POLYMERIZATION:** Will occur [ ☐ ] Will not occur [ ☒ ]

## **CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION**

None

### **SECTION VI - HEALTH HAZARD DATA** **Cerium oxide CeO<sub>2</sub>, powder and pieces**

## **HEALTH HAZARDS (ACUTE AND CHRONIC)**

To the best of our knowledge the chemical, physical and toxicological properties of cerium oxide have not been thoroughly investigated and recorded.

Cerium is considered a rare earth metal. The symptoms of toxicity of the rare earth elements in animals include writhing, ataxia, labored respiration, walking on the toes with arched back and sedation. The rare earth elements exhibit low toxicity by ingestion exposure. However, the intraperitoneal route is highly toxic while the subcutaneous route is poison to moderately toxic. The production of skin and lung granulomas after exposure to them requires extensive protection to prevent such exposure. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

### **INHALATION:**

Acute: May cause irritation to the respiratory tract and mucous membrane. Dusts may cause asthma attacks and lung damage such as lung granulomas. Large doses may cause writhing, loss of muscle

coordination, labored respiration, sedation, hypotension and cardiovascular collapse.  
Chronic: Prolonged or repeated inhalation may cause writhing, loss of muscle coordination, labored respiration, sedation, hypotension and cardiovascular collapse.

#### INGESTION:

Acute: Low toxicity by ingestion. May cause gastrointestinal irritation.

Chronic: May affect the coagulation rate of the blood. SKIN: Acute: May cause irritation, rashes and skin granulomas.

Chronic: May cause dermatitis, sensitivity to heat, itching and skin lesions.

#### EYE:

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

TARGET ORGANS: May affect the respiratory system, blood and skin.

**CARCINOGENICITY:** NTP? No      IARC Monographs? No      OSHA Regulated? No

#### **CARCINOGENICITY/OTHER INFORMATION**

orl-rat LDLO: 1000 mg/kg

orl-rat LD50: >5 g/kg

#### **RECOMMENDED EXPOSURE LIMITS**

See "Section II"

#### **LD 50 / LC 50**

See "Carcinogenicity/Other Information"

#### **SIGNS AND SYMPTOMS OF EXPOSURE**

INHALATION: May cause writhing, ataxia, labored respiration, and sedation.

INGESTION: May cause nausea, vomiting, diarrhea, abdominal burning and cramp-like pain.

SKIN: May cause redness, itching and burning.

EYE: May cause redness, itching, burning and watering.

#### **MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE**

Pre-existing respiratory disorders.

#### **EMERGENCY AND FIRST AID PROCEDURES**

**INHALATION:** Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention if symptoms persist. **INGESTION:** Give 1-2 glasses of milk or water and induce vomiting; seek medical attention if symptoms persist. Never induce vomiting or give anything by mouth to an unconscious person.

**SKIN:** Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if irritation persists.

**EYE:** Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if irritation persists.

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

### **Cerium oxide CeO<sub>2</sub>, powder and pieces**

#### **STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Wear appropriate respiratory and protective equipment specified in section VIII-control measures. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

#### **WASTE DISPOSAL METHOD**

Dispose of in accordance with local, state and federal regulations.

#### **HAZARD LABEL INFORMATION:**

Store in cool, dry area      Store in tightly sealed container      Wash thoroughly after handling

#### **PRECAUTIONS TO BE TAKEN IN HANDLING**

None

#### **PRECAUTIONS TO BE TAKEN IN STORING**

#### **OTHER PRECAUTIONS**

None

## **SECTION VIII - CONTROL MEASURES**

### **Cerium oxide CeO<sub>2</sub>, powder and pieces**

#### **PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:**

NIOSH approved respirator      Impervious gloves      Safety glasses

#### **RESPIRATORY EQUIPMENT (SPECIFY TYPE)**

NIOSH/MSHA approved respirator

## **EYE PROTECTION**

Safety glasses

## **PROTECTIVE GLOVES**

Neoprene, PVC, butyl gloves

## **OTHER PROTECTIVE CLOTHING**

Protective gear suitable to prevent contamination

## **VENTILATION**

Local Exhaust: If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants to a minimum. Special: None

Mechanical (Gen): Good general ventilation is recommended. Other: None

## **WORK/HYGIENIC/MAINTENANCE PRACTICES**

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

## **SECTION IX - ADDITIONAL COMMENTS**

### **Cerium oxide CeO<sub>2</sub>, powder and pieces**

Control of Substances Hazardous to Health Regulations

EH40 Occupational Exposure Limits

Maximum Exposure Limit: NE

Occupational Exposure Standard: NE

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