



## Material Safety Data Sheet

Date Printed: 12/10/2007  
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Version 1.50

### Section 1 - Product and Company Information

**Product Name** Erbium(III) oxide, nanopowder, <100nm (BET), 99.9+%  
**Product Number** 637343  
**Brand** Aldrich Chemical

**Company** Sigma-Aldrich  
**Street Address** 3050 Spruce Street  
**City, State, Zip, Country** SAINT LOUIS, MO 63103 US  
**Technical Phone:** 800-325-5832  
**Fax:** 800-325-5052  
**Emergency Phone:** 314-776-6555

### Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
ERBIUM OXIDE	12061-16-4	No	235-045-7	

**Formula** Er<sub>2</sub>O<sub>3</sub>  
**Synonyms** Dierbium trioxide, Erbia, Erbium(III) oxide, Erbium(3+) oxide, Erbium sesquioxideERBIA

### Section 3 - Hazards Identification

#### Emergency Overview

Irritant.  
Irritating to eyes, respiratory system and skin.

#### HMIS Rating

Health: 2 Flammability: 0 Reactivity: 1

#### NFPA Rating

Health: 2 Flammability: 0 Reactivity: 1

For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

#### Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

#### Inhalation Exposure

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### Dermal Exposure

In case of contact, immediately wash skin with soap and copious amounts of water.

#### Eye Exposure

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

### Section 5 - Fire Fighting Measures

**Autoignition Temp:** N/A

#### Extinguishing Media Suitable

Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.

#### Firefighting

##### Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

##### Specific Hazard(s)

Emits toxic fumes under fire conditions.

### Section 6 - Accidental Release Measures

#### Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

#### Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

### Section 7 - Handling and Storage

#### Handling

##### User Exposure

Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### Storage

##### Suitable

Keep tightly closed. Store under nitrogen.

##### Incompatible Materials

Absorbs carbon dioxide from air.

#### Special Requirements

Store under inert gas. Air sensitive. Moisture sensitive.

### Section 8 - Exposure Controls / PPE

#### Engineering Controls

Safety shower and eye bath. Mechanical exhaust required.

#### Personal Protective Equipment

##### Respiratory

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows airpurifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

##### Hand

Compatible chemical-resistant gloves.

##### Eye

Chemical safety goggles.

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**General Hygiene Measures**  
Wash thoroughly after handling.

## Section 9 - Physical/Chemical Properties

<b>Appearance</b>		
<b>Physical State</b>		<b>Form</b>
Solid		Powder
<b>Molecular Weight</b>	382.52 AMU	
<b>pH</b>	N/A	
<b>BP/BP Range</b>	N/A	
<b>MP/MP Range</b>	N/A	
<b>Freezing Point</b>	N/A	
<b>Vapor Pressure</b>	N/A	
<b>Vapor Density</b>	N/A	
<b>Saturated Vapor Conc.</b>	N/A	
<b>SG/Density</b>	8.64 g/cm <sup>3</sup>	
<b>Bulk Density</b>	N/A	
<b>Odor Threshold</b>	N/A	
<b>Volatile%</b>	N/A	
<b>VOC Content</b>	N/A	
<b>Water Content</b>	N/A	
<b>Solvent Content</b>	N/A	
<b>Evaporation Rate</b>	N/A	
<b>Viscosity</b>	N/A	
<b>Partition Coefficient</b>	N/A	
<b>Decomposition Temp.</b>	N/A	
<b>Flash Point °F</b>	N/A	
<b>Flash Point °C</b>	N/A	
<b>Explosion Limits</b>	N/A	
<b>Flammability</b>	N/A	
<b>Autoignition Temp</b>	N/A	
<b>Solubility</b>	N/A	

N/A = not available

## Section 10 - Stability and Reactivity

<b>Stability</b>
<b>Stable</b>
Stable.
<b>Conditions to Avoid</b>
Moisture.
<b>Materials to Avoid</b>
Strong oxidizing agents, Carbon dioxide.
<b>Hazardous Decomposition Products</b>
<b>Hazardous Decomposition Products</b>
Carbon monoxide, Carbon dioxide

**Hazardous Polymerization**  
**Hazardous Polymerization**  
Will not occur.

## Section 11 - Toxicological Information

<b>Route of Exposure</b>
<b>Skin Contact</b>
Causes skin irritation.
<b>Skin Absorption</b>
May be harmful if absorbed through the skin.
<b>Eye Contact</b>
Causes eye irritation.
<b>Inhalation</b>
Material is irritating to mucous membranes and upper respiratory tractMay be harmful if inhaled.
<b>Ingestion</b>
May be harmful if swallowed.

**Signs and Symptoms of Exposure**  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**RTECS Number:** KD9250000

### Toxicity Data

Oral - Rat: > 5000 mg/kg (LD50)

### Irritation Data

Eyes - Rabbit 100 mg  
Remarks: Mild irritation effect

## Section 12 - Ecological Information

No data available.

## Section 13 - Disposal Considerations

**Appropriate Method of Disposal of Substance or Preparation**  
Contact a licensed professional waste disposal service to dispose of this material.  
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.  
Observe all federal, state, and local environmental regulations.

## Section 14 - Transport Information

**DOT**  
**Proper Shipping Name:** None  
**Non-Hazardous for Transport** This substance is considered to be nonhazardous for transport.  
**IATA**  
**Non-Hazardous for Air Transport** Non-hazardous for air transport.

## Section 15 - Regulatory Information

**EU Additional Classification**  
**Symbol of Danger:** Xi  
**Indication of Danger**  
Irritant.  
**Risk Statements** R: 36/37/38  
Irritating to eyes, respiratory system and skin.

**Safety Statements**

S: 26 36

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

**US Classification and Label Text****Indication of Danger**

Irritant.

**Risk Statements**

Irritating to eyes, respiratory system and skin.

**Safety Statements**

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

**United States Regulatory Information**

SARA Listed: No

TSCA Inventory Item: Yes

**Canada Regulatory Information****WHMIS Classification**

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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**Section 16 - Other Information**

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**Disclaimer**

For R&D use only. Not for drug, household or other uses.

**Warranty**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. SigmaAldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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