Materials Safety Data Sheet

Erbium Oxide Powder

1. Product and Company Identification

Product Name: Erbium Oxide
Formula: Er_2O_3
CAS: 12061-16-4
EC No.: 235-045-7
Synonyms: Dierbium Trioxide; Erbia; Erbium(III) oxide

Recommended Use: Laboratory chemicals, scientific research.
Uses advised against: No specific uses advised against have been identified.

Supplier: UltraPurMat Group Co., Ltd
Address: Room307, Building2, Tengfei Innovation Center, No38Gaoxin 6th Road, High-tech Zone, Xi'an Shaanxi China
Tel: +86-29-88993870
Email: sales@ulpmat.com
Website: www.ulpmat.com

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2. Hazards Identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 (CLP)
Skin corrosion/irritation Category 2 (H315).
Serious eye damage/eye irritation Category 2 (H319).
STOT-single exposure Category 3 (H335).

GHS Label elements, including precautionary statements
Pictogram:



Signal Word: Warning

Hazard statement(s):
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
Precautionary Statement(s):
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing. Response:
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards: Avoid generating dust.

3. Composition

Components	CAS	Classification (H)	Concentration
Erbium oxide (Er_2O_3)	12061-16-4	H315 H319 H335	<= 100%

4. First Aid Procedures

Description of first aid measures
General Treatment: If symptoms persist, call a physician.
Inhalation: Remove victim to fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.
Skin: Take off immediately all contaminated clothing. Rinse skin with water/shower. Seek medical attention.
Eyes: Rinse with pure water for at least 15 minutes. Remove contact lenses, if present and easy to do. Seek medical attention.
Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention if symptoms occur.
Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.
Indication of any immediate medical attention and special treatment needed
Provide symptomatic treatment based on the patient's condition and be aware that symptoms may be delayed.

5. Firefighting Measures

Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media: No information available
Special hazards arising from the substance or mixture
The product is not expected to be flammable under normal conditions of use. Fires involving surrounding materials may generate irritating fumes or airborne particles.
Advice for firefighters
Wear a self-contained breathing apparatus (pressure-demand, MSHA/NIOSH-approved or equivalent) and full protective gear. Fight the fire from a safe distance with adequate protection, prevent firefighting water from entering drains or watercourses, and collect contaminated firefighting water separately.
Further information
No data available

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
For non-emergency personnel: Remove persons to safety. Use personal protective equipment as required. Avoid dust formation. Remove all sources of ignition.
For emergency responders: Wear breathing apparatus if exposed to vapours/dust/spray/gases.
Environmental precautions
Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.
Methods and materials for containment and cleaning up
Prevent the material from entering drains and waterways. Collect the spilled powder mechanically using a suitable method that minimizes dust generation, and place it in a suitable container for recovery or disposal.
Reference to other sections
Refer to protective measures listed in Sections 8 and 13.

7. Handling and Storage

Precautions for safe handling
Recommendations: Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid dust formation. Do not get in eyes, on skin, or on clothing.
Conditions for safe storage, including any incompatibilities
Ventilation requirements: Keep containers tightly closed in a dry, cool and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids.
Specific end use(s)
Apart from the uses mentioned in section 1 no other specific uses are stipulated.

8. Exposure Controls/Personal Protection

Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Ensure that eye wash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) (European standard - EN 166) and face protection.

Skin protection

Protective gloves (The selected protective gloves shall comply with Regulation (EU) 2016/425 and EN ISO 374.) Wear appropriate protective gloves and clothing to prevent skin exposure. Wash hands thoroughly after handling.

Body Protection

Protective work clothing. Wear close-toed shoes and long sleeves/pants.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly. Large scale/emergency use: Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended filter type:Particle filter conforming to EN 143. Small scale/laboratory use: Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended half mask: Particle filtering EN 149:2001+A1:2009. When RPE is used a facepiece Fit Test should be conducted.

Control of environmental exposure

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

9. Physical and Chemical Characteristics

Information on basic physical and chemical properties

Appearance

Form: Solid. Powder

Colour: Pink

Odor: Odorless

pH: Not applicable

Melting point/range: 2400 °C

Boiling point/range: No data available

Flash point: No data available

Evaporation rate: Not applicable - Solid

Flammability (solid, gas): No data available

Upper/lower flammability or explosive limits: No data available

Vapor pressure: No data available

Relative density: 8.64 g/cm^3
Water solubility: Insoluble in water
Partition coefficient: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity: Not applicable
Other information
Molecular formula: Er_2O_3
Molecular weight: 382.52 g/mol

10. Stability and reactivity

Reactivity
No data available.
Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
No data available.
Conditions to avoid
Incompatible products. Exposure to moist air or water.
Incompatible materials
Strong oxidizing agents. Carbon dioxide (CO_2).
Hazardous decomposition products
Hazardous decomposition products: No data available. In the event of fire, refer to Section 5.

11. Toxicological Information

Information on toxicological effects
Acute toxicity
Oral LD50 - Rat - > 5,000 mg/kg.
Skin corrosion/irritation
No data available.
Serious eye damage/eye irritation
No data available.
Respiratory or skin sensitisation
No data available.
Germ cell mutagenicity
No data available.
Carcinogenicity
There are no known carcinogenic chemicals in this product.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. OSHA: Not listed.
Reproductive toxicity
No data available.

Specific target organ toxicity -single exposure

Inhalation: May cause respiratory irritation.

Specific target organ toxicity -repeated exposure

Not classified.

Aspiration hazard

Not applicable. Solid.

Additional Information

Endocrine-disrupting properties: This product does not contain any known or suspected endocrine disruptors.

12. Ecological Information

Toxicity

No data available.

Persistence and degradability

No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

Results of PBT and vPvB assessment

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment.

Other adverse effects

Ozone Depletion Potential: No data available. Endocrine Disruptor Information: This product does not contain any known or suspected endocrine disruptors.

13. Disposal Considerations

Waste treatment methods

Dispose of the material through an authorized waste management facility in accordance with applicable local, regional, national and international regulations. Where feasible, consider recovery or recycling by a facility equipped to handle the material. The appropriate disposal method should be determined based on the waste classification and applicable regulatory requirements.

14. Transportation Information

ADR

Not classified as dangerous goods.

IMDG

Not classified as dangerous goods.

IATA

Not classified as dangerous goods.

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) 1907/2006, REACH, Annex XIV list of substances subject to authorisation: Not applicable

Regulation (EC) 1907/2006, REACH, Annex XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances: Not applicable

Regulation (EC) 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants: Not applicable

Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

16. Other information

Revision Date:

2026-09-22

Version：

1.0

Disclaimer

The information of this safety data sheet is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

This Safety Data Sheet is prepared in accordance with Regulation (EC) No 1907/2006 (REACH), Annex II.