

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Europium Oxide, Enriched Europium Oxide
General Name	Europia
Chemical Family	Lanthanide
Chemical Formula	Eu ₂ O ₃
Molecular Weight	351.91
CAS No.	1308-96-9
RTECS No.	LE8053000
Supplier Address*	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
Telephone	+1 415-440-4433
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Emergency Phone Number (both supplier and manufacturer)	Infotrac/ +1 800-535-5053 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

Emergency Overview:

Potential Health Hazards: Avoid contact with eyes. Wash thoroughly after handling.

Physical Hazards: None anticipated

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 2 Flammability = 0 Reactivity = 0



HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 2 Flammability = 0 Physical Hazard = 0

HEALTH HAZARD	2
FLAMMABILITY	0
PHYSICAL HAZARD	0

Potential Health Effects:

<i>Eyes</i>	Dusts may be abrasive and irritating to the eyes and cause stinging, watering and redness.
<i>Skin</i>	Dusts may be abrasive and mildly irritating to the skin. No harmful effects from skin absorption are expected.
<i>Inhalation</i>	Low degree of toxicity by inhalation
<i>Ingestion</i>	Low degree of toxicity by ingestion
<i>Signs and Symptoms</i>	Repeated over-exposures to dusts may result in irritation of the respiratory tract, pneumoconiosis (dust-congested lungs), pneumonitis (lung inflammation), coughing and shortness of breath.
<i>Cancer</i>	No data available
<i>Target Organs</i>	Inadequate evidence available for this material.
<i>Developmental</i>	No data available
<i>Pre-Existing Medical Conditions</i>	Conditions aggravated by exposure may include respiratory (asthma-like) disorder.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	Europium Oxide
Chemical Formula:	Eu ₂ O ₃
Molecular Weight:	351.91
CAS No.:	1308-96-9
Active Ingredient:	Europium Oxide
Inert Ingredient:	Trace, other

4. FIRST-AID MEASURES

<i>Eyes</i>	If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.
<i>Skin</i>	First aid is not normally required. However, it is good practice to wash any chemical from the skin with soap and water.
<i>Inhalation</i>	First aid is not normally required. If breathing difficulties develop, move victim away from exposure and into fresh air. Seek immediate medical attention.
<i>Ingestion</i>	First aid is not normally required. However, if swallowed and symptoms develop, seek medical attention.
<i>Notes to Physician</i>	Lanthanides, because of their high densities, may produce striking abnormalities on chest x-rays. Lanthanides generally are not believed to be fibrogenic and the lesions typically have little or no clinical significance. However, occasional cases of suspected pneumoconiosis have been reported.

5. FIREFIGHTING MEASURES

Firefighting Instructions

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Isolate immediate hazard area, keep unauthorized personnel out. Contain spill if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Cool equipment exposed to fire with water, if it can be done with minimal risk.

Suitable Extinguishing Media

Use water, carbon dioxide, dry chemical fire extinguishing agents, dry sand or dry ground dolomite.

Autoignition Temperature

Not available

Flash Point

Not available

OSHA Flammability Class

Not available

LEL/UEL

Not available

Burn Rate (Solids)

Not available

Explosion limits (Lower/Upper)

Not available

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety

Stay away from spill so as to avoid airborne dust. Exposure concerns are limited to inhalation and, in the case of a very large all-surrounding spill, suffocation.

Containment of Spill

Spill should be contained if it can be done without risk.

Methods for Cleaning Up

Do not dispose of spill by dumping into public sewer or any other unauthorized waste treatment system. Spill should be swept up and properly prepared for disposal.

Environment and Regulatory Reporting

Should spilled material enter an unauthorized waste treatment system, contact the local authorities.

7. HANDLING AND STORAGE

Handling

Use appropriate respiratory protection when exposure exceeds the established limits. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

Storage

Store in a cool, dry place. Keep container closed when not in use. Protect container against physical damage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ingestion

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

Eye Contact

To avoid eye contact, wear safety glasses with side shields or chemical goggles.

Skin Contact

To avoid skin contact, wear rubber gloves, boots, long-sleeved shirts, long pants and head covering.

Respiratory Protection

To avoid inhalation wear dust mask or self-contained respiratory device.

Engineering Controls

Add ventilation capacity if current environment cannot maintain airborne concentrations below the established exposure limit.

Exposure Guidelines

TLV (ACGIH): 10 mg/m³, total dust

Other Protective Equipment

A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

<i>Form</i>	Powder
<i>Color</i>	White
<i>Odor</i>	None

Safety Data

pH:	Not available
Specific Gravity:	7.4200g/cm ³
Vapor Density:	Not available
Vapor Pressure (mm Hg):	Zero
Solubility in Water:	Insoluble
Melting Point:	2291 °C
Boiling Point:	4118 °C
Bulk Density:	0.6-1.0 g/cc
Molecular Formula:	Eu ₂ O ₃
Molecular Weight:	351.91

10. STABILITY AND REACTIVITY

<i>Chemical Stability</i>	Stable under normal temperatures and pressures.
<i>Conditions to Avoid</i>	Incompatible materials, strong oxidants.
<i>Incompatibilities with Other Materials</i>	Strong acids
<i>Hazardous Decomposition Products</i>	Not known
<i>Hazardous Polymerization</i>	Has not been reported.

11. TOXICOLOGICAL INFORMATION

<i>Eye</i>	Irritant effect
<i>Skin</i>	Irritant effect

Acute Toxicity

<i>Oral</i>	LD50 5000 mg/kg (rat)
<i>Dermal LD50</i>	No information is known.
<i>Inhalation LC50</i>	No information is known.
<i>Skin Sensitization</i>	No information is known.
<i>Chronic Toxicity Studies</i>	Lanthanides have been known to increase the blood coagulation rate. Exposure causes increased sensitivity to heat, itching and skin lesions.
<i>Mutagenicity Data</i>	No information is known.
<i>Reproductive/Teratology Data</i>	No information is known.
<i>Carcinogenicity Data</i>	Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

12. ECOLOGICAL INFORMATION

<i>Eco-acute Toxicity</i>	Acute toxicity is considered unlikely because of the existence of similar compounds in nature.
<i>Environmental Fate</i>	Not applicable

13. DISPOSAL CONSIDERATIONS

<i>Product</i>	This material, if discarded as produced, is not an RCRA "listed" hazardous waste. However, it should be fully characterized prior to disposal (40 CFR 261). Chemical or physical changes to the material may alter the disposal requirements. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.
<i>Contaminated Packaging</i>	Dispose of as unused product.

14. TRANSPORT INFORMATION

<i>Proper Shipping Name</i>	Europium Oxide
<i>Hazard Class</i>	Not classified as hazardous
<i>UN No.</i>	Not registered
<i>Special Information</i>	None
<i>Packing Group</i>	N/A

Contact ISOFLEX for any other transportation information.

15. REGULATORY INFORMATION

REACH No.	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards	Acute Health Hazard
Massachusetts Right to Know Components	No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right to Know Components	Europium(III) oxide / CAS No. 1308-96-9
New Jersey Right to Know Components	Europium(III) oxide / CAS No. 1308-96-9
California Prop. 65 Components	This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

<i>Prepared By</i>	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
<i>Issuing Date</i>	January 12, 2014
<i>Revision Date</i>	April 23, 2024
<i>Revision Number</i>	3
<i>Revision Note</i>	Update Supplier Address

ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)

NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

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