## Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

**Product Identifier:**

**Identification as on the label/Trade name:** Europium Oxide, Enriched Europium Oxide.
**Molecular weight:** 351.91
**Chemical formula:** $Eu_2O_3$
**Synonyms:** Europia.

**Details of the supplier of the Safety Data Sheet:**

Neonest AB
Storgatan 70C, Solna
SE-17152
Sweden

**Contact details:**

+46-76-219-9731

**24-hour Emergency Contact:**

Swedish Poisons Centre
Phone: 112 - Ask for Poisons Information, 112 – begär Giftinformation.

**Other International Contacts:**

CHEMTREC 24-hour: +1-703-741-5500 (US + Worldwide)
NHS: 111 (UK)
Charite: +49 30 450 531 000 (Netherlands)
INTCF: +34 917689800 (Spain)
CapTv: +33 1 40 05 48 48 (France)

## Section 2: Hazards Identification

**Classification of the substances or mixture:**

**The mixture is classified according to:** Regulation EC 1272/2008 [EU-GHS/CLP]

| Hazard classes/Hazard categories: | Hazard statement: |
|---|---|
| Skin Irritant (Category 2) | H315 |
| Eye Irritant (Category 2) | H319 |
| STOT SE (Category 3) | H335 |

**Label elements:**

**Hazard pictograms:**

**Signal Words:** Warning.

**Hazard Statements:**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
**Precautionary Statements:**
P270 Do not eat, drink or smoke when using this product.
P302 + P352 IF ON SKIN: Wash with plenty water.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
**Other hazards:** None known.

## Section 3: Composition/Information on Ingredients

**Substance/Mixture:** Substance.
**Ingredients:**

| **Substance name** (IUPAC/EC) | **CAS-No.** / **EC-No.** | **Molecular weight** | **Concentration % by weight** | **Classification** EC1272/2008 |
|---|---|---|---|---|
| Europium (III) oxide | 1308-96-9<br>7440-53-1<br>215-165-6 | 351.91 | >99% | Skin Irrit. 2 H315<br>Eye Irrit. 2 H319<br>STOT SE 3 H335 |

For explanation of abbreviations see Section 16.

## Section 4: First-Aid Measures

**Description of first aid measures:**

**In case of inhalation:** First aid is not normally required. If breathing difficulties develop, move victim away from exposure and into fresh air. Seek immediate medical attention.
**In case of skin contact:** If on skin, rinse well with running water for a minimum of 15 minutes.
**In case of eye contact:** 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.
**In case of ingestion:** First aid is not normally required. However, if swallowed and symptoms develop, seek medical attention.

**Most important symptoms and effects, both acute and delayed:**
**Inhalation:** Low degree of toxicity by inhalation.
**Eyes:** Dusts may be abrasive and irritating to the eyes and cause stinging, watering and redness.
**Skin contact:** Dusts may be abrasive and mildly irritating to the skin. No harmful effects from skin absorption are expected.
**Ingestion:** Low degree of toxicity by ingestion.
**Indication of any immediate medical attention and special treatment needed:** Treat symptomatically. Show this safety data sheet to a physician or emergency room.

## Section 5: Fire-Fighting Measures

**Extinguisher media:**

**Suitable extinguisher media:** Use water, carbon dioxide, dry chemical fire extinguishing agents, dry sand or dry ground dolomite.
**Unsuitable extinguishing media:** None known.
**Special hazards arising from the mixture:** None known.
**Advice for fire-fighters:** 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.
**Further information:** Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

## Section 6: Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:**

**Personal precautions:** Use personal protective equipment. Ensure adequate ventilation.
**Environmental precautions:** Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained.

**Methods for containment and cleaning up:**
**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.

**Reference to other sections:**
Treat recovered material as described in the section "Disposal considerations".

## Section 7: Handling and Storage

**Precautions for safe handling:**

**Advice on safe 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.
**Hygiene measures:** Do not eat, drink or smoke when using this product.

**Conditions for safe storage, including incompatibilities:**
**Requirements for storage areas and containers:** Store in a cool, dry place. Keep container closed when not in use. Protect container against physical damage.

## Section 8: Exposure Controls/Personal Protection

**Control parameters:**

**Occupational exposure limits:** TLV (ACGIH): 10 $mg/m^3$, total dust.

**Exposure controls:**

**Appropriate engineering controls:** Add ventilation capacity if current environment cannot maintain airborne concentrations below the established exposure limit. A source of clean water should be available in the work area for flushing eyes and skin.

**Individual protection measures, such as personal protective equipment:**

**Eye/face protection:** Use safety glasses. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.
**Hand protection:** Use chemical resistant gloves. Examples of preferred glove barrier materials include: Butyl rubber, Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, polyvinyl alcohol, Polyvinyl chloride.
**Body protection:** Wear protective clothing as appropriate.
**Respiratory protection:** To avoid inhalation wear dust mask or self-contained respiratory device.

## Section 9: Physical and Chemical Properties

**Information on basic physical and chemical properties**

**Appearance (form):** Solid (powder).
**Colour:** White.
**Odour:** Odourless.
**Odour threshold:** No data available.
**Molecular Weight:** 351.91
**pH (concentration):** No data available.
**Melting point/range (°C):** 2291 °C
**Boiling point/range (°C):** 4118 °C
**Freezing point (°C):** No data available.
**Flash point (°C):** No data available.
**Evaporation rate:** No data available.
**Flammability (solid, gas):** No data available.
**Ignition temperature (°C):** No data available.
**Upper/lower flammability/explosive limits:** No data available.
**Vapour pressure (20 °C):** 0
**Vapour density:** No data available.
**Relative density (25 °C):** 7.4200g/$cm^3$
**Water solubility (g/L) at 20 °C:** Insoluble.
**n-Octanol/Water partition coefficient**: No data available.
**Auto-ignition temperature:** No data available.
**Decomposition temperature:** No data available.
**Viscosity, dynamic (mPa s):** No data available.
**Explosive properties:** The substance or mixture is not classified as explosive.
**Oxidising properties:** The substance or mixture is not classified as oxidizing.

## Section 10: Stability and Reactivity

**Reactivity:** No dangerous reaction known under conditions of normal use.
**Chemical stability:** Stable under normal conditions.
**Possibility of hazardous reactions:** No dangerous reaction known under conditions of normal use.
**Conditions to avoid:** Strong oxidants.

**Incompatible materials:** Strong acids.
**Hazardous decomposition products:** None known.

## Section 11: Toxicological Information

**Information on toxicological effects:**

**Acute Toxicity:**
$LD_{50}$ > 5000 mg/kg (rat).

**Classification according to GHS (1272/2008/EG, CLP)**

**Skin corrosion/irritation:**
Causes skin irritation.
**Serious eye damage/eye irritation:**
Causes serious eye irritation.
**Respiratory or skin sensitisation:**
Not classified based on available information.
**Germ cell mutagenicity:**
Not classified based on available information.
**Carcinogenicity:**
Not classified based on available information.
**Reproductive toxicity:**
Not classified based on available information.
**Specific target organ toxicity – single exposure (STOT):**
May cause respiratory irritation.
**Specific target organ toxicity (STOT) – repeated exposure:**
Not classified based on available information.
**Aspiration toxicity:**
Not classified based on available information.

## Section 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& vPvB assessment:** Not relevant.
**Other adverse effects:** No data available.

## Section 13: Disposal Considerations

**Waste treatment methods:** This material, if discarded as produced, is not an RCRA “listed” hazardous waste. However, it should be fully characterized prior to disposal. 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.

## Section 14: Transport Information

**UN number:** Not regulated as a dangerous good.
**UN proper shipping name:** Not regulated as a dangerous good.
**Transport hazard class(es):** Not regulated as a dangerous good.
**Packing group:** Not regulated as a dangerous good.
**Environmental hazards:** Not regulated as a dangerous good.
**Special precautions for user:** Not dangerous goods in the meaning of ADR/RID, ADN, IMDG-Code, ICAO/IATA-DGR.
**Transport in bulk according to Annex II of Marpol and the IBC Code:** Not applicable.

## Section 15: Regulatory Information

**EU regulations:**

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**
Not listed.
**Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I**
Not listed.
**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**
Not listed.
**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**
Not listed.
**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**
Not listed.
**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**
Not listed.
**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry**
Not listed.
**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**
Not listed.

**Authorisations:**
**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**
Not listed.

**Restrictions on use:**
**Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use**
Not regulated.
**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**
Not listed.
**Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work**
Not regulated.
**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding.**
Not regulated.

**Other EU regulations:**

**Directive 2012/18/EU on major accident hazards involving dangerous substances**

Not listed.

**Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.**

Always applicable.

**Directive 94/33/EC on the protection of young people at work**

Not listed.

**Other regulations:** The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

**US Federal Regulations:**

**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

**US State Regulations:**

**Mississippi 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.

**National regulations:** Follow national regulation for work with chemical agents.

**Chemical safety assessment:** No Chemical Safety Assessment has been carried out.

## Section 16: Other Information

**List of abbreviations:**

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

**References:**

Not available.

**Full text of any H-statements not written out in full under Sections 2 to 15:**

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

**Revision information:**

None.

**Training information:**

Follow training instructions when handling this material.

**Further Information:**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.