

ALFAA36244

## Lutetium(III) oxide

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

|                               |                                                                                                                                                                                                                                                                    |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 产品说明:<br>Product Description: | 氧化镱(III)<br>Lutetium(III) oxide                                                                                                                                                                                                                                    |
| Cat No. :                     | 36244                                                                                                                                                                                                                                                              |
| Synonyms                      | Lutetium oxide                                                                                                                                                                                                                                                     |
| CAS No                        | 12032-20-1                                                                                                                                                                                                                                                         |
| Molecular Formula             | Lu <sub>2</sub> O <sub>3</sub>                                                                                                                                                                                                                                     |
| Supplier                      | Avocado Research Chemicals Ltd.<br>(Part of Thermo Fisher Scientific)<br>Shore Road, Heysham<br>Lancashire, LA3 2XY,<br>United Kingdom<br>Office Tel: +44 (0) 1524 850506<br>Office Fax: +44 (0) 1524 850608                                                       |
| Emergency Telephone Number    | For information <b>US</b> call: 001-800-227-6701 / <b>Europe</b> call: +32 14 57 52 11<br>Emergency Number <b>US</b> :001-201-796-7100 / <b>Europe</b> : +32 14 57 52 99<br><b>CHEMTREC</b> Tel. No. <b>US</b> :001-800-424-9300 / <b>Europe</b> :001-703-527-3887 |
| E-mail address                | begel.sdsdesk@thermofisher.com                                                                                                                                                                                                                                     |
| Recommended Use               | Laboratory chemicals.                                                                                                                                                                                                                                              |
| Uses advised against          | No Information available                                                                                                                                                                                                                                           |

### SECTION 2. HAZARD IDENTIFICATION

|                                    |                     |                  |
|------------------------------------|---------------------|------------------|
| Physical State<br>Powder Solid     | Appearance<br>White | Odor<br>Odorless |
| Emergency Overview<br>Hygroscopic. |                     |                  |

#### Classification of the substance or mixture

Based on available data, the classification criteria are not met

#### Label Elements

None required

#### Response

P362 + P364 - Take off contaminated clothing and wash it before reuse

#### Physical and Chemical Hazards

Hygroscopic.

#### Health Hazards

The product contains no substances which at their given concentration are considered to be hazardous to health.

#### Environmental hazards

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Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Is not likely mobile in the environment due its low water solubility. Spillage unlikely to penetrate soil.

This product does not contain any known or suspected endocrine disruptors.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

| Component                                        | CAS No     | Weight % |
|--------------------------------------------------|------------|----------|
| Lutetium oxide (Lu <sub>2</sub> O <sub>3</sub> ) | 12032-20-1 | 100      |

**SECTION 4. FIRST AID MEASURES****Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.

**Inhalation**

Remove to fresh air. Get medical attention. If not breathing, give artificial respiration.

**Ingestion**

Do NOT induce vomiting. Get medical attention.

**Most important symptoms and effects**

No information available.

**Self-Protection of the First Aider**

No special precautions required.

**Notes to Physician**

Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

**Extinguishing media which must not be used for safety reasons**

No information available.

**Specific Hazards Arising from the Chemical**

Non-combustible.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Avoid dust formation. Use personal protective equipment as required. Ensure adequate ventilation.

**Environmental Precautions**

See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up**

Sweep up and shovel into suitable containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

**SECTION 7. HANDLING AND STORAGE****Handling**

Avoid contact with skin and eyes. Do not breathe dust. Avoid contact with skin and clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not ingest. If swallowed then seek immediate medical assistance. Wash thoroughly after handling.

**Storage**

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep under nitrogen.

**Specific Use(s)**

Use in laboratories

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control Parameters****Monitoring methods**

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

**Exposure Controls****Engineering Measures**

None under normal use conditions.

**Personal protective equipment****Eye Protection**

Wear safety glasses with side shields (or goggles) (European standard - EN 166)

**Hand Protection**

Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments        |
|----------------|-------------------|-----------------|-------------|-----------------------|
| Natural rubber | See manufacturers | -               | EN 374      | (minimum requirement) |
| Nitrile rubber | recommendations   |                 |             |                       |
| Neoprene       |                   |                 |             |                       |
| PVC            |                   |                 |             |                       |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure

**Respiratory Protection**

No protective equipment is needed under normal use conditions.

**Large scale/emergency use**

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits

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are exceeded or if irritation or other symptoms are experienced

**Recommended Filter type:** Particle filter**Small scale/Laboratory use**

Maintain adequate ventilation

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

No information available.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

|                                                |                                |                                          |
|------------------------------------------------|--------------------------------|------------------------------------------|
| <b>Appearance</b>                              | White                          |                                          |
| <b>Physical State</b>                          | Powder Solid                   |                                          |
| <b>Odor</b>                                    | Odorless                       |                                          |
| <b>Odor Threshold</b>                          | No data available              |                                          |
| <b>pH</b>                                      | No information available       |                                          |
| <b>Melting Point/Range</b>                     | No data available              |                                          |
| <b>Softening Point</b>                         | No data available              |                                          |
| <b>Boiling Point/Range</b>                     | No information available       |                                          |
| <b>Flash Point</b>                             | No information available       | <b>Method -</b> No information available |
| <b>Evaporation Rate</b>                        | Not applicable                 | Solid                                    |
| <b>Flammability (solid,gas)</b>                | No information available       |                                          |
| <b>Explosion Limits</b>                        | No data available              |                                          |
| <b>Vapor Pressure</b>                          | No information available       |                                          |
| <b>Vapor Density</b>                           | Not applicable                 | Solid                                    |
| <b>Specific Gravity / Density</b>              | 9.420                          |                                          |
| <b>Bulk Density</b>                            | No data available              |                                          |
| <b>Water Solubility</b>                        | Insoluble                      |                                          |
| <b>Solubility in other solvents</b>            | No information available       |                                          |
| <b>Partition Coefficient (n-octanol/water)</b> |                                |                                          |
| <b>Autoignition Temperature</b>                | No data available              |                                          |
| <b>Decomposition Temperature</b>               | No data available              |                                          |
| <b>Viscosity</b>                               | Not applicable                 | Solid                                    |
| <b>Explosive Properties</b>                    | No information available       |                                          |
| <b>Oxidizing Properties</b>                    | No information available       |                                          |
| <b>Molecular Formula</b>                       | Lu <sub>2</sub> O <sub>3</sub> |                                          |
| <b>Molecular Weight</b>                        | 397.94                         |                                          |

**SECTION 10. STABILITY AND REACTIVITY**

|                                 |                                                                              |
|---------------------------------|------------------------------------------------------------------------------|
| <b>Stability</b>                | Stable under normal conditions. Hygroscopic.                                 |
| <b>Hazardous Reactions</b>      | No information available.                                                    |
| <b>Hazardous Polymerization</b> | Hazardous polymerization does not occur.                                     |
| <b>Conditions to Avoid</b>      | Incompatible products. Exposure to moisture.                                 |
| <b>Materials to avoid</b>       | Strong oxidizing agents. Carbon dioxide (CO <sub>2</sub> ). Oxidizing agent. |

**Hazardous Decomposition Products** Thermal decomposition can lead to release of irritating gases and vapors.**SECTION 11. TOXICOLOGICAL INFORMATION**

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|                                                  |                                                             |
|--------------------------------------------------|-------------------------------------------------------------|
| <b>Product Information</b>                       | No acute toxicity information is available for this product |
| <b>(a) acute toxicity;</b>                       |                                                             |
| <b>(b) skin corrosion/irritation;</b>            | No data available                                           |
| <b>(c) serious eye damage/irritation;</b>        | No data available                                           |
| <b>(d) respiratory or skin sensitization;</b>    |                                                             |
| Respiratory                                      | No data available                                           |
| Skin                                             | No data available                                           |
| <b>(e) germ cell mutagenicity;</b>               | No data available                                           |
| <b>(f) carcinogenicity;</b>                      | No data available                                           |
|                                                  | There are no known carcinogenic chemicals in this product   |
| <b>(g) reproductive toxicity;</b>                | No data available                                           |
| <b>(h) STOT-single exposure;</b>                 | No data available                                           |
| <b>(i) STOT-repeated exposure;</b>               | No data available                                           |
| Target Organs                                    | No information available.                                   |
| <b>(j) aspiration hazard;</b>                    | Not applicable                                              |
|                                                  | Solid                                                       |
| <b>Symptoms / effects,both acute and delayed</b> | No information available                                    |

**SECTION 12. ECOLOGICAL INFORMATION**

|                                        |                                                                                                                             |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Ecotoxicity effects</b>             | Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants. |
| <b>Persistence and Degradability</b>   |                                                                                                                             |
| Persistence                            | Insoluble in water.                                                                                                         |
| Degradability                          | Not relevant for inorganic substances.                                                                                      |
| <b>Bioaccumulative Potential</b>       | May have some potential to bioaccumulate                                                                                    |
| <b>Mobility in soil</b>                | Spillage unlikely to penetrate soil Is not likely mobile in the environment due its low water solubility                    |
| <b>Endocrine Disruptor Information</b> | This product does not contain any known or suspected endocrine disruptors                                                   |
| <b>Persistent Organic Pollutant</b>    | This product does not contain any known or suspected substance                                                              |
| <b>Ozone Depletion Potential</b>       | This product does not contain any known or suspected substance                                                              |

**SAFETY DATA SHEET**

Lutetium(III) oxide

**SECTION 13. DISPOSAL CONSIDERATIONS**

|                                            |                                                                                                                                                                                                                             |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waste from Residues/Unused Products</b> | Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification. |
| <b>Contaminated Packaging</b>              | Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.                                                                                                                  |
| <b>Other Information</b>                   | Waste codes should be assigned by the user based on the application for which the product was used.                                                                                                                         |

**SECTION 14. TRANSPORT INFORMATION**

|                                     |                                 |
|-------------------------------------|---------------------------------|
| <b>Road and Rail Transport</b>      | Not Regulated                   |
| <b>IMDG/IMO</b>                     | Not regulated                   |
| <b>IATA</b>                         | Not regulated                   |
| <b>Special Precautions for User</b> | No special precautions required |

**SECTION 15. REGULATORY INFORMATION****International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

| Component              | The Inventory of Hazardous Chemicals (2015 Edition) | List of dangerous goods GB 12268 - 2012 | IECSC | EINECS    | TSCA | DSL | PICCS | ENCS | ISHL | AICS | KECL     |
|------------------------|-----------------------------------------------------|-----------------------------------------|-------|-----------|------|-----|-------|------|------|------|----------|
| Lutetium oxide (Lu2O3) | -                                                   | -                                       | X     | 234-764-3 | X    | X   | -     | X    | X    | X    | KE-22646 |

**National Regulations****SECTION 16. OTHER INFORMATION**

|                         |                                             |
|-------------------------|---------------------------------------------|
| <b>Prepared By</b>      | Health, Safety and Environmental Department |
| <b>Creation Date</b>    | 22-Sep-2009                                 |
| <b>Revision Date</b>    | 25-Jul-2026                                 |
| <b>Revision Summary</b> | Not applicable.                             |

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

**Legend**

## Lutetium(III) oxide

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**PNEC** - Predicted No Effect Concentration

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Disclaimer**

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**End of Safety Data Sheet**