SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product form</td>
<td>Substance</td>
</tr>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Substance name</td>
<td>LANTHANUM 6,6,7,7,8,8,8-HEPTAFLUORO-2,2-DIMETHYL-3,5-OCTANEDIONATE</td>
</tr>
<tr>
<td>Product code</td>
<td>AKL418</td>
</tr>
<tr>
<td>Formula</td>
<td>C30H30F21LaO6</td>
</tr>
<tr>
<td>Synonyms</td>
<td>LANTHANUM FOD TRIS(6,6,7,7,8,8-HEPTAFLUORO-2,2-DIMETHYL-3,5-OCTANEDIONATO) LANTHANUM TRIS(6,6,7,7,8,8,8-HEPTAFLUORO-2,2-DIMETHYLOCTANE-3,5-DIONATO-O,O') LANTHANUM</td>
</tr>
<tr>
<td>Chemical family</td>
<td>RARE EARTH COMPOUND</td>
</tr>
</tbody>
</table>

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture: Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 2</td>
<td>H315</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2</td>
<td>H319</td>
</tr>
</tbody>
</table>

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

<table>
<thead>
<tr>
<th>Labeling (CLP)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard pictograms (CLP)</td>
<td>![Image]</td>
</tr>
<tr>
<td>Signal word (CLP)</td>
<td>Warning</td>
</tr>
<tr>
<td>Hazard statements (CLP)</td>
<td>H315 - Causes skin irritation.</td>
</tr>
</tbody>
</table>
LANTHANUM 6,6,7,7,8,8,8-HEPTAFLUORO-2,2-DIMETHYL-3,5-OCTANEDIONATE
Safety Data Sheet

Precautionary statements (CLP):
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P264 - Wash hands thoroughly after handling.
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
- P332+P313 - If skin irritation occurs: Get medical advice/attention.
- P337+P313 - If eye irritation persists: Get medical advice/attention.
- P370 - Do not touch with skin and eyes.
- P380 - Keep container tightly closed.

2.3. Other hazards
No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mono-constituent</td>
<td>LANTHANUM 6,6,7,7,8,8-HEPTAFLUORO-2,2-DIMETHYL-3,5-OCTANEDIONATE</td>
<td>19106-89-9</td>
<td>242-822-4</td>
<td>95 - 100</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general:
Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation:
Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact:
Wash with plenty of water/…. Get medical advice/attention.

First-aid measures after eye contact:
Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion:
Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation:
May cause irritation to the respiratory tract.

Symptoms/effects after skin contact:
Causes skin irritation.

Symptoms/effects after eye contact:
Causes serious eye irritation.

Symptoms/effects after ingestion:
May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Unsuitable extinguishing media:
None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard:
Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters

Firefighting instructions:
Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.

Protection during firefighting:
Do not enter fire area without proper protective equipment, including respiratory protection. Avoid contact with skin and eyes. Do not breathe dust.

Print date: 09/04/2019
EN (English) SDS ID: AKL418
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Protective equipment : Wear protective equipment as described in Section 8.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling : Avoid contact with skin and eyes. Do not breathe dust. Avoid dust formation. Provide local exhaust or general room ventilation to minimize exposure to dust.
Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions : Keep container tightly closed.
Storage area : Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls:
Provide local exhaust or general room ventilation.

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:
Neoprene or nitrile rubber gloves

Eye protection:
Chemical goggles. Contact lenses should not be worn

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified dust and mist (teal cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state : Solid
### Appearance
Solid.

### Molecular mass
1024.44 g/mol

### Colour
White.

### Odour
No data available

### Odour threshold
No data available

### Refractive index
No additional information available

### pH
No data available

### Relative evaporation rate (butylacetate=1)
No data available

### Melting point
160 - 165 °C

### Freezing point
No data available

### Boiling point
No data available

### Flash point
No data available

### Auto-ignition temperature
No data available

### Decomposition temperature
No data available

### Flammability (solid, gas)
No data available

### Vapour pressure
< 0.01 mm Hg @ 25°C

### Relative vapour density at 20 °C
No data available

### Relative density
> 1

### % Volatiles
< 3%

### Solubility
Insoluble in water.

Organic solvent:
Soluble: acetonitrile, chloroform

### Log Pow
No data available

### Log Kow
No data available

### Viscosity, kinematic
No data available

### Viscosity, dynamic
No data available

### Explosive properties
No data available

### Oxidising properties
No data available

### Explosive limits
No data available

### 9.2. Other information
No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity
No additional information available

#### 10.2. Chemical stability
Stable.

#### 10.3. Possibility of hazardous reactions
Material decomposes slowly in contact with air by reaction with water and carbon dioxide.

#### 10.4. Conditions to avoid
No additional information available

#### 10.5. Incompatible materials
No additional information available

#### 10.6. Hazardous decomposition products

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

- **Acute toxicity**: Not classified
- **Skin corrosion/irritation**: Causes skin irritation.
- **Serious eye damage/irritation**: Causes serious eye irritation.
- **Respiratory or skin sensitisation**: Not classified
- **Germ cell mutagenicity**: Not classified
- **Carcinogenicity**: Not classified

None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.
LANTHANUM 6,6,7,7,8,8,8-HEPTAFLUORO-2,2-DIMETHYL-3,5-OCTANEDIONATE
Safety Data Sheet

Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after inhalation : May cause irritation to the respiratory tract.
Symptoms/effects after skin contact : Causes skin irritation.
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects after ingestion : May be harmful if swallowed.
Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Sewage disposal recommendations : Do not dispose of waste into sewer.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of solid materials or residues at a licensed site.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : Not applicable
UN-No. (IMDG) : Not applicable
UN-No. (IATA) : Not applicable
UN-No. (ADN) : Not applicable
UN-No. (RID) : Not applicable

14.2. UN proper shipping name
Proper Shipping Name (ADR) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable
Proper Shipping Name (ADN) : Not applicable
Proper Shipping Name (RID) : Not applicable

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : Not applicable

IMDG
Transport hazard class(es) (IMDG) : Not applicable
LANTHANUM 6,6,7,7,8,8,8-HEPTAFLUORO-2,2-DIMETHYL-3,5-OCTANEDIONATE
Safety Data Sheet

IATA
Transport hazard class(es) (IATA) : Not applicable

ADN
Transport hazard class(es) (ADN) : Not applicable

RID
Transport hazard class(es) (RID) : Not applicable

14.4. Packing group
Packing group (ADR) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user
- Overland transport
Not applicable

- Transport by sea
Not applicable

- Air transport
Not applicable

- Inland waterway transport
Not applicable

- Rail transport
Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
LANTHANUM 6,6,7,7,8,8,8-HEPTAFLUORO-2,2-DIMETHYL-3,5-OCTANEDIONATE is not on the REACH Candidate List
LANTHANUM 6,6,7,7,8,8,8-HEPTAFLUORO-2,2-DIMETHYL-3,5-OCTANEDIONATE is not on the REACH Annex XIV List
LANTHANUM 6,6,7,7,8,8,8-HEPTAFLUORO-2,2-DIMETHYL-3,5-OCTANEDIONATE is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

% Volatiles : < 3 %

15.1.2. National regulations

Germany
12th Ordinance Implementing the Federal Immission Control Act - 12 BlmSchV : Is not subject of the 12. BlmSchV (Hazardous Incident Ordinance)
Netherlands

SZW-list van kankerverwekkende stoffen: The substance is not listed
SZW-list van mutagene stoffen: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling: The substance is not listed

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

- Abbreviations: ND: Not Determined, No Data; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information:

Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

- **Eye Irrit. 2**: Serious eye damage/eye irritation, Category 2
- **Skin Irrit. 2**: Skin corrosion/irritation, Category 2
- **H315**: Causes skin irritation.
- **H319**: Causes serious eye irritation.

SDS EU (REACH Annex II) - Custom

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

© 2019 Gelest Inc. Morrisville, PA 19067