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

1.1. **Product identifier**

<table>
<thead>
<tr>
<th><strong>Product form</strong></th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
<td>Solid</td>
</tr>
<tr>
<td><strong>Substance name</strong></td>
<td>LITHIUM ISOPROPOXIDE</td>
</tr>
<tr>
<td><strong>Product code</strong></td>
<td>AKL459</td>
</tr>
<tr>
<td><strong>Formula</strong></td>
<td>C3H7LiO</td>
</tr>
<tr>
<td><strong>Synonyms</strong></td>
<td>2-PROPANOL, LITHIUM SALT; LITHIUM ISOPROPYLATE</td>
</tr>
<tr>
<td><strong>Chemical family</strong></td>
<td>METAL ALCOHOLATE</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**

Classification according to Regulation (EC) No. 1272/2008 [CLP]

| **Flammable solids, Category 2** | H228 |
| **Skin corrosion/irritation, Category 1B** | H314 |
| **Serious eye damage/eye irritation, Category 1** | H318 |

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. **Label elements**

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

<table>
<thead>
<tr>
<th><strong>Hazard pictograms (CLP)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS02</td>
</tr>
</tbody>
</table>

Signal word (CLP): Danger

Hazard statements (CLP): H228 - Flammable solid.

H314 - Causes severe skin burns and eye damage.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
Substance type: Mono-constituent
Name: LITHIUM ISOPROPXOIDE
CAS-No.: 2388-10-5

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium isopropoxide</td>
<td>(CAS-No.) 2388-10-5 (EC-No.) 424-140-0</td>
<td>95 - 100</td>
<td>Flam. Sol. 2, H228 Skin Corr. 1B, H314 Eye Dam. 1, H318</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 immediate 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 immediate 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: Causes severe skin burns and eye damage.
Symptoms/effects after inhalation: Inhalation will cause sneezing, irritation and burns.
Symptoms/effects after skin contact: Causes (severe) skin burns. If skin and air are dry, powder on skin may not cause irritation or burns. Worker will notice a slippery feeling on washing. However, if moisture is present, the powder can cause severe burns.
Symptoms/effects after eye contact: Causes serious eye damage.
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: Dry chemical. Dry soda ash. Dry sodium chloride.
Unsuitable extinguishing media: Do not use water or carbon dioxide.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Flammable solid. Irritating fumes and caustic 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. Protect against caustic dust, smoke and water.
### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

**General measures**: Eliminate ignition sources. Use special care to avoid static electric charges.

**For non-emergency personnel**

**Protective equipment**: Wear protective equipment as described in Section 8.

**Emergency procedures**: Evacuate unnecessary personnel.

**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”.

**Emergency procedures**: Evacuate area.

#### 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**: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

#### 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

**Additional hazards when processed**: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Precautions for safe handling**: Avoid contact with skin and eyes. Do not breathe dust. Avoid dust formation. Ground containers when handling powder. Use only outdoors or in a well-ventilated area. Use only non-sparking tools.

**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

**Technical measures**: Use explosion-proof electrical equipment.

**Storage conditions**: Keep container tightly closed. Store locked up. Store under dry nitrogen or argon in sealed containers.


**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 or face shield. Contact lenses should not be worn
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Skin and body protection:
Wear suitable protective clothing. Long-sleeved fire-resistant lab uniform or coverall is recommended.

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified caustic organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>9.1. Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
</tr>
<tr>
<td>Appearance</td>
</tr>
<tr>
<td>Molecular mass</td>
</tr>
<tr>
<td>Colour</td>
</tr>
<tr>
<td>Odour</td>
</tr>
<tr>
<td>Odour threshold</td>
</tr>
<tr>
<td>Refractive index</td>
</tr>
<tr>
<td>pH</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
</tr>
<tr>
<td>Melting point</td>
</tr>
<tr>
<td>Freezing point</td>
</tr>
<tr>
<td>Boiling point</td>
</tr>
<tr>
<td>Flash point</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
</tr>
<tr>
<td>Decomposition temperature</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
</tr>
<tr>
<td>Vapour pressure</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
</tr>
<tr>
<td>Relative density</td>
</tr>
<tr>
<td>Solubility</td>
</tr>
<tr>
<td>Log Pow</td>
</tr>
<tr>
<td>Log Kow</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
</tr>
<tr>
<td>Explosive properties</td>
</tr>
<tr>
<td>Oxidising properties</td>
</tr>
<tr>
<td>Explosive limits</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9.2. Other information</th>
</tr>
</thead>
<tbody>
<tr>
<td>No additional information available</td>
</tr>
</tbody>
</table>

SECTION 10: Stability and reactivity

<table>
<thead>
<tr>
<th>10.1. Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>No additional information available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.2. Chemical stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable under nitrogen or argon in sealed containers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.3. Possibility of hazardous reactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material decomposes slowly in contact with moist air and rapidly in contact with water.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.4. Conditions to avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat. Open flame. Sparks.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.5. Incompatible materials</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>10.6. Hazardous decomposition products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caustic organic vapors. Isopropanol. Lithium hydroxide.</td>
</tr>
</tbody>
</table>

SECTION 11: Toxicological information

<table>
<thead>
<tr>
<th>11.1. Information on toxicological effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
</tr>
</tbody>
</table>
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Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/irritation: Causes serious eye damage.
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified

Symptoms/effects after inhalation: Inhalation will cause sneezing, irritation and burns.
Symptoms/effects after skin contact: Causes (severe) skin burns. If skin and air are dry, powder on skin may not cause irritation or burns. Worker will notice a slippery feeling on washing. However, if moisture is present, the powder can cause severe burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: May be harmful if swallowed.
Reason for classification: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: Toxic to aquatic life.
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
Other adverse effects: This substance may be hazardous to the environment.

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 contents/container to licensed waste disposal facility.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

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

<table>
<thead>
<tr>
<th>UN-No. (ADR)</th>
<th>UN-No. (IMDG)</th>
<th>UN-No. (IATA)</th>
<th>UN-No. (ADN)</th>
<th>UN-No. (RID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2925</td>
<td>2925</td>
<td>2925</td>
<td>2925</td>
<td>2925</td>
</tr>
</tbody>
</table>

14.2. UN proper shipping name
Proper Shipping Name (ADR) : FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.
Proper Shipping Name (IMDG) : FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.
Proper Shipping Name (IATA) : Flammable solid, corrosive, organic, n.o.s.
Proper Shipping Name (ADN) : FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.
Proper Shipping Name (RID) : FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.
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| Transport document description (ADR) | : UN 2925 FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S. (LITHIUM ISOPROPOXIDE), 4.1 (8), II, (E) |
| Transport document description (IMDG) | : UN 2925 FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S. (LITHIUM ISOPROPOXIDE), 4.1 (8), II |
| Transport document description (IATA) | : UN 2925 Flammable solid, corrosive, organic, n.o.s. (LITHIUM ISOPROPOXIDE), 4.1, II |
| Transport document description (ADN) | : UN 2925 FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S. (LITHIUM ISOPROPOXIDE), 4.1 (8), II |
| Transport document description (RID) | : UN 2925 FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S. (LITHIUM ISOPROPOXIDE), 4.1 (8), II |

14.3. Transport hazard class(es)

| ADR | Transport hazard class(es) (ADR) : 4.1 (8) |
| Danger labels (ADR) : 4.1, 8 |

| IMDG | Transport hazard class(es) (IMDG) : 4.1 (8) |
| Danger labels (IMDG) : 4.1, 8 |

| IATA | Transport hazard class(es) (IATA) : 4.1 (8) |
| Hazard labels (IATA) : 4.1, 8 |

| ADN | Transport hazard class(es) (ADN) : 4.1 (8) |
| Danger labels (ADN) : 4.1, 8 |

| RID | Transport hazard class(es) (RID) : 4.1 (8) |
| Danger labels (RID) : 4.1, 8 |

14.4. Packing group

| Packing group (ADR) : II |

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Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : II
Packing group (RID) : II

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
Classification code (ADR) : FC1
Special provisions (ADR) : 274
Limited quantities (ADR) : 1kg
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P002, IBC06
Portable tank and bulk container instructions (ADR) : T3
Portable tank and bulk container special provisions (ADR) : TP33
Tank code (ADR) : SGAN
Vehicle for tank carriage : AT
Transport category (ADR) : 2
Special provisions for carriage - Packages (ADR) : V11
Hazard identification number (Kemler No.) : 48
Orange plates :
Tunnel restriction code (ADR) : E
EAC code : 1W

- Transport by sea
Special provisions (IMDG) : 274, 915
Limited quantities (IMDG) : 1 kg
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P002
IBC packing instructions (IMDG) : IBC06
IBC special provisions (IMDG) : B2
Tank instructions (IMDG) : T3
Tank special provisions (IMDG) : TP33
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-G
Stowage category (IMDG) : D
Stowage and handling (IMDG) : SW2
Properties and observations (IMDG) : Causes burns to skin, eyes and mucous membranes.

- Air transport
PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y441
PCA limited quantity max net quantity (IATA) : 5kg
PCA packing instructions (IATA) : 445
PCA max net quantity (IATA) : 15kg
CAO packing instructions (IATA) : 448
CAO max net quantity (IATA) : 50kg
Special provisions (IATA) : A3
ERG code (IATA) : 3C
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- Inland waterway transport
  Classification code (ADN): FC1
  Special provisions (ADN): 274
  Limited quantities (ADN): 1 kg
  Excepted quantities (ADN): E2
  Equipment required (ADN): PP, EP
  Number of blue cones/lights (ADN): 1

- Rail transport
  Classification code (RID): FC1
  Special provisions (RID): 274
  Limited quantities (RID): 1kg
  Excepted quantities (RID): E2
  Packing instructions (RID): P002, IBC06
  Mixed packing provisions (RID): MP10
  Portable tank and bulk container instructions (RID): T3
  Portable tank and bulk container special provisions (RID): TP33
  Tank codes for RID tanks (RID): SGAN
  Transport category (RID): 2
  Special provisions for carriage – Packages (RID): W1
  Colis express (express parcels) (RID): CE10
  Hazard identification number (RID): 48

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
LITHIUM ISOPROPOXIDE is not on the REACH Candidate List
LITHIUM ISOPROPOXIDE is not on the REACH Annex XIV List
LITHIUM ISOPROPOXIDE 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.

15.1.2. National regulations

Germany
Reference to AwSV: Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to AwSV; ID No. 9273)
12th Ordinance Implementing the Federal Immision Control Act - 12.BImSchV: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen: The substance is not listed
SZW-lijst 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 – Vruchtbareheid: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling: The substance is not listed

Denmark
Danish National Regulations: Young people below the age of 18 years are not allowed to use the product
**15.2. Chemical safety assessment**

No additional information available

**SECTION 16: Other information**

Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; 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</th>
</tr>
</thead>
</table>

Other information: Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Flam. Sol. 2 | Flammable solids, Category 2 |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| H228 | Flammable solid. |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |

**SDS EU (REACH Annex II) - Custom**

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