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

1.1. Product identifier

Product form: Substance
Physical state: Solid
Substance name: LITHIUM ALUMINUM HYDRIDE, pellets
Product code: INLI009
Formula: H4AlLi
Synonyms: LITHIUM TETRAHYDROALUMINATE; LITHIUM ALUMINUM TETRAHYDRIDE
Chemical family: METAL COMPOUND

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

Use of the substance/mixture: Chemical intermediate
For research and industrial use only

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

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 (GHS-US)
Water-react. 1 H260
Skin Corr. 1A H314
Eye Dam. 1 H318

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US): ☢️ ☣️

Signal word (GHS-US): Danger

Hazard statements (GHS-US): H260 - In contact with water releases flammable gases which may ignite spontaneously
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Precautionary statements (GHS-US): P280 - Wear protective gloves/protective clothing/eye protection/face protection
P233 - Do not allow contact with water
P233+P232 - Handle under inert gas. Protect from moisture
P260 - Do not breathe dust
P264 - Wash hands thoroughly after handling
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower
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
P310 - Immediately call a doctor
P321 - Specific treatment (see supplemental first aid instructions on this label)
P335+P334 - Brush off loose particles from skin. Immerse in cool water/.wrap in wet bandages
P363 - Wash contaminated clothing before reuse
P370+P378 - In case of fire: Use dolomite, Lith-X, dry chemical or sand to extinguish
P402+P404 - Store in a dry place. Store in a closed container
P405 - Store locked up
LITHIUM ALUMINUM HYDRIDE, pellets
Safety Data Sheet

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance
Substance type: Mono-constituent
Name: LITHIUM ALUMINUM HYDRIDE, pellets
CAS No: 16853-85-3
EC no: 240-877-9

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium aluminum hydride</td>
<td>(CAS No) 16853-85-3</td>
<td>&gt; 95</td>
<td>Water-react. 1, H260</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1A, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H318</td>
</tr>
</tbody>
</table>

3.2. Mixture
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 victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. Wash with plenty of soap and 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/injuries: Causes severe skin burns and eye damage.
Symptoms/injuries after inhalation: May cause irritation to the respiratory tract.
Symptoms/injuries after skin contact: Causes (severe) skin burns.
Symptoms/injuries after eye contact: Causes serious eye damage.
Symptoms/injuries 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: Dolomite, Lith-X, dry chemical or sand.
Unsuitable extinguishing media: Water-based extinguishing media should not be used.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Reacts vigorously with water, possibly igniting. May reignite after fire is extinguished.

5.3. Advice for firefighters
Firefighting instructions: Exercise caution when fighting any chemical fire.
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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures: Eliminate every possible source of ignition. Avoid contact with water.

6.1.1. For non-emergency personnel
Protective equipment: Wear protective equipment as described in Section 8.
Emergency procedures: Evacuate unnecessary personnel.
LITHIUM ALUMINUM HYDRIDE, pellets
Safety Data Sheet

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. Fire resistant clothing and gloves must be worn. 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
Methods for cleaning up: Cover spills with dry dolomite, Lith-X, sand or graphite. Sweep or shovel spills into appropriate container for disposal. Until disposed, remove all combustible materials from area.

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. Handle under dry inert atmosphere. Do not allow contact with water. Handle under inert gas. Protect from moisture. Provide local exhaust or general room ventilation to minimize exposure to dust.

Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in sealed containers under inert atmosphere. If storing large amounts, advise Fire Departments of water-reactivity (NFPA 704 placard).
Incompatible materials: Water.
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
Lithium aluminum hydride (16853-85-3)

<table>
<thead>
<tr>
<th>USA ACGIH</th>
<th>ACGIH TWA (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.025 mg/m³ (LiH limit)</td>
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</tbody>
</table>

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. An eyewash and emergency shower should be available, but must be located to avoid water-spray or flow that will contact lithium aluminum hydride.

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 (orange cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| Physical state: Solid |
| Appearance: Powder. Compressed into pellets. |
| Molecular mass: 37.95 g/mol |
| Color: White to slightly gray. |
| Odor: No data available |
| Odor threshold: No data available |
| Refractive index: No data available |
| pH: No data available |
| Relative evaporation rate (butyl acetate=1): No data available |
| Melting point: > 130 °C decomposes |
| Freezing point: No data available |
| Boiling point: No data available |
| Flash point: No data available |
| Auto-ignition temperature: No data available |
LITHIUM ALUMINUM HYDRIDE, pellets
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Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : No data available
Relative vapor density at 20 °C : No data available
Relative density : 0.92
Solubility : Reacts violently with water. May ignite.
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
Oxidizing properties : No data available
Explosion 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 in contact with air by reaction with water.

10.4. Conditions to avoid
No additional information available

10.5. Incompatible materials
Water.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Lithium aluminum hydride (16853-85-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral mouse</td>
</tr>
<tr>
<td>Toxicity information</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes severe skin burns and eye damage.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified
Symptoms/injuries after inhalation : May cause irritation to the respiratory tract.
Symptoms/injuries after skin contact : Causes (severe) skin burns.
Symptoms/injuries after eye contact : Causes serious eye damage.
Symptoms/injuries after ingestion : May be harmful if swallowed.
Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
No additional information available
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. Other adverse effects
Effect on ozone layer : No additional information available
Effect on the global warming : No known ecological damage caused by this product.

**SECTION 13: Disposal considerations**

13.1. Waste treatment methods
Waste 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
UN-No.(DOT) : 1410
DOT NA no. : UN1410

14.2. UN proper shipping name
Proper Shipping Name (DOT) : Lithium aluminum hydride
Department of Transportation (DOT) Hazard Classes : 4.3 - Class 4.3 - Dangerous when wet material 49 CFR 173.124
Hazard labels (DOT) : 4.3 - Dangerous when wet

Packing group (DOT) : I - Great Danger
DOT Packaging Exceptions (49 CFR 173.xxx) : None
DOT Packaging Non Bulk (49 CFR 173.xxx) : 211
DOT Packaging Bulk (49 CFR 173.xxx) : 242

14.3. Additional information
Other information : No supplementary information available.

**Transport by sea**
DOT Vessel Stowage Location : E - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other : 52 - Stow “separated from” acids

**Air transport**
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 15 kg

**SECTION 15: Regulatory information**

15.1. US Federal regulations
Lithium aluminum hydride (16853-85-3) Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
LITHIUM ALUMINUM HYDRIDE, pellets
Safety Data Sheet

<table>
<thead>
<tr>
<th>Lithium aluminum hydride (16853-85-3)</th>
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<tbody>
<tr>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
</tr>
<tr>
<td>Listed on IECS (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
</tr>
<tr>
<td>Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)</td>
</tr>
<tr>
<td>Listed on the Japanese ENCS (Existing &amp; New Chemical Substances) inventory</td>
</tr>
<tr>
<td>Listed on the Korean ECL (Existing Chemicals List)</td>
</tr>
<tr>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
</tr>
<tr>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
<tr>
<td>Listed on the Canadian IDL (Ingredient Disclosure List)</td>
</tr>
<tr>
<td>Listed on INSQ (Mexican national Inventory of Chemical Substances)</td>
</tr>
</tbody>
</table>

15.3. US State regulations

<table>
<thead>
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<tbody>
<tr>
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</tr>
<tr>
<td>U.S. - California - Proposition 65 - Developmental Toxicity</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</td>
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</tr>
<tr>
<td>No</td>
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</tbody>
</table>

SECTION 16: Other Information

Abbreviations and acronyms:

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 Chemicals Index Number; OECD: The Organisation for Economic Co-operation and Development.

Full text of H-phrases:

<table>
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<tr>
<th>H260</th>
<th>H314</th>
<th>H318</th>
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<td>Causes severe skin burns and eye damage</td>
<td>Causes serious eye damage</td>
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</table>

HMIS III Rating

Health: 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures
Flammability: 3 Serious Hazard
Physical: 2 Moderate Hazard

Prepared by safety and environmental affairs.

Date of issue: 07/23/2015
Version: 1.0

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
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