1. Identification

Product Name: Lithium hydride

Cat No.: AC332950000; AC332951000; AC332955000

CAS No: 7580-67-8

Synonyms: Lithium Monohydride.; LIH

Recommended Use: Laboratory chemicals.

Uses advised against: Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Fisher Scientific Company
Acros Organics
One Reagent Lane
One Reagent Lane
Fair Lawn, NJ 07410
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US:001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US:001-800-424-9300 / Europe:001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| Substances/mixtures which, in contact with water, emit flammable gases | Category 1 |
| Skin Corrosion/Irritation | Category 1 B |
| Serious Eye Damage/Eye Irritation | Category 1 |

Label Elements

Signal Word
Danger

Hazard Statements
In contact with water releases flammable gas
Causes severe skin burns and eye damage
Precautionary Statements

Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Keep away from any possible contact with water, because of violent reaction and possible flash fire
Handle under inert gas. Protect from moisture

Response
Immediately call a POISON CENTER or doctor/physician

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Brush off loose particles from skin. Immerse in cool water/.wrap with wet bandages

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Fire
In case of fire: Use limestone powder, sodium chloride or dry sand to extinguish

Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in a dry place. Store in a closed container

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Reacts violently with water

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydride</td>
<td>7580-67-8</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact
Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing.

Skin Contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.

Inhalation
Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way
valve or other proper respiratory medical device. Call a physician or poison control center immediately. If not breathing, give artificial respiration.

**Ingestion**

Do NOT induce vomiting. Immediate medical attention is required. Never give anything by mouth to an unconscious person. Drink plenty of water.

**Most important symptoms and effects**

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

**Notes to Physician**

Treat symptomatically

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### 5. Fire-fighting measures

**Suitable Extinguishing Media**

Dry sodium chloride. Limestone powder. Dry sand.

**Unsuitable Extinguishing Media**

Water, Carbon dioxide (CO2), Foam

**Flash Point**

No information available

**Method -**

No information available

**Autoignition Temperature**

>160 °C / >392 °F

**Explosion Limits**

Upper No data available

Lower No data available

**Sensitivity to Mechanical Impact**

No information available

**Sensitivity to Static Discharge**

No information available

**Specific Hazards Arising from the Chemical**

The product causes burns of eyes, skin and mucous membranes. Reacts violently with water.

**Hazardous Combustion Products**

Hydrogen. Lithium oxide.

**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.

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### 6. Accidental release measures

**Personal Precautions**

Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

**Environmental Precautions**

Do not allow material to contaminate ground water system. Should not be released into the environment. See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up**

Avoid dust formation. Sweep up and shovel into suitable containers for disposal. Do not expose spill to water.

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### 7. Handling and storage

**Handling**

Do not breathe dust. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not ingest. If swallowed then seek immediate medical assistance. Wear personal protective equipment/face protection. Do not allow contact with water.

**Storage.**

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from water or moist air. Store under an inert atmosphere. Incompatible

8. Exposure controls / personal protection

### Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydride</td>
<td>Ceiling: 0.05 mg/m³</td>
<td>(Vacated) TWA: 0.025 mg/m³</td>
<td>IDLH: 0.5 mg/m³</td>
<td>TWA: 0.025 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 0.025 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Legend

- **ACGIH** - American Conference of Governmental Industrial Hygienists
- **OSHA** - Occupational Safety and Health Administration
- **NIOSH** - National Institute for Occupational Safety and Health

### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use only under a chemical fume hood.

### Personal Protective Equipment

- **Eye/face Protection**: Tight sealing safety goggles. Face protection shield.
- **Skin and body protection**: Wear appropriate protective gloves and clothing to prevent skin exposure.
- **Respiratory Protection**: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
  - **Recommended Filter type**: Particulates filter conforming to EN 143.

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

- **Physical State**: Powder Solid
- **Appearance**: Light grey
- **Odor**: No information available
- **Odor Threshold**: No information available
- **pH**: No information available
- **Melting Point/Range**: 680 °C / 1256 °F
- **Boiling Point/Range**: No information available
- **Flash Point**: No information available
- **Evaporation Rate**: Not applicable
- **Flammability (solid,gas)**: No information available
- **Flammability or explosive limits**
  - **Upper**: No data available
  - **Lower**: No data available
- **Vapor Pressure**: No information available
- **Vapor Density**: Not applicable
- **Specific Gravity**: 0.820
- **Solubility**: Reacts violently with water
- **Partition coefficient; n-octanol/water**: No data available
- **Autoignition Temperature**: >160 °C / >392 °F
- **Decomposition Temperature**: No information available
- **Viscosity**: Not applicable
- **Molecular Formula**: H₂Li
- **Molecular Weight**: 7.95
10. Stability and reactivity

Reactive Hazard  Yes

Stability  Stable under normal conditions.

Conditions to Avoid  Incompatible products. Excess heat. Exposure to moist air or water. Exposure to moisture.

Incompatible Materials  Acids, Strong oxidizing agents, Alcohols, Chlorine, oxygen

Hazardous Decomposition Products  Hydrogen, Lithium oxide

Hazardous Polymerization  Hazardous polymerization does not occur.

Hazardous Reactions  None under normal processing. Reacts violently with water.

11. Toxicological information

Acute Toxicity

Product Information  No acute toxicity information is available for this product

Component Information  No information available

Toxicologically Synergistic Products  No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation  Causes burns by all exposure routes

Sensitization  No information available

Carcinogenicity  The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
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</thead>
<tbody>
<tr>
<td>Lithium hydride</td>
<td>7580-67-8</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects  No information available

Reproductive Effects  No information available.

Developmental Effects  No information available.

Teratogenicity  No information available.

STOT - single exposure  None known

STOT - repeated exposure  None known

Aspiration hazard  No information available

Symptoms / effects, both acute and delayed  Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information  No information available

Other Adverse Effects  The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity  Reacts with water so no ecotoxicity data for the substance is available. Discharge to water will affect pH and harm aquatic organisms.
### Lithium hydride

**Component** | **Freshwater Algae** | **Freshwater Fish** | **Microtox** | **Water Flea**  
--- | --- | --- | --- | ---  
Lithium hydride | Not listed | LC50: 62.22 mg/L/96h (Danio rerio) | Not listed | EC50: 18.1 mg/L/48h  

**Persistence and Degradability**  
Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation**  
No information available.

**Mobility**  
Is not likely mobile in the environment.

### 13. Disposal considerations

**Waste Disposal Methods**  
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

**DOT**
- **UN-No**: UN1414  
- **Proper Shipping Name**: LITHIUM HYDRIDE  
- **Hazard Class**: 4.3  
- **Packing Group**: I

**TDG**
- **UN-No**: UN1414  
- **Proper Shipping Name**: LITHIUM HYDRIDE  
- **Hazard Class**: 4.3  
- **Packing Group**: I

**IATA**
- **UN-No**: UN1414  
- **Proper Shipping Name**: LITHIUM HYDRIDE  
- **Hazard Class**: 4.3  
- **Packing Group**: I

**IMDG/IMO**
- **UN-No**: UN1414  
- **Proper Shipping Name**: LITHIUM HYDRIDE  
- **Hazard Class**: 4.3  
- **Packing Group**: I

### 15. Regulatory information

#### United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active-Inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydride</td>
<td>7580-67-8</td>
<td>X</td>
<td>ACTIVE</td>
<td>-</td>
</tr>
</tbody>
</table>

**Legend:**

- **TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)  
- **X** Listed  
- **’-’** Not Listed  

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**  
Not applicable

**TSCA 12(b) - Notices of Export**  
Not applicable

#### International Inventories

- Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>ISHL</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
</table>

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Lithium hydride

Revision Date 20-Dec-2022

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydride</td>
<td>-</td>
<td>100 lb</td>
</tr>
</tbody>
</table>

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydride</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant: N
DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade
No information available

Authorisation/Restrictions according to EU REACH
Not applicable

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydride</td>
<td>7580-67-8</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>OECD HPV</th>
<th>Persistent Organic Pollutant</th>
<th>Ozone Depletion Potential</th>
<th>Restriction of Hazardous Substances (RoHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydride</td>
<td>7580-67-8</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

|-----------|--------|---------------------|---------------------|-----------|-----------------|

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313 Not applicable
SARA 311/312 Hazard Categories See section 2 for more information
CWA (Clean Water Act) Not applicable
Clean Air Act Not applicable
OSHA - Occupational Safety and Health Administration Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)
16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 21-Aug-2009
Revision Date 20-Dec-2022
Print Date 20-Dec-2022
Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
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.

End of SDS