1. Identification

Product Name: Lithium borohydride

Cat No.: AC206810000; AC206810050; AC206810100; AC206810500

CAS No: 16949-15-8

Synonyms: No information available

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
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

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
Acute oral toxicity Category 3
Acute dermal toxicity Category 3
Acute Inhalation Toxicity - Dusts and Mists Category 3
Skin Corrosion/Irritation Category 1 B
Serious Eye Damage/Eye Irritation Category 1
Specific target organ toxicity (single exposure) Category 3
Target Organs - Respiratory system.

Label Elements

Signal Word
Danger
Hazard Statements
In contact with water releases flammable gases which may ignite spontaneously
Causes severe skin burns and eye damage
May cause respiratory irritation
Toxic if swallowed, in contact with skin or if inhaled

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
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
Wash contaminated clothing before reuse
IF ON Skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
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
Rinse mouth
Do NOT induce vomiting
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
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 borohydride</td>
<td>16949-15-8</td>
<td>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.
Lithium borohydride

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

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation
Remove to fresh air. If breathing is difficult, give oxygen. 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. Immediate medical attention is required.

Ingestion
Do NOT induce vomiting. Call a physician or poison control center immediately.

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

5. Fire-fighting measures

Suitable Extinguishing Media
CO₂, dry chemical, dry sand, alcohol-resistant foam.

Unsuitable Extinguishing Media
DO NOT USE WATER

Flash Point
No information available

Autoignition Temperature
No information available

Explosion Limits
Upper 75.6 vol %  
Lower 4.0 vol %

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
Oxides of boron. Thermal decomposition can lead to release of irritating gases and vapors. Hydrogen.

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.

NFPA

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
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<td></td>
<td>3</td>
<td>3</td>
<td>2</td>
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</table>

6. Accidental release measures

Personal Precautions
Use personal protective equipment as required. Evacuate personnel to safe areas. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid dust formation.

Environmental Precautions
Should not be released into the environment. See Section 12 for additional Ecological Information.

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

7. Handling and storage
Lithium borohydride

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

Storage.

8. Exposure controls / personal protection
Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures
Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

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.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Powder Solid</th>
</tr>
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<tbody>
<tr>
<td>Appearance</td>
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<td>Melting Point/Range</td>
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<tr>
<td>Boiling Point/Range</td>
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<tr>
<td>Evaporation Rate</td>
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<td>Upper</td>
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<td>Lower</td>
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<td>Partition coefficient; n-octanol/water</td>
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<td>Molecular Weight</td>
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</table>

10. Stability and reactivity
Lithium borohydride

Reactive Hazard
Yes

Stability
Stable under normal conditions. Moisture sensitive.

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

Incompatible Materials
Acids, Water, Strong oxidizing agents, Alcohols, Amines, Halogens, Acid anhydrides, Chloroformates

Hazardous Decomposition Products
Oxides of boron, Thermal decomposition can lead to release of irritating gases and vapors. Hydrogen

Hazardous Polymerization
Hazardous polymerization does not occur.

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

11. Toxicological information

Acute Toxicity

Product Information

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
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<tbody>
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<td>Lithium borohydride</td>
<td>87.8 mg/kg (Mouse)</td>
<td>Not listed</td>
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</tr>
</tbody>
</table>

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>
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<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
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</tbody>
</table>

Mutagenic Effects
No information available

Reproductive Effects
No information available.

Developmental Effects
No information available.

Teratogenicity
No information available.

STOT - single exposure
Respiratory system

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. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity
Lithium borohydride

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Do not empty into drains.

Persistence and Degradability Soluble in water. Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

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

<table>
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<td>Hazard Class</td>
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<td>Hazard Class</td>
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<tr>
<td>Packing Group</td>
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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>
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<tbody>
<tr>
<td>Lithium borohydride</td>
<td>16949-15-8</td>
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<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 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>
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<th>AICS</th>
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<th>KECL</th>
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</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 Not applicable

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>
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<tbody>
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<td>-</td>
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</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

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>
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<td>16949-15-8</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
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</tr>
</tbody>
</table>

16. Other information

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

Creation Date 09-Feb-2015
Revision Date 24-Dec-2021
Print Date 24-Dec-2021
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