



# MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Date of issue: 03/10/2013

Version 1.0

## SECTION 1. Identification

### Product identifier

Product number	820753
Product name	Lithium hydride for synthesis

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Chemical for synthesis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   SDS Phone Support: +1-978-715-1335   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)  e-mail: mm_sds@merckgroup.com
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS Classification

Substances and mixtures which in contact with water emit flammable gases, Category 1, H260

Skin corrosion, Category 1A, H314

Acute toxicity, Category 3, Oral, H301

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

#### Hazard pictograms



*Signal Word*  
Danger

#### Hazard Statements

H260 In contact with water releases flammable gases which may ignite spontaneously.

H301 Toxic if swallowed.

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H314 Causes severe skin burns and eye damage.

## *Precautionary Statements*

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

P402 + P404 Store in a dry place. Store in a closed container.

## OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

## Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Formula	LiH	HLi (Hill)
CAS-No.	7580-67-8	
Molar mass	7.95 g/mol	

## Hazardous ingredients

*Chemical Name ( Concentration)*

CAS-No.

*Lithium hydride ( >= 90 % - <= 100 % )*

7580-67-8

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## SECTION 4. First aid measures

### Description of first-aid measures

#### *General advice*

First aider needs to protect himself.

#### *Inhalation*

After inhalation: fresh air. Call in physician.

#### *Skin contact*

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

#### *Eye contact*

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

#### *Ingestion*

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

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### Most important symptoms and effects, both acute and delayed

The following applies to lithium compounds in general: when handled or used inappropriately, the absorption of large quantities is followed by CNS disorders, agitation, spasms, ataxia (impaired locomotor coordination) due to disturbed electrolyte balance.

### Indication of any immediate medical attention and special treatment needed

No information available.

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## SECTION 5. Fire-fighting measures

### Extinguishing media

*Suitable extinguishing media*

Sand, Cement

*Unsuitable extinguishing media*

Water, Carbon dioxide (CO<sub>2</sub>), Foam

### Special hazards arising from the substance or mixture

Combustible.

May not get in touch with:

Water

Caution! in contact with water product releases:

Hydrogen

### Advice for firefighters

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Suppress (knock down) gases/vapors/mists with a water spray jet.

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## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Keep away from heat and sources of ignition. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### Environmental precautions

Do not empty into drains. Risk of explosion.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Keep workplace dry. Do not allow product to come into contact with water.

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Observe label precautions.

## *Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

## **Conditions for safe storage, including any incompatibilities**

Tightly closed. Dry. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at +15°C to +25°C (+59°F to +77°F).

## **SECTION 8. Exposure controls/personal protection**

### **Exposure limit(s)**

#### *Ingredients*

Basis	Value	Threshold limits	Remarks
<i>Lithium hydride 7580-67-8</i>			
ACGIH	Time Weighted Average (TWA):	0.025 mg/m <sup>3</sup>	
NIOSH/GUIDE	Recommended exposure limit (REL):	0.025 mg/m <sup>3</sup>	
OSHA_TRANS	PEL:	0.025 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	0.025 mg/m <sup>3</sup>	

### **Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### **Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

#### *Eye/face protection*

Tightly fitting safety goggles

#### *Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

#### *Other protective equipment:*

Flame retardant antistatic protective clothing

#### *Respiratory protection*

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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## SECTION 9. Physical and chemical properties

Physical state	powder
Color	gray
Odor	odorless
Odor Threshold	No information available.
pH	> 7 at 21 g/l 68 °F ( 20 °C)
Melting point	688 °C
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Relative density	0.78 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Water solubility	at 68 °F ( 20 °C) (rigorous decomposition)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Bulk density	290 - 430 kg/m <sup>3</sup>

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### SECTION 10. Stability and reactivity

#### Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

#### Chemical stability

heat-sensitive  
sensitive to moisture

#### Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Water, Alcohols, acids, metallic chlorides

Violent reactions possible with:

Aldehydes, Ketones, Chlorine, carbon dioxide, Hydrogen halides, metallic chlorides

Risk of ignition or formation of inflammable gases or vapors with:  
nitrogen oxides

#### Conditions to avoid

Warming (decomposition).  
Exposure to moisture.

#### Incompatible materials

no information available

#### Hazardous decomposition products

no information available

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### SECTION 11. Toxicological information

#### Information on toxicological effects

##### *Likely route of exposure*

Inhalation, Eye contact, Skin contact, Ingestion

##### *Target Organs*

Eyes

Skin

Respiratory system

Central nervous system

##### *Acute oral toxicity*

LD50 rat: 78 mg/kg (RTECS)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

absorption

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### *Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract, Inhalation may lead to the formation of oedemas in the respiratory tract., Symptoms may be delayed.

### *Skin irritation*

Causes severe burns.

### *Eye irritation*

Causes serious eye damage.

Risk of blindness!

### *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

### *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## **Carcinogenicity**

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

## **Further information**

Decomposition of the substance with tissue moisture.

The following applies to lithium compounds in general: when handled or used inappropriately, the absorption of large quantities is followed by CNS disorders, agitation, spasms, ataxia (impaired locomotor coordination) due to disturbed electrolyte balance.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## **SECTION 12. Ecological information**

### **Ecotoxicity**

*Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia: 19 mg/l; 48 h (External MSDS)

### **Persistence and degradability**

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No information available.

## Bioaccumulative potential

No information available.

## Mobility in soil

No information available.

## Other adverse effects

*Additional ecological information*

Biological effects:

Harmful effect due to pH shift.

Further information on ecology

Discharge into the environment must be avoided.

## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

## SECTION 14. Transport information

### Land transport (DOT)

UN number UN 1414  
Proper shipping name LITHIUM HYDRIDE  
Class 4.3  
Packing group I  
Environmentally hazardous --

### Air transport (IATA)

UN number UN 1414  
Proper shipping name LITHIUM HYDRIDE  
Class 4.3  
Packing group I  
Environmentally hazardous --  
Special precautions for user yes  
IATA ( Passenger) Not permitted for transport

### Sea transport (IMDG)

UN number UN 1414  
Proper shipping name LITHIUM HYDRIDE  
Class 4.3  
Packing group I  
Environmentally hazardous --  
Special precautions for user yes  
EmS F-G S-N



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## SECTION 15. Regulatory information

### United States of America

#### OSHA Hazards

Water Reactive  
Toxic by ingestion  
Corrosive to skin  
Corrosive to eyes  
Target organ effects

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

#### SARA 311/312 Hazards

Reactivity Hazard  
Acute Health Hazard  
Chronic Health Hazard

#### SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA 302

The following components are subject to reporting levels established by SARA Title III, Section 302:

##### *Ingredients*

Lithium hydride 7580-67-8

#### Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

#### DEA List I

Not listed

#### DEA List II

Not listed

#### Massachusetts Right To Know

##### *Ingredients*

Lithium hydride

#### Pennsylvania Right To Know

##### *Ingredients*

Lithium hydride

#### New Jersey Right To Know

##### *Ingredients*

Lithium hydride

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## Notification status

TSCA: On TSCA Inventory

DSL: This product contains one or several components listed in the Canadian NDSL.  
*Ingredients*  
Lithium hydride

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Full text of H-Statements referred to under sections 2 and 3.

H260 In contact with water releases flammable gases which may ignite spontaneously.  
H301 Toxic if swallowed.  
H314 Causes severe skin burns and eye damage.

### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

Date of issue:03/10/2013

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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