

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

## SECTION 1: Identification

### 1.1 GHS Product identifier

**Product name** Lithium hydride

### 1.2 Other means of identification

**Product number** -  
**Other names** Lithium hydride;

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses** Industrial and scientific research use.  
**Uses advised against** no data available

### 1.4 Supplier's details

**Company** Shanghai Yansheng Internet Technology Co., Ltd  
**Address** 513, A3 / F, green space future center, Fengxian District, Shanghai, 201400, China  
**Telephone** +86-4000-6969-66

### 1.5 Emergency phone number

**Emergency phone number** +86-4000-6969-66  
**Service hours** Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Substances and mixtures, which in contact with water, emit flammable gases, Category 1  
Skin corrosion, Sub-category 1B

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word** Danger  
**Hazard statement(s)** H260 In contact with water releases flammable gases which may ignite spontaneously  
H314 Causes severe skin burns and eye damage

**Precautionary statement(s)**  
**Prevention** P223 Do not allow contact with water.  
P231+P232 Handle and store contents under inert gas/....Protect from moisture.

<b>Response</b>	P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
	P260 Do not breathe dust/fume/gas/mist/vapours/spray.
<b>Response</b>	P264 Wash ... thoroughly after handling.
	P302+P335+P334 IF ON SKIN: Brush off loose particles from skin. Immerse in cool water [or wrap in wet bandages].
<b>Response</b>	P370+P378 In case of fire: Use ... to extinguish.
	P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
<b>Response</b>	P363 Wash contaminated clothing before reuse.
	P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
<b>Response</b>	P316 Get emergency medical help immediately.
	P321 Specific treatment (see ... on this label).
<b>Response</b>	P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P402+P404 Store in a dry place. Store in a closed container.
<b>Storage</b>	P405 Store locked up.
<b>Disposal</b>	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### 2.3 Other hazards which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Lithium hydride	Lithium hydride	7580-67-8	231-484-3	100%

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest. Half-upright position. No mouth-to-mouth artificial respiration. Refer immediately for medical attention.

#### Following skin contact

Remove contaminated clothes. Put clothes in sealable container. Rinse skin with plenty of water or shower. Refer immediately for medical attention.

#### Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible). Refer immediately for medical attention.

#### Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer immediately for medical attention.

### 4.2 Most important symptoms/effects, acute and delayed

This material is relatively toxic to people. It is more likely to cause irritation of skin and mucous membrane tissues rather than death. Its effects are primarily acute. A massive exposure to the eyes and by inhalation may be lethal. Those experiencing any ailment of the upper respiratory tract (e.g., bronchitis or pneumonia) are at a greater risk. (EPA, 1998)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway (oropharyngeal or nasopharyngeal airway, if needed). Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary ... Monitor for shock and treat if necessary ... Anticipate seizures and treat if necessary ... For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with 0.9% saline (NS) during treatment ... Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool ... Cover skin burns with dry sterile dressings after decontamination ... Lithium and related compounds

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## **SECTION 5: Fire-fighting measures**

### **5.1 Suitable extinguishing media**

Use approved Class D extinguishers or smother with dry sand, dry clay, or dry ground limestone. Do not use carbon dioxide or halogenated extinguishing agents. Do NOT use water. Violent reaction may result.

### **5.2 Specific hazards arising from the chemical**

In a fire, irritating alkali fumes may form. Lithium hydride can form airborne dust clouds which may explode on contact with flame, heat, or oxidizing materials. Additionally, spontaneous ignition occurs when nitrous oxide and lithium hydride are mixed. Lithium hydride also forms explosive mixtures with liquid oxygen. Contact with heat, moisture or acid causes exothermic reaction and evolution of hydrogen as well as lithium hydroxide. Incompatible with air and moisture, nitrous oxide, strong oxidizers, and liquid oxygen. Lithium hydride may ignite spontaneously in air and should be maintained and handled out of contact with air and moisture. Any contact with nitrous oxide; airborne powders may ignite upon reaching moisture. (EPA, 1998)

### **5.3 Special protective actions for fire-fighters**

NO hydrous agents, foam, carbon dioxide. Use inert gas, dry sand, special powder.

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## **SECTION 6: Accidental release measures**

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

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Cover the spilled material with dry powder.

### **6.2 Environmental precautions**

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Cover the spilled material with dry powder.

### **6.3 Methods and materials for containment and cleaning up**

Wearing butyl rubber gloves, fireproof clothing, face shield and goggles, cover spill with sand. Transfer mixture into a dry plastic bag filled in advance with an inert gas. Carry outdoors for incineration. After burning (if not in a proper incinerator), sprinkle water on the residue for complete destruction. Alternatively, in the fume hood, add butanol slowly to the solid mixture until the reaction ceases. Then carefully add water until all the hydride is destroyed. Let stand until solid settles.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

NO open flames. See Chemical Dangers. Closed system, dust explosion-proof electrical equipment and lighting. Prevent deposition of dust. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

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

Separated from incompatible materials. See Chemical Dangers. Dry. Keep under mineral oil or inert gas. Cool. Store in an area without drain or sewer access. Store in a cool, dry,

well-ventilated location. Must be stored in a dry location. Immediately remove and properly dispose of any spilled material.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

TLV: (inhalable fraction): 0.05 mg/m<sup>3</sup> (ceiling value).EU-OEL: (inhalable fraction): 0.02 mg/m<sup>3</sup> as STEL

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear face shield or eye protection in combination with breathing protection if powder.

#### Skin protection

Protective gloves. Protective clothing.

#### Respiratory protection

Use closed system or breathing protection.

#### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties and safety characteristics

<b>Physical state</b>	Lithium hydride is a white or translucent crystalline mass or powder. The commercial product is light bluish-gray lumps due to the presence of minute amounts of colloiddally dispersed lithium.
<b>Colour</b>	Gray cubic crystals or powder, hygroscopic
<b>Odour</b>	Odorless ...
<b>Melting point/freezing point</b>	680°C
<b>Boiling point or initial boiling point and boiling range</b>	850(分解)
<b>Flammability</b>	Combustible Solid that can form airborne dust clouds which may explode on contact with flame, heat, or oxidizers.
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	no data available
<b>Auto-ignition temperature</b>	392° F (USCG, 1999)
<b>Decomposition temperature</b>	850°C
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	Reacts with water (NIOSH, 2016)
<b>Partition coefficient n-octanol/water</b>	no data available

<b>Vapour pressure</b>	0 mm Hg at 68° F (EPA, 1998)
<b>Density and/or relative density</b>	0.82
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Decomposes on contact with hot surfaces or flames. This produces irritating alkali fumes. The substance may ignite spontaneously on contact with moist air. The substance is a strong reducing agent. Reacts violently with oxidants, halogenated hydrocarbons and acids. This produces flammable/explosive gas (hydrogen - see ICSC 0001). Reacts violently with water. This produces corrosive fumes of lithium hydroxide.

### 10.2 Chemical stability

Darkens rapidly on exposure to light.

### 10.3 Possibility of hazardous reactions

Lithium hydride is a flammable solid and is dangerous when wet. Dust explosion possible if in powder or granular form, mixed with air. LITHIUM HYDRIDE is a strong reducing agent. The solid may decompose violently in contact with most oxidizing materials. It reacts exothermically with water to form caustic lithium hydroxide and hydrogen gas; the hydrogen may ignite. May ignite spontaneously in moist air. Mixtures with liquid oxygen are explosive. Ignites on contact with dinitrogen oxide [Mellor, 1967, vol. 8, suppl. 2.2, p. 214].

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

Reacts with the lower alcohols, carboxylic acids, chlorine and ammonia at 400 deg C to liberate hydrogen.

### 10.6 Hazardous decomposition products

Thermally unstable. Decomp at 1009 deg F (400 deg C).

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

#### **STOT-single exposure**

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. Inhalation may cause severe swelling of the throat. Inhalation of high concentrations may cause lung oedema, but only after initial corrosive effects on the eyes and the upper respiratory tract have become manifest. See Notes.

#### **STOT-repeated exposure**

no data available

#### **Aspiration hazard**

A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

### **12.2 Persistence and degradability**

no data available

### **12.3 Bioaccumulative potential**

no data available

### **12.4 Mobility in soil**

no data available

### **12.5 Other adverse effects**

no data available

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## **SECTION 13: Disposal considerations**

### **13.1 Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## **SECTION 14: Transport information**

### **14.1 UN Number**

ADR/RID: UN1414 (For reference only, please check.)

IMDG: UN1414 (For reference only, please check.)

IATA: UN1414 (For reference only, please check.)

### **14.2 UN Proper Shipping Name**

ADR/RID: LITHIUM

IMDG: LITHIUM

IATA: LITHIUM HYDRIDE

HYDRIDE (For reference only, please check.)

HYDRIDE (For reference only, please check.)

(For reference only, please check.)

### 14.3 Transport hazard class(es)

ADR/RID: 4.3 (For reference only, please check.)

IMDG: 4.3 (For reference only, please check.)

IATA: 4.3 (For reference only, please check.)

### 14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.)

IMDG: I (For reference only, please check.)

IATA: I (For reference only, please check.)

### 14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Lithium hydride	Lithium hydride	7580-67-8	231-484-3
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

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## SECTION 16: Other information

#### Information on revision

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#### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

#### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### Other Information

Immediate administration of an appropriate inhalation therapy by a doctor, or by an authorized person, should be considered. Do NOT take working clothes home. Reacts violently with fire extinguishing agents such as water, carbon dioxide and foam.

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

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*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*