ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

Lithium Aluminum Hydride

Revision Date:2026-08-15 Revision Number:1

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

Product identifier

Product name	: Lithium Aluminum Hydride
CBnumber	: CB7318252
CAS	: 16853-85-3
EINECS Number	: 240-877-9
Synonyms	: LIALH4,LAH

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

Relevant identified uses	: For R&D use only. Not for medicinal, household or other use.
Uses advised against	: none

Company Identification

Company	: Chemicalbook
Address	: Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone	: 010-86108875

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)

Signal word Danger

Precautionary statements

P201 Obtain special instructions before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.

P231+P232 Handle under inert gas. Protect from moisture.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/…/equipment.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P262 Do not get in eyes, on skin, or on clothing.

P264 Wash hands thoroughly after handling.

P264 Wash skin thouroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

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

P284 Wear respiratory protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

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

Continuerinsing.

P308 IF exposed or concerned:

P308+P313 IF exposed or concerned: Get medical advice/attention.

P335+P334 Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.

P337+P313 IF eye irritation persists: Get medical advice/attention.

P370+P378 In case of fire: Use … for extinction.

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

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P422 Store contents under …

Hazard statements

H224 Extremely flammable liquid and vapour

H225 Highly Flammable liquid and vapour

H226 Flammable liquid and vapour

H228 Flammable solid

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

H301 Toxic if swalloed

H302 Harmful if swallowed

H304 May be fatal if swallowed and enters airways

H314 Causes severe skin burns and eye damage

H315 Causes skin irritation

H318 Causes serious eye damage

H319 Causes serious eye irritation

H330 Fatal if inhaled

H333 May be harmful if inhaled

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H351 Suspected of causing cancer

H360 May damage fertility or the unborn child

H361 Suspected of damaging fertility or the unborn child

H371 May cause damage to organs

H372 Causes damage to organs through prolonged or repeated exposure

H373 May cause damage to organs through prolonged or repeated exposure

SECTION 3: Composition/information on ingredients

Substance

Product name	: Lithium Aluminum Hydride
Synonyms	: LIALH4,LAH
CAS	: 16853-85-3
EC number	: 240-877-9
MF	: LiAlH4
MW	: 37.9543

SECTION 4: First aid measures

Description of first aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact

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

If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Sand Dry powder Cement

Unsuitable extinguishing media

Water Carbon dioxide (CO2) Foam

Special hazards arising from the substance or mixture

Lithium oxides Aluminum oxide Combustible.

Risk of dust explosion.

May not get in touch with: Water

Development of hazardous combustion gases or vapours possible in the event of fire.

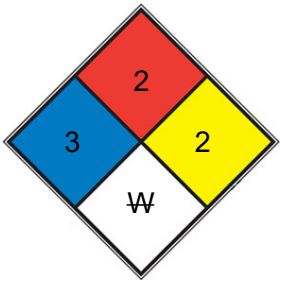
Advice for firefighters

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

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

NFPA 704



■	HEALTH	3	Short exposure could cause serious temporary or moderate residual injury (e.g. liquid hydrogen, sulfuric acid, calcium hypochlorite, hexafluorosilicic acid)
■	FIRE	2	Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, sulfur)
■	REACT	2	Undergoes violent chemical change at elevated temperatures and pressures, reacts violently with water, or may form explosive mixtures with water (e.g. white phosphorus, potassium, sodium)
□	SPEC. HAZ.	W	

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

Environmental precautions

Do not let product enter drains. Risk of explosion.

Methods and materials for containment and cleaning up

Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).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.

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling

Advice on safe handling

Keep workplace dry. Do not allow product to come into contact with water. **Advice on safe handling**

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

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Keep away from heat and sources of ignition. Never allow product to get in contact with water during storage.

Handle and store under inert gas. Reacts violently with water.

Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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SECTION 8: Exposure controls/personal protection

control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate

government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatril? L

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatril? L

Body Protection

protective clothing

Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P2

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

Exposure limits

TLV-TWA 2 mg(Al)/m^3 (ACGIH).

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Appearance	powder
Odour	No data available
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	Melting point/range: 125 °C - dec.
Initial boiling point and boiling range	89 - 90 °C at 2,66 hPa
Flash point	Not applicable
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	0.917
Water solubility	No data available
Partition coefficient: n-octanol/water	Not applicable for inorganic substances
Autoignition temperature	No data available
Decomposition temperature	No data available

Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
Explosive properties	No data available
Oxidizing properties	No data available

Other safety information

No data available

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

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with: Water

Oxygen Alcohols acids

Risk of explosion with:

boron compounds Ether

Dioxane

Organic Substances Oxidizing agents amides

hydrogen peroxide Esters

acetonitrile Peroxides

Exothermic reaction with:

Aldehydes pyridine

Conditions to avoid

Moisture.

Incompatible materials

No data available

Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Oral

Skin corrosion/irritation

Causes severe burns. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Serious eye damage/eye irritation

Causes serious eye damage. Risk of corneal clouding.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

Lithium and its compounds are possible teratogens by analogy to lithium carbonate which has equivocal human teratogenic data and positive animal teratogenic data.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Toxicity

TLV-TWA (ACGIH) 2 mg (Al)/m3

SECTION 12: Ecological information

Toxicity

Toxicity to fish

static test LC50 - Danio rerio (zebra fish) - 99 mg/l - 96 h (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - 54,4 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae

static test ErC50 - Pseudokirchneriella subcapitata - 138,76 mg/l - 72 h

(OECD Test Guideline 201)

Toxicity to bacteria

static test EC50 - activated sludge - 286,4 mg/l - 3 h

(OECD Test Guideline 209)

Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Other adverse effects

Biological effects:

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted. Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

Waste treatment methods

Incompatibilities

Combustible solid. Can ignite spontaneously in moist air or heat. A strong reducing agent; violent reaction with oxidizers. Violent reaction with water, alcohols, acids, dimethylether, ethers, tetrahydrofuran, benzoyl peroxide; boron trifluoride etherate. Reduces carbon dioxide or sodium hydrogen carbonate to methane and ethane at elevated temperatures.

Product

See www.retrologistik.com for processes regarding the return of chemicals and

containers, or contact us there if you have further questions.

Waste Disposal

Small amounts of excess LAH can be destroyed by forming a suspension or solution in an inert solvent such as diethyl ether or hexane, cooling in an ice bath, and slowly and carefully adding ethyl acetate dropwise with stirring. This is followed by the addition of a saturated aqueous solution of ammonium chloride.

SECTION 14: Transport information

UN number

ADR/RID: 1410 IMDG: 1410 IATA: 1410

UN proper shipping name

ADR/RID: LITHIUM ALUMINIUM HYDRIDE IMDG: LITHIUM ALUMINIUM HYDRIDE

IATA: Lithium aluminium hydride Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

ADR/RID: 4.3 IMDG: 4.3

IATA: 4.3

14.4 Packaging group

ADR/RID: I IMDG: I

IATA: I

14.5	Environmental hazards ADR/RID: no IMDG Marine pollutant: no	IATA: no
14.6	Special precautions for user No data available	

SECTION 15: Regulatory information

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

Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Listed. website: https://www.mem.gov.cn/

Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: https://www.mee.gov.cn/

EC Inventory:Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: https://echa.europa.eu/

Korea Existing Chemicals List (KECL):Listed. website: http://ncis.nier.go.kr

New Zealand Inventory of Chemicals (NZIoC):Listed. website: https://www.epa.govt.nz/

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: https://emb.gov.ph/

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: https://www.epa.gov/

Vietnam National Chemical Inventory:Listed. website: https://chemicaldata.gov.vn/

SECTION 16: Other information

Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

References

【1】CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

【2】ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

【3】ECHA - European Chemicals Agency, website: https://echa.europa.eu/

【4】eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

【5】ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

【6】Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

【7】HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

【8】IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

【9】IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

【10】Sigma-Aldrich, website: https://www.sigmaaldrich.com/

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