

# SAFETY DATA SHEET

according to the OSHA  
Hazard Communication Standard

Version 6.7  
Revision Date 07/13/2026  
Print Date 07/14/2026

## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Lithium

Product Number : 265993  
Brand : Aldrich  
Index-No. : 003-001-00-4  
CAS-No. : 7439-93-2

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

Identified uses : Laboratory chemicals, Synthesis of substances

Restrictions on use : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

## SECTION 2. HAZARDS IDENTIFICATION

**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

**Hazards for the product as supplied**

Chemicals which, in contact with water, emit flammable gases : Category 1

Skin corrosion : Category 1B

Serious eye damage : Category 1

### Other hazards

Reacts violently with water.

### GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H260 In contact with water releases flammable gases which may ignite spontaneously.  
H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**  
P223 Do not allow contact with water.  
P231 + P232 Handle under inert gas. Protect from moisture.  
P260 Do not breathe dust.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P335 + P334 Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.  
P363 Wash contaminated clothing before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

### Storage:

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

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

CAS-No. : 7439-93-2

**Components**

| Chemical name | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|---------------|-------------------|-----------------------|--------------|
| lithium       | 7439-93-2*        | >= 90 - <= 100        | -            |

\* Indicates that the identifier is a CAS No.

Actual concentration is withheld as a trade secret

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### SECTION 4. FIRST AID MEASURES

- General advice : First aiders need to protect themselves.  
Show this 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 GHS label elements) and/or in section 11
- Protection of first-aiders : For personal protection see section 8.

Notes to physician : No data available

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## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use approved class D extinguishers or smother with dry sand, dry ground limestone, or dry clay.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : Do not use water, foam, or carbon dioxide.

Water  
Foam

Specific hazards during fire fighting : Not combustible.

May not get in touch with: Water

Ambient fire may liberate hazardous vapours.

Hazardous combustion products : Lithium oxides

Specific extinguishing methods : No data available

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

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.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, : Advice for non-emergency personnel:

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|                                               |                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protective equipment and emergency procedures | Avoid inhalation of dusts.<br>Avoid substance contact.<br>Ensure adequate ventilation.<br>Evacuate the danger area, observe emergency procedures, consult an expert.<br>Advice for emergency responders:<br>Wear appropriate personal protective equipment, as indicated in Section 8. |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                           |                                                          |
|---------------------------|----------------------------------------------------------|
| Environmental precautions | : Do not let product enter drains.<br>Risk of explosion. |
|---------------------------|----------------------------------------------------------|

|                                                       |                                                                                                                                                                                                                |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Methods and materials for containment and cleaning up | : Cover drains. Collect, bind, and pump off spills.<br>Observe possible material restrictions (see sections 7 and 10).<br>Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts. |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2 GHS label elements

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

|                             |                                             |
|-----------------------------|---------------------------------------------|
| Conditions for safe storage | : Store under argon.<br>Handle under argon. |
|-----------------------------|---------------------------------------------|

|                                           |                                                                   |
|-------------------------------------------|-------------------------------------------------------------------|
| Further information on storage conditions | : Tightly closed.<br>Keep away from heat and sources of ignition. |
|-------------------------------------------|-------------------------------------------------------------------|

|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| Materials to avoid | : Never allow product to get in contact with water during storage. |
|--------------------|--------------------------------------------------------------------|

|               |                                                                                    |
|---------------|------------------------------------------------------------------------------------|
| Storage class | : 4.3, Hazardous materials, which set free flammable gases upon contact with water |
|---------------|------------------------------------------------------------------------------------|

|                                 |                                                      |
|---------------------------------|------------------------------------------------------|
| Recommended storage temperature | : Recommended storage temperature see product label. |
|---------------------------------|------------------------------------------------------|

|                    |                                             |
|--------------------|---------------------------------------------|
| Packaging material | : Suitable material: Clear Glass Bottle/Jar |
|--------------------|---------------------------------------------|

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

**Engineering measures** : No data available

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## Personal protective equipment

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 entrepreneur 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.

### Hand protection

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.11 mm  
Protective index : Full contact  
Manufacturer : KCL 741 Dermatril® L

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.11 mm  
Protective index : Splash contact  
Manufacturer : KCL 741 Dermatril® L

Remarks : 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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Eye 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 and body protection : protective clothing

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

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : chips

Colour : No data available

Odour : No data available

Odour Threshold : No data available  
pH : No data available

Melting point/ range : 356 °F / 180 °C  
Method: lit.

Boiling point/boiling range : 2,448 °F / 1,342 °C  
Method: lit.

Flash point : Not applicable

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Flammability (liquids) : No data available

Burning rate : No data available

Upper explosion limit /  
Upper flammability limit : No data available

Lower explosion limit /  
Lower flammability limit : No data available

Vapour pressure : 1 hPa (1333 °F / 723 °C)

Relative vapour density : No data available

Relative density : No data available

Density : 0.534 g/mL (77 °F / 25 °C)  
Method: lit.

Solubility(ies)  
Water solubility : Risk of violent reaction.

Partition coefficient: n- : No data available

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octanol/water

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity  
Viscosity, dynamic : 0.57 mPa.s (392 °F / 200 °C)

Viscosity, kinematic : No data available

Flow time : No data available

Explosive properties : No data available

Oxidizing properties : none

Molecular weight : 6.94 g/mol

Particle characteristics  
Particle size : No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity : No data available

Reactivity : Reacts violently with water.

Chemical stability : sensitive to moisture

Possibility of hazardous reactions : Risk of ignition or formation of inflammable gases or vapours with:  
Water  
Acids  
Halogenated hydrocarbon  
Carbon dioxide (CO<sub>2</sub>)  
boron trifluoride  
halogen-halogen compounds  
chromyl chloride  
chromium(VI) oxide  
Boranes  
Fluorine  
halogen compounds  
carbon dioxide  
phosphorus  
platinum  
Mercury  
Rust  
Nitric acid

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nitrogen  
Sulphides  
metallic oxides  
sodium carbonate  
Hydrogen  
Risk of explosion with:  
nitrogen  
halogens  
sulfur  
Bromine  
Bromoform  
Chlorine  
Chloroform  
Diazonium compounds  
dichloromethane  
Halogenated hydrocarbon  
iodine  
methyl iodine  
Peroxides  
mineral acids  
Oxygen  
tetrachloromethane  
thionyl chloride  
trichloroethene  
sulphur dioxide  
Sulphuric acid  
silver salt  
Carbon monoxide  
with  
Water  
Water  
with  
Powdered metals

Conditions to avoid : Reacts with water to generate Hydrogen gas.  
Moisture.

Incompatible materials : No data available

Hazardous decomposition products : In the event of fire: see section 5

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

LD50 Intraperitoneal - Mouse - 1,000 mg/kg

**Skin corrosion/irritation**

No data available

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

RTECS: OJ5540000

Large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion., Cough, Shortness of breath, Headache, Nausea, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

No data available

## Persistence and degradability

### Components:

#### **lithium:**

Biodegradability : Remarks: No data available

## Bioaccumulative potential

### Components:

#### **lithium:**

Bioaccumulation : Remarks: No data available

## Mobility in soil

### Components:

#### **lithium:**

Stability in soil : Remarks: No data available

## Other adverse effects

### Components:

#### **lithium:**

Additional ecological information : No data available

## Endocrine disrupting properties

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

### **Disposal methods**

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## SECTION 14. TRANSPORT INFORMATION

### **International Regulations**

#### **IATA-DGR**

UN/ID No. : UN 1415  
Proper shipping name : Lithium  
Class : 4.3  
Packing group : I  
Labels : Division 4.3 - Substances which in contact with water emit flammable gases

Packing instruction (cargo : 487  
aircraft)  
Packing instruction : Not permitted for transport  
(passenger aircraft)

**IMDG-Code**

UN number : UN 1415  
Proper shipping name : LITHIUM

Class : 4.3  
Packing group : I  
Labels : 4.3  
EmS Code : F-G, S-N  
Marine pollutant : no

**Transport in bulk according to IMO instruments**

Not applicable for product as supplied.

**National Regulations**

**49 CFR**

UN/ID/NA number : UN 1415  
Proper shipping name : Lithium

Class : 4.3

Packing group : I  
Labels : Division 4.3 - Substances which in contact with water  
emit flammable gases  
ERG Code : 138  
Marine pollutant : no  
Poison Inhalation Hazard : No

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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**SECTION 15. REGULATORY INFORMATION**

**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Reactivity Hazard  
Acute Health Hazard

**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.

### **US State Regulations**

#### **Massachusetts Right To Know**

lithium 7439-93-2

#### **Pennsylvania Right To Know**

lithium 7439-93-2

#### **Maine Chemicals of High Concern**

Product does not contain any listed chemicals

#### **Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

#### **Washington Chemicals of High Concern**

Product does not contain any listed chemicals

#### **The components of this product are reported in the following inventories:**

US TSCA : All substances listed as active on the TSCA inventory

#### **TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## **SECTION 16. OTHER INFORMATION**

### **Full text of other abbreviations**

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory;

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LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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