

**SIGMA-ALDRICH****Material Safety Data Sheet**

Date Printed: 05/22/2004  
 Date Updated: 03/06/2004  
 Version 1.50

**Section 1 - Product and Company Information**

Product Name	Butyllithium, 1.6M solution in hexanes		
Product Number	186171		
Brand	Aldrich Chemical		
Company	Sigma-Aldrich		
Street Address	3050 Spruce Street		
City, State, Zip, Country	SAINT LOUIS, MO 63103 US		
Technical Phone:	314 771 5765	Emergency Phone:	414 273 3850 Ext. 5996
Fax:	800 325 5052		

**Section 2 - Composition/Information on Ingredient**

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
BUTYLLITHIUM SOLUTION, ~1.6 M IN HEXANE	None	Yes		
Ingredient Name	CAS #	Percent	SARA 313	
N-HEXANE	110-54-3	89.750 %	Yes	
BUTYL LITHIUM	109-72-8	10.250 %	No	
Formula	C4H9Li			
Synonyms				

**Section 3 - Hazards Identification****Emergency Overview**

Flammable (USA) Highly Flammable (EU). Corrosive. Dangerous for the environment. Contact with water liberates extremely flammable gases. Spontaneously flammable in air. Causes burns. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of impaired fertility. Harmful: may cause lung damage if swallowed. Vapors may cause drowsiness and dizziness.

Target organ(s): Nerves.

**HMIS Rating** Health: 3\* Flammability: 3 Reactivity: 2 Special Hazard(s) : Water reactive

**NFPA Rating** Health: 3 Flammability: 3 Reactivity: 2 Special Hazard(s) : Water reactive

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

**Section 4 - First Aid Measures****Oral Exposure**

If swallowed, do not induce vomiting; call a physician immediately.

**Inhalation Exposure**  
 If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

**Dermal Exposure**  
 In case of contact, immediately wash skin with soap and copious amounts of water.

**Eye Exposure**  
 In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

**Section 5 - Fire Fighting Measures**

**Flammable Hazards:** Yes

**Explosion Hazards**  
 Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

**Flash Point:** 10 °F -12 °C

**Autolnition Temp:** N/A **Flammability:** Yes

**Extinguishing Media**

**Suitable**  
 Carbon dioxide, dry chemical powder, or appropriate foam.  
**Unsuitable**  
 Do not use water.

**Firefighting**

**Protective Equipment**  
 Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Specific Hazard(s)**  
 Flammable liquid. Emits toxic fumes under fire conditions.

**Section 6 - Accidental Release Measures****Procedure to be Followed in Case of Leak or Spill**

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

**Procedure(s) of Personal Precaution(s)**

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

**Methods for Cleaning Up**

Cover with dry-ice, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

**Section 7 - Handling and Storage****Handling**

**User Exposure**  
 Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

**Storage**

**Suitable**  
 Keep tightly closed. Keep away from heat, sparks, and open flame. Store under argon. Store at 2-8°C

**Incompatible Materials**

Do not allow contact with water.

**Special Requirements**  
Store under inert gas.

## Section 8 - Exposure Controls / PPE

**Engineering Controls**  
Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

**Personal Protective Equipment**

**Respiratory**  
Government approved respirator.

**Hand**  
Compatible chemical-resistant gloves.

**Eye**  
Chemical safety goggles.

**Other**  
Faceshield (6-inch minimum).

**General Hygiene Measures**  
Remove and wash contaminated clothing promptly. Wash thoroughly after handling.

## Section 9 - Physical/Chemical Properties

**Appearance**  
**Physical State**  
Liquid

**Molecular Weight:** 64.06 AMU

**pH** N/A  
**BP/BP Range** N/A  
**MP/MP Range** N/A  
**Freezing Point** N/A  
**Vapor Pressure** N/A  
**Vapor Density** N/A  
**Saturated Vapor Conc.** N/A  
**SG/Density** 0.68 g/cm<sup>3</sup>

**Bulk Density** N/A

**Odor Threshold** N/A

**Volatile%** N/A

**VOC Content** N/A

**Water Content** N/A

**Solvent Content** N/A

**Evaporation Rate** N/A

**Viscosity** N/A

**Partition Coefficient** N/A

**Decomposition Temp.** N/A

**Flash Point °F** 10 °F

**Flash Point °C** -12 °C

**Explosion Limits** N/A

Method: closed cup  
Method: closed cup

**Flammability**

**Autoignition Temp** N/A

**Solubility** N/A

**N/A = not available**

## Section 10 - Stability and Reactivity

**Stability**  
**Stable**  
Stable.

**Conditions to Avoid**

Do not allow water to enter container because of violent reaction.

**Materials to Avoid**

Oxidizing agents. Incompatible with: chlorine, fluorine, and magnesium perchlorate.

**Hazardous Decomposition Products**

**Hazardous Decomposition Products**

Carbon monoxide, Carbon dioxide, Lithium oxides.

**Hazardous Polymerization**

**Hazardous Polymerization**

Will not occur.

## Section 11 - Toxicological Information

**Route of Exposure**

**Skin Contact**

Causes burns.

**Skin Absorption**

May be harmful if absorbed through the skin.

**Eye Contact**

Causes burns.

**Inhalation**

May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Ingestion**

May be harmful if swallowed.

**Target Organ(s) or System(s)**

Nerves.

**Signs and Symptoms of Exposure**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Exposure can cause: Lung irritation, chest pain, and edema which may be fatal. Gastrointestinal disturbances. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Warning: contains n-hexane (CAS#110-54-3) a suspected neurotoxin.

**Conditions Aggravated by Exposure**

May cause nervous system disturbances.

**RTECS Number:** N/A

**Chronic Exposure - Reproductive Hazard**

Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

## Section 12 - Ecological Information

No data available.

## Section 13 - Disposal Considerations

### Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.  
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.  
Observe all federal, state, and local environmental regulations.

## Section 14 - Transport Information

### DOT

Proper Shipping Name: Lithium alkyls

UN#: 2445

Class: 4.2

Packing Group: Packing Group I

Hazard Label: Spontaneously combustible

Hazard Label: Dangerous when wet

PIH: Not PIH

### IATA

Proper Shipping Name: Lithium alkyls

IATA UN Number: 2445

Hazard Class: 4.2

Not Allowed - Aircraft: Not permitted for air transport.

## Section 15 - Regulatory Information

### EU Additional Classification

Symbol of Danger: F C N

#### Indication of Danger

Highly Flammable. Corrosive. Dangerous for the environment.

Risk Statements R: 11 15 17 34 48/20 51/53 62 65 67

Highly flammable. Contact with water liberates extremely flammable gases. Spontaneously flammable in air. Causes burns. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of impaired fertility. Harmful: may cause lung damage if swallowed. Vapors may cause drowsiness and dizziness.

Safety Statements S: 16 26 36/37/39 43 45 61 62

Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of fire, use dry powder. Never use water. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

### US Classification and Label Text

#### Indication of Danger

Flammable (USA) Highly Flammable (EU). Corrosive. Dangerous for the environment.

#### Risk Statements

Contact with water liberates extremely flammable gases. Spontaneously flammable in air. Causes burns. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of impaired fertility. Harmful: may cause lung damage if swallowed. Vapors may cause drowsiness and dizziness.

#### Safety Statements

Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of fire, use dry powder. Never use water. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

#### US Statements

Target organ(s): Nerves.

### United States Regulatory Information

SARA Listed: Yes

Notes: This product is or contains a component that is subject to SARA313 reporting requirements.

Aldrich Chemical - 186171

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Sigma-Aldrich Corporation  
[www.sigma-aldrich.com](http://www.sigma-aldrich.com)

## Canada Regulatory Information

### WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

## Section 16 - Other Information

### Disclaimer

For R&D use only. Not for drug, household or other uses.

### Warranty

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. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

