

**Material Safety Data Sheet**

Version 4.1  
Revision Date 07/06/2010  
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**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Butyllithium solution  
Product Number : 230707  
Brand : Aldrich  
Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +18003255832  
Fax : +18003255052  
Emergency Phone # : (314) 776-6555

**2. HAZARDS IDENTIFICATION**

**Emergency Overview**

**OSHA Hazards**

Flammable liquid, Pyrophoric, Target Organ Effect, Corrosive, Teratogen

**Target Organs**

Peripheral nervous system., Kidney, Testes.

**GHS Label elements, including precautionary statements**

Pictogram



Signal word : Danger

**Hazard statement(s)**

H225 : Highly flammable liquid and vapour.  
H250 : Catches fire spontaneously if exposed to air.  
H304 : May be fatal if swallowed and enters airways.  
H314 : Causes severe skin burns and eye damage.  
H336 : May cause drowsiness or dizziness.  
H361 : Suspected of damaging fertility or the unborn child.  
H373 : May cause damage to organs through prolonged or repeated exposure if inhaled.  
H411 : Toxic to aquatic life with long lasting effects.

**Precautionary statement(s)**

P210 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P222 : Do not allow contact with air.  
P231 : Handle under inert gas.  
P261 : Avoid breathing dust/fume/gas/mist/vapours/spray.  
P273 : Avoid release to the environment.  
P280 : Wear protective gloves/protective clothing/eye protection/face protection.  
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 : Immediately call a POISON CENTER or doctor/physician.  
P331 : Do NOT induce vomiting.  
P422 : Store contents under inert gas.

**HMS Classification**

Health hazard: 3

Chronic Health Hazard: +  
Flammability: 4  
Physical hazards: 3  
NFPA Rating  
Health hazard: 3  
Fire: 3  
Reactivity Hazard: 3

**Potential Health Effects**

**Inhalation** : May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Vapours may cause drowsiness and dizziness.  
**Skin** : May be harmful if absorbed through skin. Causes skin burns.  
**Eyes** : Causes eye burns.  
**Ingestion** : Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if swallowed. Causes burns.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : Lithium-1-butanide  
n-BuLi

Formula : C<sub>4</sub>H<sub>9</sub>Li

CAS-No.	EC-No.	Index-No.	Concentration
Butyllithium			
109-72-8	203-698-7	-	<= 23.1 %
Hexanes, isomers			
-	-	-	<= 76.9 %

**4. FIRST AID MEASURES**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

**In case of skin contact**

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>) Dry powder

**Extinguishing media which shall not be used for safety reasons**

Water

**Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES**

Aldrich - 230707  
Delivery 0837979846-000010 Purchase Order 40312S

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#### Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

#### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Do not flush with water.

### 7. HANDLING AND STORAGE

#### Precautions for safe handling

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

#### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

Never allow product to get in contact with water during storage.

Recommended storage temperature: 2 - 8 °C

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

#### Personal protective equipment

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Hand protection

Handle with gloves.

##### Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum).

##### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

##### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Appearance

Form liquid

#### Safety data

pH no data available

Melting point no data available

Boiling point no data available

Flash point -22 °C (-8 °F) - closed cup

Ignition temperature no data available

Lower explosion limit no data available

Upper explosion limit no data available

Density 0.693 g/mL at 25 °C (77 °F)

Water solubility no data available

### 10. STABILITY AND REACTIVITY

#### Chemical stability

Stable under recommended storage conditions.

#### Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Reacts violently with water.

#### Conditions to avoid

Heat, flames and sparks. Exposure to moisture.

#### Materials to avoid

acids, Water, Alcohols

#### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Lithium oxides

### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

no data available

#### Skin corrosion/irritation

no data available

#### Serious eye damage/eye irritation

Eyes: 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.

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

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 identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity

no data available

#### Specific target organ toxicity - single exposure (GHS)

no data available

#### Specific target organ toxicity - repeated exposure (GHS)

no data available

#### Aspiration hazard

no data available

#### Potential health effects

**Inhalation** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Vapours may cause drowsiness and dizziness.  
**Ingestion** Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if swallowed. Causes burns.  
**Skin** May be harmful if absorbed through skin. Causes skin burns.  
**Eyes** Causes eye burns.

**Additional Information**

**12. ECOLOGICAL INFORMATION**

**Toxicity**

no data available

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**13. DISPOSAL CONSIDERATIONS**

**Product**

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. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION**

**DOT (US)**

UN-Number: 3394 Class: 4.2 (4.3) Packing group: I  
Proper shipping name: Organometallic substance, liquid, pyrophoric, water-reactive (Butyllithium)  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN-Number: 3394 Class: 4.2 (4.3) Packing group: I EMS-No: F-G, S-M  
Proper shipping name: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (Butyllithium)  
Marine pollutant: No

**IATA**

UN-Number: 3394 Class: 4.2 (4.3)  
Proper shipping name: Organometallic substance, liquid, pyrophoric, water-reactive (Butyllithium)  
IATA Passenger: Not permitted for transport  
IATA Cargo: Not permitted for transport

**15. REGULATORY INFORMATION**

**OSHA Hazards**

Flammable liquid, Pyrophoric, Target Organ Effect, Corrosive, Teratogen

**DSL Status**

This product contains the following components that are not on the Canadian DSL nor NDSL lists.  
CAS-No.

Hexanes, isomers

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

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 311/312 Hazards**

Fire Hazard, Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Butyllithium	109-72-8	2007-03-01
Hexanes, isomers	-	-

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Butyllithium	109-72-8	2007-03-01
Hexanes, isomers	-	-

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**16. OTHER INFORMATION**

**Further information**

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