

## SAFETY DATA SHEET

Creation Date 18-Oct-2010

Revision Date 06-Jan-2023

Revision Number 6

### 1. Identification

**Product Name** n-Butyllithium, 1.6M solution in hexanes

**Cat No. :** AC181270000; AC181270100; AC181270900; AC181271000;  
AC181275000; AC181278000

**Synonyms** No information available

**Recommended Use** Laboratory chemicals.

**Uses advised against** Food, drug, pesticide or biocidal product use.

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

##### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

##### **Emergency Telephone Number**

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### **Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|   |              |
|---|--------------|
| Flammable liquids   | Category 2   |
| Substances/mixtures which, in contact with water, emit flammable gases                | Category 1   |
| Pyrophoric liquids  | Category 1   |
| Skin Corrosion/Irritation   | Category 1 B |
| Serious Eye Damage/Eye Irritation   | Category 1   |
| Reproductive Toxicity   | Category 2   |
| Specific target organ toxicity (single exposure)                                      | Category 3   |
| Target Organs - Respiratory system, Central nervous system (CNS).                     |              |
| Specific target organ toxicity - (repeated exposure)                                  | Category 1   |
| Target Organs - Liver, Central nervous system (CNS), Peripheral Nervous System (PNS). |              |
| Aspiration Toxicity   | Category 1   |

**Label Elements****Signal Word**

Danger

**Hazard Statements**

Highly flammable liquid and vapor

In contact with water releases flammable gases which may ignite spontaneously

Catches fire spontaneously if exposed to air

May be fatal if swallowed and enters airways

Causes severe skin burns and eye damage

May cause respiratory irritation

May cause drowsiness or dizziness

Suspected of damaging fertility

Causes damage to organs through prolonged or repeated exposure

**Precautionary Statements****Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

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

Keep container tightly closed

Ground/bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting equipment

Use only non-sparking tools

Take precautionary measures against static discharge

Do not allow contact with air

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

Handle under inert gas. Protect from moisture

Keep cool

**Response**

Immediately call a POISON CENTER or doctor/physician

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

**Skin**

Wash contaminated clothing before reuse

IF ON SKIN: Immerse in cool water/wrap with wet bandages

Brush off loose particles from skin. Immerse in cool water/wrap with wet bandages

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Ingestion**

Do NOT induce vomiting

Rinse mouth

**Fire**

In case of fire: Use limestone powder, sodium chloride or dry sand to extinguish

**Storage**

Store locked up

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

Store contents under inert gas

Store in a dry place. Store in a closed container

#### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

Toxic to aquatic life with long lasting effects

Reacts violently with water

WARNING. Reproductive Harm - <https://www.p65warnings.ca.gov/>.

### 3. Composition/Information on Ingredients

| Component     | CAS No   | Weight % |
|---------------|----------|----------|
| Hexane        | 110-54-3 | 85       |
| Butyl lithium | 109-72-8 | 15       |

### 4. First-aid measures

|  |   |
|--|---|
| <b>General Advice</b>                      | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.   |
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.   |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.   |
| <b>Inhalation</b>                          | If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately. Risk of serious damage to the lungs (by aspiration).   |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.   |
| <b>Most important symptoms and effects</b> | Difficulty in breathing. Causes burns by all exposure routes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting; Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| <b>Notes to Physician</b>                  | Treat symptomatically   |

### 5. Fire-fighting measures

|                                       |   |
|---------------------------------------|---|
| <b>Suitable Extinguishing Media</b>   | Dry chemical. Limestone powder. Dry sand. approved class D extinguishers. Water mist may be used to cool closed containers. |
| <b>Unsuitable Extinguishing Media</b> | Carbon dioxide (CO <sub>2</sub> ), DO NOT USE WATER, Foam   |
| <b>Flash Point</b>                    | -21 °C / -5.8 °F  |
| <b>Method -</b>                       | (based on components)   |

**Autoignition Temperature** 240 °C / 464 °F

**Explosion Limits**

**Upper** 7.40 vol %  
**Lower** 1.20 vol %  
**Sensitivity to Mechanical Impact** No information available  
**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Reacts violently with water. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

**Hazardous Combustion Products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Thermal decomposition can lead to release of irritating gases and vapors. Butane.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

|               |                     |                    |                         |
|---------------|---------------------|--------------------|-------------------------|
| <b>Health</b> | <b>Flammability</b> | <b>Instability</b> | <b>Physical hazards</b> |
| 3             | 4                   | 2                  | W                       |

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.

**Environmental Precautions** Do not flush into surface water or sanitary sewer system.

**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Do not expose spill to water. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## 7. Handling and storage

**Handling** Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

**Storage.** Keep away from heat, sparks and flame. Keep under nitrogen. Keep refrigerated. Flammables area. Corrosives area. Keep away from water or moist air. Keep container tightly closed in a dry and well-ventilated place. Incompatible Materials. Strong oxidizing agents. Halogens.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component | ACGIH TLV           | OSHA PEL   | NIOSH   | Mexico OEL (TWA) |
|-----------|---------------------|--|---|------------------|
| Hexane    | TWA: 50 ppm<br>Skin | (Vacated) TWA: 50 ppm<br>(Vacated) TWA: 180 mg/m <sup>3</sup><br>TWA: 500 ppm<br>TWA: 1800 mg/m <sup>3</sup> | IDLH: 1100 ppm<br>TWA: 50 ppm<br>TWA: 180 mg/m <sup>3</sup> | TWA: 50 ppm      |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration  
 NIOSH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures** Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

### Personal Protective Equipment

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended Filter type:** low boiling organic solvent. Type AX. Brown. conforming to EN371.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

|   |                                      |
|---|--------------------------------------|
| <b>Physical State</b>                         | Liquid                               |
| <b>Appearance</b>                             | Yellow                               |
| <b>Odor</b>                                   | Petroleum distillates                |
| <b>Odor Threshold</b>                         | No information available             |
| <b>pH</b>                                     | No information available             |
| <b>Melting Point/Range</b>                    | -95 °C / -139 °F                     |
| <b>Boiling Point/Range</b>                    | 60 - 80 °C / 140 - 176 °F @ 760 mmHg |
| <b>Flash Point</b>                            | -21 °C / -5.8 °F                     |
| <b>Method -</b>                               | (based on components)                |
| <b>Evaporation Rate</b>                       | No information available             |
| <b>Flammability (solid,gas)</b>               | Not applicable                       |
| <b>Flammability or explosive limits</b>       |                                      |
| <b>Upper</b>                                  | 7.40 vol %                           |
| <b>Lower</b>                                  | 1.20 vol %                           |
| <b>Vapor Pressure</b>                         | 160 mbar @ 20 °C                     |
| <b>Vapor Density</b>                          | No information available             |
| <b>Specific Gravity</b>                       | 0.680                                |
| <b>Solubility</b>                             | Reacts with water                    |
| <b>Partition coefficient; n-octanol/water</b> | No data available                    |
| <b>Autoignition Temperature</b>               | 240 °C / 464 °F                      |
| <b>Decomposition Temperature</b>              | No information available             |
| <b>Viscosity</b>                              | No information available             |

## 10. Stability and reactivity

**Reactive Hazard** Yes

**Stability** Water reactive. Reacts violently with water. Air sensitive.

**Conditions to Avoid** Incompatible products. Heat, flames and sparks. Exposure to moist air or water. Exposure to air. Exposure to moisture. Keep away from open flames, hot surfaces and sources of ignition.

**Incompatible Materials** Strong oxidizing agents, Halogens

**Hazardous Decomposition Products** Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Thermal decomposition can lead to release of irritating gases and vapors, Butane

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** Reacts violently with water.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

**Oral LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Dermal LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Vapor LC50** Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

#### Component Information

| Component | LD50 Oral              | LD50 Dermal                  | LC50 Inhalation              |
|-----------|------------------------|------------------------------|------------------------------|
| Hexane    | LD50 = 25 g/kg ( Rat ) | LD50 = 3000 mg/kg ( Rabbit ) | LC50 = 48000 ppm ( Rat ) 4 h |

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** Causes burns by all exposure routes

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component     | CAS No   | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|---------------|----------|------------|------------|------------|------------|------------|
| Hexane        | 110-54-3 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Butyl lithium | 109-72-8 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** Possible risk of impaired fertility.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Respiratory system Central nervous system (CNS)

**STOT - repeated exposure** Liver Central nervous system (CNS) Peripheral Nervous System (PNS)

**Aspiration hazard** Category 1

**Symptoms / effects, both acute and delayed** Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** Tumorigenic effects have been reported in experimental animals.

## 12. Ecological information

### Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|-----------|------------------|-----------------|----------|------------|
|           |                  |                 |          |            |

|        |            |   |            |                     |
|--------|------------|---|------------|---------------------|
| Hexane | Not listed | LC50: 2.1 - 2.98 mg/L, 96h flow-through (Pimephales promelas) | Not listed | EC50: 3.87 mg/L/48h |
|--------|------------|---|------------|---------------------|

**Persistence and Degradability** Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its volatility.

| Component | log Pow |
|-----------|---------|
| Hexane    | 4.11    |

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

**UN-No** UN3394  
**Proper Shipping Name** Organometallic substance, liquid, pyrophoric, water-reactive  
**Technical Name** Hexane, Butyl lithium  
**Hazard Class** 4.2  
**Subsidiary Hazard Class** 4.3  
**Packing Group** I

#### TDG

**UN-No** UN3394  
**Proper Shipping Name** ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE  
**Hazard Class** 4.2  
**Subsidiary Hazard Class** 4.3  
**Packing Group** I

#### IATA

**UN-No** UN3394  
**Proper Shipping Name** ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE  
 FORBIDDEN FOR IATA TRANSPORT  
**Hazard Class** 4.2  
**Subsidiary Hazard Class** 4.3  
**Packing Group** I

#### IMDG/IMO

**UN-No** UN3394  
**Proper Shipping Name** ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE  
**Hazard Class** 4.2  
**Subsidiary Hazard Class** 4.3  
**Packing Group** I

### 15. Regulatory information

#### United States of America Inventory

| Component     | CAS No   | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|---------------|----------|------|---|-----------------------------|
| Hexane        | 110-54-3 | X    | ACTIVE  | -                           |
| Butyl lithium | 109-72-8 | X    | ACTIVE  | -                           |

#### Legend:

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)** Not applicable

**TSCA 12(b)** - Notices of Export Not applicable

#### International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component     | CAS No   | DSL | NDL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|---------------|----------|-----|-----|-----------|-------|------|------|------|-------|----------|
| Hexane        | 110-54-3 | X   | -   | 203-777-6 | X     | X    | X    | X    | X     | KE-18626 |
| Butyl lithium | 109-72-8 | X   | -   | 203-698-7 | X     | X    | X    | X    | X     | KE-04320 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

#### U.S. Federal Regulations

##### SARA 313

| Component | CAS No   | Weight % | SARA 313 - Threshold Values % |
|-----------|----------|----------|-------------------------------|
| Hexane    | 110-54-3 | 85       | 1.0                           |

**SARA 311/312 Hazard Categories** See section 2 for more information

**CWA (Clean Water Act)** Not applicable

##### Clean Air Act

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|-----------|-----------|-------------------------|-------------------------|
| Hexane    | X         |                         | -                       |

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA** This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|-----------|--------------------------|----------------|
| Hexane    | 5000 lb                  | -              |

**California Proposition 65** This product contains the following Proposition 65 chemicals.

| Component | CAS No   | California Prop. 65 | Prop 65 NSRL | Category      |
|-----------|----------|---------------------|--------------|---------------|
| Hexane    | 110-54-3 | Male Reproductive   | -            | Developmental |

#### **U.S. State Right-to-Know Regulations**

| Component     | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| Hexane        | X             | X          | X            | X        | X            |
| Butyl lithium | -             | X          | X            | -        | -            |

#### **U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
 DOT Marine Pollutant Y  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.



**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH**

| Component     | CAS No   | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|---------------|----------|---|---|---|
| Hexane        | 110-54-3 | -   | Use restricted. See item 75. (see link for restriction details)               | -   |
| Butyl lithium | 109-72-8 | -   | -   | -   |

<https://echa.europa.eu/substances-restricted-under-reach>

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

| Component     | CAS No   | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|---------------|----------|----------|------------------------------|---------------------------|--|
| Hexane        | 110-54-3 | Listed   | Not applicable               | Not applicable            | Not applicable                             |
| Butyl lithium | 109-72-8 | Listed   | Not applicable               | Not applicable            | Not applicable                             |

| Component     | CAS No   | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|---------------|----------|---|--|----------------------------|------------------------------------|
| Hexane        | 110-54-3 | Not applicable  | Not applicable   | Not applicable             | Annex I - Y42                      |
| Butyl lithium | 109-72-8 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

## 16. Other information

**Prepared By** Regulatory Affairs  
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**Creation Date** 18-Oct-2010  
**Revision Date** 06-Jan-2023  
**Print Date** 06-Jan-2023

**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**