

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 5.0 Revision Date 19.12.2012

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name : Hexyllithium solution

Product Number : 468568

Brand : Aldrich

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Company Ltd.
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1.4 Emergency telephone number

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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Flammable liquids (Category 2)

Pyrophoric liquids (Category 1)

Substances, which in contact with water, emit flammable gases (Category 1)

Skin corrosion (Category 1A)

Reproductive toxicity (Category 2)

Specific target organ toxicity - single exposure (Category 3)

Specific target organ toxicity - repeated exposure (Category 2)

Aspiration hazard (Category 1)

Chronic aquatic toxicity (Category 2)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

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

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram



Signal word

Danger

| | |
|---------------------|--|
| Hazard statement(s) | |
| H225 | Highly flammable liquid and vapour. |
| H250 | Catches fire spontaneously if exposed to air. |
| H260 | In contact with water releases flammable gases which may ignite spontaneously. |
| H304 | May be fatal if swallowed and enters airways. |
| H314 | Causes severe skin burns and eye damage. |
| H336 | May cause drowsiness or dizziness. |
| H361f | Suspected of damaging fertility. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| 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. |
| 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. |
| P370 + P378 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. |
| P422 | Store contents under inert gas. |

| | |
|--------------------------------------|------------------------------|
| Supplemental Hazard information (EU) | |
| EUH014 | Reacts violently with water. |

According to European Directive 67/548/EEC as amended.

| | |
|------------------|---|
| Hazard symbol(s) |  |
|------------------|---|

| | |
|--------------|---|
| R-phrases(s) | |
| R11 | Highly flammable. |
| R14/15 | Reacts violently with water, liberating extremely flammable gases. |
| R17 | Spontaneously flammable in air. |
| R35 | Causes severe burns. |
| R48/20 | Harmful: danger of serious damage to health by prolonged exposure through inhalation. |
| R51/53 | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R62 | Possible risk of impaired fertility. |
| R65 | Harmful: may cause lung damage if swallowed. |
| R67 | Vapours may cause drowsiness and dizziness. |
| S-phrases(s) | |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| S36/37/39 | Wear suitable protective clothing, gloves and eye/face protection. |
| S43 | In case of fire, use sand, dry chemical or alcohol-resistant foam. |
| S45 | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |
| S61 | Avoid release to the environment. Refer to special instructions/ Safety data sheets. |
| S62 | If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. |

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

| | | |
|------------------|---|-----------------------------------|
| Formula | : | C ₆ H ₁₃ Li |
| Molecular Weight | : | 92.11 g/mol |

| Component | Classification | Concentration |
|-----------|----------------|---------------|
|-----------|----------------|---------------|

| | | | |
|-----------------------|--------------|---|-----------|
| n-Hexane | | | |
| CAS-No. | 110-54-3 | Flam. Liq. 2; Skin Irrit. 2; Repr. 2; STOT SE 3; STOT RE 2; Asp. Tox. 1; Aquatic Chronic 2; H225, H304, H315, H336, H361f, H373, H411 | - |
| EC-No. | 203-777-6 | F, Xn, N, Repr.Cat.3, R11 - R38 - R48/20 - R62 - R65 - R67 - R51/53 | |
| Index-No. | 601-037-00-0 | | |
| n-Hexyllithium | | | |
| CAS-No. | 21369-64-2 | Pyr. Sol. 1; Water-react. 1; Skin Corr. 1A; H250, H260, H314, EUH014 | 25 - 50 % |
| EC-No. | 404-950-0 | F, C, R14/15 - R17 - R35 | |
| Index-No. | 003-002-00-X | | |

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

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

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.

4.2 Most important symptoms and effects, both acute and delayed

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

4.3 Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Dry powder

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Lithium oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

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.

6.2 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.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

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

7.2 Conditions for safe storage, including any incompatibilities

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

Recommended storage temperature: 2 - 8 °C

Handle and store under inert gas.

7.3 Specific end use(s)

no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

| Component | CAS-No. | Value | Control parameters | Basis |
|-----------|----------|---|--------------------------------|---|
| n-Hexane | 110-54-3 | TWA | 20 ppm 72 mg/m ³ | UK. EH40 WEL - Workplace Exposure Limits |
| | Remarks | Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used | | |
| | | TWA | 20 ppm 72 mg/m ³ | Europe. Indicative occupational exposure limit values |
| | | Indicative | | |

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Protective gloves against thermal risks

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (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).

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| a) Appearance | Form: clear, liquid Colour: dark yellow |
| b) Odour | no data available |
| c) Odour Threshold | no data available |
| d) pH | no data available |
| e) Melting point/freezing point | no data available |
| f) Initial boiling point and boiling range | 69 °C at 1,013 hPa |
| g) Flash point | -9 °C - closed cup |
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or explosive limits | no data available |
| k) Vapour pressure | no data available |
| l) Vapour density | no data available |
| m) Relative density | 0.700 g/cm ³ |
| n) Water solubility | no data available |
| o) Partition coefficient: n-octanol/water | no data available |
| p) Auto-ignition temperature | The substance or mixture is pyrophoric with the category 1. |
| q) Decomposition temperature | no data available |
| r) Viscosity | no data available |
| s) Explosive properties | no data available |
| t) Oxidizing properties | no data available |

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
no data available

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight. Exposure to moisture.

10.5 Incompatible materials
Oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
no data available

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.

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

Potential health effects

| | |
|-------------------|--|
| Inhalation | 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 | Harmful if swallowed. Causes burns. Aspiration hazard if swallowed - can enter lungs and cause damage. |
| Skin | Harmful if absorbed through skin. Causes skin burns. |
| Eyes | Causes eye burns. |

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 3394

IMDG: 3394

IATA: 3394

14.2 UN proper shipping name

ADR/RID: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (n-Hexane, n-Hexyllithium)

IMDG: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (n-Hexane, n-Hexyllithium)

IATA: Organometallic substance, liquid, pyrophoric, water-reactive (n-Hexane, n-Hexyllithium)

Passenger Aircraft: Not permitted for transport

Cargo Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

ADR/RID: 4.2 (4.3)

IMDG: 4.2 (4.3)

IATA: 4.2 (4.3)

14.4 Packaging group

ADR/RID: I

IMDG: I

IATA: -

14.5 Environmental hazards

ADR/RID: no

IMDG Marine Pollutant: no

IATA: no

14.6 Special precautions for user

no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available**15.2 Chemical Safety Assessment**
no data available

16. OTHER INFORMATION**Text of H-code(s) and R-phrases mentioned in Section 3**

| | |
|-----------------|---|
| Aquatic Chronic | Chronic aquatic toxicity |
| Asp. Tox. | Aspiration hazard |
| EUH014 | Reacts violently with water. |
| Flam. Liq. | Flammable liquids |
| H225 | Highly flammable liquid and vapour. |
| H250 | Catches fire spontaneously if exposed to air. |
| H260 | In contact with water releases flammable gases which may ignite spontaneously. |
| H304 | May be fatal if swallowed and enters airways. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H336 | May cause drowsiness or dizziness. |
| H361f | Suspected of damaging fertility. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H411 | Toxic to aquatic life with long lasting effects. |
| Pyr. Sol. | Pyrophoric solids |
| Repr. | Reproductive toxicity |
| Skin Corr. | Skin corrosion |
| Skin Irrit. | Skin irritation |
| STOT RE | Specific target organ toxicity - repeated exposure |
| STOT SE | Specific target organ toxicity - single exposure |
| C | Corrosive |
| F | Highly flammable |
| N | Dangerous for the environment |
| R11 | Highly flammable. |
| R14/15 | Reacts violently with water, liberating extremely flammable gases. |
| R17 | Spontaneously flammable in air. |
| R35 | Causes severe burns. |
| R38 | Irritating to skin. |
| R48/20 | Harmful: danger of serious damage to health by prolonged exposure through inhalation. |
| R51/53 | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R62 | Possible risk of impaired fertility. |
| R65 | Harmful: may cause lung damage if swallowed. |
| R67 | Vapours may cause drowsiness and dizziness. |
| Repr.Cat.3 | Toxic to Reproduction Category 3 |
| Xn | Harmful |

Further information

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