

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name ***n-Hexyllithium, 33% (2.47M) in hexane***

Stock number: L15102
CAS Number: 21369-64-2

1.2 Relevant identified uses of the substance or mixture and uses advised against.
Identified use: SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Alfa Aesar GmbH & Co.KG
A Johnson Matthey Company
Zeppelinstr. 7b
76185 Karlsruhe / Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300
Email: tech@alfa.com
www.alfa.com

Informing department: Product safety Tel + +049 (0) 7275 988687-0
1.4 Emergency telephone number: Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)
Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**
Classification according to Regulation (EC) No 1272/2008

 GHS02 flame

Pyr. Liq. 1 H250 Catches fire spontaneously if exposed to air.

 GHS08 health hazard

Repr. 2 H361f Suspected of damaging fertility.

STOT RE 2 H373 May cause damage to the peripheral nervous system, the lung, the kidneys, the liver, the reproductive system and the brain through prolonged or repeated exposure. Route of exposure: Inhalative.

 GHS05 corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

 GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

 GHS07

STOT SE 3 H336 May cause drowsiness or dizziness.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

 C; Corrosive

R35: Causes severe burns.

 Xn; Harmful

R48/20-62: Harmful: danger of serious damage to health by prolonged exposure through inhalation. Possible risk of impaired fertility.

 F; Highly flammable

R17: Spontaneously flammable in air.

 N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R14-67: Reacts violently with water. Vapours may cause drowsiness and dizziness.

Information concerning particular hazards for human and environment:

Has a narcotizing effect.

Other hazards that do not result in classification

No information known.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008**

Hazard pictograms

Signal word

Hazard statements

The substance is classified and labelled according to the CLP regulation.

GHS02, GHS05, GHS07, GHS08, GHS09

Danger

H250 Catches fire spontaneously if exposed to air.

H314 Causes severe skin burns and eye damage.

H361f Suspected of damaging fertility.

H336 May cause drowsiness or dizziness.

H373 May cause damage to the peripheral nervous system, the lung, the kidneys, the liver, the reproductive system and the brain through prolonged or repeated exposure. Route of exposure: Inhalative.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P309 IF exposed or if you feel unwell:

P310 Immediately call a POISON CENTER or doctor/physician.

P370+P378 In case of fire: Use for extinction: Fire-extinguishing powder.

EUH014 Reacts violently with water.

Additional information:**2.3 Other hazards****Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

SECTION 3: Composition/information on ingredients**3.1 Substances**

CAS# Designation: 21369-64-2 n-Hexyllithium, 33% (2.47M) in hexane

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SECTION 4: First aid measures**4.1 Description of first aid measures****General information****After inhalation**

Instantly remove any clothing soiled by the product.
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

Rinse opened eye for several minutes under running water. Then consult doctor.

Seek medical treatment.

After skin contact**After eye contact****After swallowing****4.2 Most important symptoms and effects, both acute and delayed****4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

No further relevant information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents**

Dry sand
Limestone powder
Extinguishing powder. Do not use water.

For safety reasons unsuitable extinguishing agents

Water.

5.2 Special hazards arising from the substance or mixture

Reacts violently with water
Spontaneously flammable in air.
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Lithium oxide

5.3 Advice for firefighters**Protective equipment:**

Wear self-contained breathing apparatus.
Wear full protective suit.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

Keep away from ignition sources

6.2 Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Do not allow product to reach sewage system or water bodies.

Do not allow to enter the ground/soil.

6.3 Methods and material for containment and cleaning up:

Keep away from ignition sources.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Keep away from ignition sources.

Prevention of secondary hazards:**6.4 Reference to other sections**

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Handle under dry protective gas.
Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Substance/product is auto-flammable.

7.2 Conditions for safe storage, including any incompatibilities**Storage Requirements to be met by storerooms and containers:**

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.
Store away from air.
Store away from water.

Further information about storage conditions:

Store under dry inert gas.
This product is moisture sensitive.
This product is air sensitive.
Protect from humidity and keep away from water.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Store in a locked cabinet or with access restricted to technical experts or their assistants.
No further relevant information available.

7.3 Specific end use(s)**SECTION 8: Exposure controls/personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with critical values that require monitoring at the workplace:

n-Hexane

	ppm	
ACGIH TLV	50	(skin)
Belgium TWA	50	
France TWA	50	
Germany TWA	50	
Netherlands TWA	100	
Switzerland TWA	50, 100-STEEL	
United Kingdom TWA	100, 125-STEEL	
Russia TWA	40	
Denmark	50	
Finland	50, 150-STEEL	
Hungary TWA	100 mg/m ³ , 200 mg/m ³ -STEEL	

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Poland TWA	400 mg/m ³
Sweden	25, 50-STEEL
USA PEL	500

8.1 Control parameters**Components with critical values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information:

No data

8.2 Exposure controls**Personal protective equipment
General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.

Breathing equipment:

Maintain an ergonomically appropriate working environment.

Protection of hands:

Use breathing protection with high concentrations.

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Material of gloves

Impervious gloves

Penetration time of glove material

Not determined

Eye protection:

Tightly sealed safety glasses.

Body protection:Full face protection
Protective work clothing.**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Liquid
Colour:	Yellow
Smell:	Petroleum-like
Odour threshold:	Not determined.

pH-value:	Not determined.
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Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point:	-10 °C
Inflammability (solid, gaseous)	Not applicable.
Ignition temperature:	280 °C
Decomposition temperature:	Not determined
Self-inflammability:	Spontaneously flammable in air.
Critical values for explosion:	
Lower:	1,2 Vol %
Upper:	8,3 Vol %
Steam pressure:	Not determined
Density at 20 °C	0,69 g/cm ³
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Reacts violently
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.

9.2 Other information

No further relevant information available.

SECTION 10: Stability and reactivity**10.1 Reactivity**

Reacts violently with water.
Catches fire spontaneously if exposed to air.
Stable under recommended storage conditions.

10.2 Chemical stability**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions

Spontaneously flammable in air.

10.5 Incompatible materials:

Reacts violently with water

Air

Oxidizing agents

Water/moisture

Lithium oxide

Carbon monoxide and carbon dioxide

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity:**

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

LD/LC50 values that are relevant for classification:

No data

Skin irritation or corrosion:

Causes severe skin burns.

Eye irritation or corrosion:

Causes serious eye damage.

Sensitization:

No sensitizing effect known.

Germ cell mutagenicity:

No effects known.

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:

Suspected of damaging fertility or the unborn child.

Specific target organ system toxicity - repeated exposure:

May cause damage to the peripheral nervous system, the lung, the kidneys, the liver, the reproductive system and the brain through prolonged or repeated exposure. Route of exposure: Inhalative.

Specific target organ system toxicity - single exposure:

May cause drowsiness or dizziness.

Aspiration hazard:

No effects known.

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Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. (Contd. of page 3)

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity: No further relevant information available.
12.2 Persistence and degradability No further relevant information available.
12.3 Bioaccumulative potential No further relevant information available.
12.4 Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Toxic for fish
Additional ecological information:
General notes: Do not allow product to reach ground water, water bodies or sewage system.
Do not allow material to be released to the environment without proper governmental permits.
Toxic for aquatic organisms
Water hazard class 2 (Self-assessment): hazardous for water.
Danger to drinking water if even small quantities leak into soil.
Also poisonous for fish and plankton in water bodies.
Toxic to aquatic life.
May cause long lasting harmful effects to aquatic life.
Avoid transfer into the environment.

12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

UN-Number
ADR, IMDG, IATA UN3392

14.2 UN proper shipping name
ADR 3392 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC (n-Hexyllithium, 33% (2.47M) in hexane)
IMDG ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC (n-Hexyllithium, 33% (2.47M) in hexane), MARINE POLLUTANT
IATA ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC

14.3 Transport hazard class(es)
ADR

Class 4.2 (S5) Substances liable to spontaneous combustion.
Label 4.2
IMDG


Class 4.2 Substances liable to spontaneous combustion.
Label 4.2
IATA


Class 4.2 Substances liable to spontaneous combustion.
Label 4.2

Packing group
ADR, IMDG, IATA I

14.5 Environmental hazards:
Marine pollutant: Environmentally hazardous substance, liquid; Marine Pollutant
Yes (P)
Symbol (fish and tree)

14.6 Special precautions for user
Kemler Number: Warning: Substances liable to spontaneous combustion.
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14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC
Code Not applicable.

Transport/Additional information:

ADR
Excepted quantities (EQ): E0
Limited quantities (LQ) 0
Transport category 0
Tunnel restriction code B/E

UN "Model Regulation": UN3392, ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC (n-Hexyllithium, 33% (2.47M) in hexane), 4.2, I

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Australian Inventory of Chemical
Substances Substance is not listed.
Standard for the Uniform Scheduling of
Drugs and Poisons Substance is not listed.

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 02.07.2013

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National regulations
Information about limitation of use: Employment restrictions concerning young persons must be observed.
Employment restrictions concerning women of child-bearing age must be observed.
For use only by technically qualified individuals.

Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water.
Other regulations, limitations and prohibitive regulations

ELINCS (European List of Notified Chemical Substances) Substance is not listed.

Substances of very high concern (SVHC) according to REACH, Article 57 Substance is not listed.

REACH - Pre-registered substances Substance is not listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.

Abbreviations and acronyms: RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

P: Marine Pollutant

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

DE/E