



n-BUTYLLITHIUM, 2.5M in hexanes (22-24 wt %)

Safety Data Sheet OMLI012

Date of issue: 14/06/2016

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Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
 Physical state : Liquid
 Product name : n-BUTYLLITHIUM, 2.5M in hexanes (22-24 wt %)
 Product code : OMLI012
 Formula : C₄H₁₁LiSi
 Chemical family : METAL ALKYL

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 2	H225
Pyrophoric Liquids, Category 1	H250
Substances and Mixtures which, in contact with water, emit flammable gases, Category 1	H260
Skin corrosion/irritation, Category 1B	H314
Serious eye damage/eye irritation, Category 1	H318
Reproductive toxicity, Category 2	H361
Specific target organ toxicity — Single exposure, Category 3, Narcosis	H336
Specific target organ toxicity — Repeated exposure, Category 2	H373
Hazardous to the aquatic environment — Chronic Hazard, Category 2	H411

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

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2.2. Label elements

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

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazardous ingredients :

Hexane; Butyl lithium

Hazard statements (CLP) :

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.
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.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) :

P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P222 - Do not allow contact with air.
P223 - Do not allow contact with water.
P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hexane	(CAS-No.) 110-54-3 (EC-No.) 203-777-6 (EC Index-No.) 601-037-00-0	76 - 78	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Butyl lithium	(CAS-No.) 109-72-8 (EC-No.) 203-698-7	22 - 24	Pyr. Liq. 1, H250 Water-react. 1, H260 Skin Corr. 1B, H314 Eye Dam. 1, H318

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Hexane	(CAS-No.) 110-54-3 (EC-No.) 203-777-6 (EC Index-No.) 601-037-00-0	(5 =<C < 100) STOT RE 2, H373

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.
- First-aid measures after skin contact : Wash with plenty of water/.... Get immediate medical advice/attention.

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First-aid measures after eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects	: Suspected of damaging fertility. Suspected of damaging the unborn child. Causes damage to organs through prolonged or repeated exposure.
Symptoms/effects after inhalation	: May cause drowsiness or dizziness. Direct respiratory contact is usually not possible, but will cause burns. Inhalation of combustion products can cause irritation.
Symptoms/effects after skin contact	: Causes (severe) skin burns.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: LITHIUM HYDROXIDE, the oxidation/hydrolysis product, is considered moderately toxic.
Chronic symptoms	: Chronic Toxicity-hexane: Overexposure to hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Dry chemical powder followed by sand or dolomite.
Unsuitable extinguishing media	: Water.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Catches fire spontaneously if exposed to air. Pyrophoric liquid. Highly flammable liquid and vapour.
Explosion hazard	: Container may explode during fire conditions. May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters

Firefighting instructions	: If material is ignited, allow to burn. Exercise caution when fighting any chemical fire. In case of fire: stop leak if safe to do so.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.
Other information	: Can spontaneously ignite on contact with air. Pyrophoric liquid and gas.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Eliminate every possible source of ignition. Use special care to avoid static electric charges.
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6.1.1. For non-emergency personnel

Protective equipment	: Wear protective equipment as described in Section 8.
Emergency procedures	: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	: Concentrate containment efforts to adjacent combustibles.
Methods for cleaning up	: Cover with dry chemical extinguishing powder, lime, sand or soda ash. Do not use water. Remove combustible materials in the vicinity of the spill. Allow time for decomposition or fire to burn out, then sweep material and transfer to a suitable container for disposal. Use only non-sparking tools.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Handle empty containers with care because residual vapours are flammable. Do not allow contact with water. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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Precautions for safe handling	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid all eye and skin contact and do not breathe vapour and mist. Use only outdoors or in a well-ventilated area. Do not allow contact with water. Handle under inert gas. Protect from moisture. Only personnel fully trained in the handling of pyrophoric materials should be permitted to work with this material. Use only non-sparking tools. Do not allow contact with air.
Hygiene measures	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Laboratory and production areas must be equipped with special fire-extinguishing media for pyrophorics. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions	: Keep container tightly closed. Flammable and combustible materials should not be stored in or near working areas for pyrophorics. Store in a dry place. Protect from moisture.
Incompatible materials	: Alkalis. Bromine. Chlorine. Metal salts. Oxidizing agent. Precious metals. Water.
Storage area	: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hexane (110-54-3)		
EU	IOELV TWA (mg/m ³)	72 mg/m ³
EU	IOELV TWA (ppm)	20 ppm
Austria	MAK (mg/m ³)	72 mg/m ³
Austria	MAK (ppm)	20 ppm
Austria	MAK Short time value (mg/m ³)	288 mg/m ³
Austria	MAK Short time value (ppm)	80 ppm
Belgium	Limit value (mg/m ³)	72 mg/m ³
Belgium	Limit value (ppm)	20 ppm
Bulgaria	OEL TWA (mg/m ³)	72 mg/m ³
Bulgaria	OEL TWA (ppm)	20 ppm
Cyprus	OEL TWA (mg/m ³)	72 mg/m ³
Cyprus	OEL TWA (ppm)	20 ppm
France	VME (mg/m ³)	72 mg/m ³ (restrictive limit)
France	VME (ppm)	20 ppm (restrictive limit)
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	180 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	50 ppm
Germany	TRGS 903 Biological limit value	5 mg/l (Medium: urine - Time: end of shift - Parameter: 2,5-Hexandione plus 4,5-Dihydroxy-2-hexanone (after hydrolysis))
Gibraltar	Eight hours mg/m ³	72 mg/m ³
Gibraltar	Eight hours ppm	20 ppm
Greece	OEL TWA (mg/m ³)	72 mg/m ³
Greece	OEL TWA (ppm)	20 ppm
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	50 ppm
Italy	OEL TWA (mg/m ³)	72 mg/m ³
Italy	OEL TWA (ppm)	20 ppm
Latvia	OEL TWA (mg/m ³)	72 mg/m ³
Latvia	OEL TWA (ppm)	20 ppm
USA IDLH	US IDLH (ppm)	1100 ppm (10% LEL)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	180 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	50 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1800 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	500 ppm
Spain	VLA-ED (mg/m ³)	72 mg/m ³ (indicative limit value)
Spain	VLA-ED (ppm)	20 ppm (indicative limit value)
Switzerland	KZGW (mg/m ³)	1440 mg/m ³
Switzerland	KZGW (ppm)	400 ppm

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Hexane (110-54-3)		
Switzerland	MAK (mg/m ³)	180 mg/m ³
Switzerland	MAK (ppm)	50 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	72 mg/m ³
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	144 mg/m ³
United Kingdom	WEL TWA (mg/m ³)	72 mg/m ³
United Kingdom	WEL TWA (ppm)	20 ppm
United Kingdom	WEL STEL (mg/m ³)	216 mg/m ³ (calculated)
United Kingdom	WEL STEL (ppm)	60 ppm (calculated)
Czech Republic	Expoziční limity (PEL) (mg/m ³)	70 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	72 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	20 ppm
Finland	HTP-arvo (8h) (mg/m ³)	72 mg/m ³
Finland	HTP-arvo (8h) (ppm)	20 ppm
Hungary	AK-érték	72 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	72 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	20 ppm
Ireland	OEL (15 min ref) (mg/m ³)	216 mg/m ³ (calculated)
Ireland	OEL (15 min ref) (ppm)	60 ppm (calculated)
Lithuania	IPRV (mg/m ³)	72 mg/m ³
Lithuania	IPRV (ppm)	20 ppm
Malta	OEL TWA (mg/m ³)	72 mg/m ³
Malta	OEL TWA (ppm)	20 ppm
Norway	Grenseverdier (AN) (mg/m ³)	72 mg/m ³
Norway	Grenseverdier (AN) (ppm)	20 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m ³)	72 mg/m ³
Norway	Grenseverdier (Korttidsverdi) (ppm)	20 ppm
Poland	NDS (mg/m ³)	72 mg/m ³
Romania	OEL TWA (mg/m ³)	72 mg/m ³
Romania	OEL TWA (ppm)	20 ppm
Sweden	nivågränsvärde (NVG) (mg/m ³)	90 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	25 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	180 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	50 ppm
Canada (Quebec)	VEMP (mg/m ³)	176 mg/m ³
Canada (Quebec)	VEMP (ppm)	50 ppm
Australia	TWA (mg/m ³)	72 mg/m ³
Australia	TWA (ppm)	20 ppm
Portugal	OEL TWA (mg/m ³)	72 mg/m ³ (indicative limit value)
Portugal	OEL TWA (ppm)	20 ppm (indicative limit value)
Portugal	OEL chemical category (PT)	skin - potential for cutaneous exposure

8.2. Exposure controls

Appropriate engineering controls:

Glove box or sealed system under inert atmosphere is required. Provide local exhaust or general room ventilation.

Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:

Neoprene or nitrile rubber gloves

Eye protection:

Chemical goggles or face shield. Contact lenses should not be worn

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Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear liquid. Fumes and ignites in air.
Molecular mass	: 64.06 g/mol
Colour	: No data available
Odour	: No data available
Odour threshold	: No data available
Refractive index	: No additional information available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: < 0 °C
Boiling point	: No data available
Flash point	: -23 °C
Auto-ignition temperature	: < 100 °C PYROPHORIC
Decomposition temperature	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapour, Catches fire spontaneously if exposed to air.
Vapour pressure	: 150 mm Hg @ 20°C
Relative vapour density at 20 °C	: 3 (hexane)
Relative density	: 0.695
Solubility	: Reacts violently with water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 1.8 - 11.6 vol % (lower; upper: hexane)

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable in sealed containers under dry inert atmosphere.

10.3. Possibility of hazardous reactions

The product can generate small amounts of butane when exposed to alkalis and protic materials such as water and alcohol. Decomposes at temperatures greater than 140°C.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Alkalis. Bromine. Chlorine. Metal salts. Oxidizing agent. Precious metals. Water.

10.6. Hazardous decomposition products

Aluminium oxides. n-Butanol. Carbon monoxide. Formaldehyde. Hydrogen. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

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LD50 oral rat	25 g/kg
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (ppm)	48000 ppm/4h
ATE CLP (dermal)	3000 mg/kg bodyweight
ATE CLP (gases)	48000 ppmv/4h

Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Suspected of damaging fertility or the unborn child. Hexane is mildly toxic by inhalation and is reported as an experimental teratogen.
STOT-single exposure	: May cause drowsiness or dizziness.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Impairment of coordination, distorted perception and CNS disturbances have been reported to Hexane.
Symptoms/effects after inhalation	: May cause drowsiness or dizziness. Direct respiratory contact is usually not possible, but will cause burns. Inhalation of combustion products can cause irritation.
Symptoms/effects after skin contact	: Causes (severe) skin burns.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: LITHIUM HYDROXIDE, the oxidation/hydrolysis product, is considered moderately toxic.
Chronic symptoms	: Chronic Toxicity-hexane: Overexposure to hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs.
Reason for classification	: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Toxic to aquatic life.
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Toxic to aquatic life with long lasting effects.

Hexane (110-54-3)

LC50 fish 1	2.1 - 2.98 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
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12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Product/Packaging disposal recommendations	: Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility. This is a RCRA hazardous waste: 40 CFR 261.21 (i.e. ignitable) 40 CFR 261.23 (i.e. reactive).
Additional information	: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	: Avoid release to the environment.

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SECTION 14: Transport information

14.1. UN number

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR)	: 3394
UN-No. (IMDG)	: 3394
UN-No. (IATA)	: 3394
UN-No. (ADN)	: 3394
UN-No. (RID)	: 3394

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Proper Shipping Name (IMDG)	: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Proper Shipping Name (IATA)	: Organometallic substance, liquid, pyrophoric, water-reactive
Proper Shipping Name (ADN)	: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER REACTIVE
Proper Shipping Name (RID)	: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Transport document description (ADR)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (n-BUTYLLITHIUM, 2.5M in hexanes (22-24 wt %)), 4.2 (4.3), I, (B/E), ENVIRONMENTALLY HAZARDOUS
Transport document description (IMDG)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (n-BUTYLLITHIUM, 2.5M in hexanes (22-24 wt %)), 4.2 (4.3), I, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
Transport document description (IATA)	: UN 3394 Organometallic substance, liquid, pyrophoric, water-reactive (n-BUTYLLITHIUM, 2.5M in hexanes (22-24 wt %)), 4.2, ENVIRONMENTALLY HAZARDOUS
Transport document description (ADN)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER REACTIVE (n-BUTYLLITHIUM, 2.5M in hexanes (22-24 wt %)), 4.2 (4.3), I, ENVIRONMENTALLY HAZARDOUS
Transport document description (RID)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (n-BUTYLLITHIUM, 2.5M in hexanes (22-24 wt %)), 4.2 (4.3), I, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 4.2 (4.3)
Danger labels (ADR)	: 4.2, 4.3



IMDG

Transport hazard class(es) (IMDG)	: 4.2 (4.3)
Danger labels (IMDG)	: 4.2, 4.3



IATA

Transport hazard class(es) (IATA)	: 4.2 (4.3)
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ADN

Transport hazard class(es) (ADN)	: 4.2 (4.3)
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Danger labels (ADN) : 4.2, 4.3



RID

Transport hazard class(es) (RID) : 4.2 (4.3)

Danger labels (RID) : 4.2, 4.3



14.4. Packing group

Packing group (ADR) : I
Packing group (IMDG) : I
Packing group (IATA) : Not applicable
Packing group (ADN) : I
Packing group (RID) : I

14.5. Environmental hazards

Dangerous for the environment : Yes
Marine pollutant : Yes
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : SW
Special provisions (ADR) : 274
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E0
Packing instructions (ADR) : P400
Special packing provisions (ADR) : PP86
Mixed packing provisions (ADR) : MP2
Portable tank and bulk container instructions (ADR) : T21
Portable tank and bulk container special provisions (ADR) : TP2, TP7, TP36, TP41
Tank code (ADR) : L21DH
Tank special provisions (ADR) : TU4, TU14, TU22, TC1, TE21, TM1
Vehicle for tank carriage : AT
Transport category (ADR) : 0
Special provisions for carriage - Packages (ADR) : V1
Special provisions for carriage - Operation (ADR) : S20
Hazard identification number (Kemler No.) : X333
Orange plates :



Tunnel restriction code (ADR) : B/E
EAC code : 4W

- Transport by sea

Special provisions (IMDG) : 274

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Packing instructions (IMDG)	: P400
Special packing provisions (IMDG)	: PP86
Tank instructions (IMDG)	: T21
Tank special provisions (IMDG)	: TP2, TP7, TP36, TP41
EmS-No. (Fire)	: F-G
EmS-No. (Spillage)	: S-M
Stowage category (IMDG)	: D
Stowage and handling (IMDG)	: H1
Segregation (IMDG)	: SG35, SG63, SG26
Properties and observations (IMDG)	: Highly flammable liquid. Liable to ignite spontaneously in air. In contact with air, evolve irritating and slightly toxic fumes. React violently with moisture, water and acids evolving flammable gas.

- Air transport

PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden
CAO packing instructions (IATA)	: Forbidden
CAO max net quantity (IATA)	: Forbidden
ERG code (IATA)	: 4W

- Inland waterway transport

Classification code (ADN)	: SW
Special provisions (ADN)	: 274
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E0
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 0

- Rail transport

Classification code (RID)	: SW
Special provisions (RID)	: 274
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P400
Special packing provisions (RID)	: PP86
Mixed packing provisions (RID)	: MP2
Portable tank and bulk container instructions (RID)	: T21
Portable tank and bulk container special provisions (RID)	: TP2, TP7, TP36, TP41
Tank codes for RID tanks (RID)	: L21DH
Special provisions for RID tanks (RID)	: TU4, TU14, TU22, TU38, TC1, TE21, TE22, TE25, TM1
Transport category (RID)	: 0
Special provisions for carriage – Packages (RID)	: W1
Hazard identification number (RID)	: X333

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

n-BUTYLLITHIUM, 2.5M in hexanes (22-24 wt %)

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Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 2, Significantly hazardous to water (Classification according to AwSV, Annex 1)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : Hexane, Butyl lithium are listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : Hexane is listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

Denmark

Class for fire hazard : Add boilingpoint

Store unit : Add boilingpoint

Classification remarks : Add boilingpoint; Emergency management guidelines for the storage of flammable liquids must be followed

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

Pregnant/breastfeeding women working with the product must not be in direct contact with the product

The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 2	Flammable liquids, Category 2
Pyr. Liq. 1	Pyrophoric Liquids, Category 1
Repr. 2	Reproductive toxicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
Water-react. 1	Substances and Mixtures which, in contact with water, emit flammable gases, Category 1
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.

n-BUTYLLITHIUM, 2.5M in hexanes (22-24 wt %)

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H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
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.

SDS EU (REACH Annex II) - Custom

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