

## • SAFETY DATA SHEET

Version 6.16  
Revision Date 01/13/2026  
Print Date 01/14/2026

### SECTION 1. IDENTIFICATION

#### 1.1 Product identifiers

Product name : n-Butyllithium solution

Product Number : 710776

Brand : Aldrich

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

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

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

#### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

##### Hazards for the product as supplied

Flammable liquids : Category 2

Pyrophoric liquids : Category 1

Aldrich - 710776

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Chemicals which, in contact with water, emit flammable gases	: Category 1
Skin corrosion	: Category 1B
Serious eye damage	: Category 1
Reproductive toxicity	: Category 2
Specific target organ toxicity - single exposure	: Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure (Inhalation)	: Category 1 (Nervous system)
Specific target organ toxicity - repeated exposure (Inhalation)	: Category 2 (Central nervous system)
Aspiration hazard	: Category 1
Short-term (acute) aquatic hazard	: Category 2
Long-term (chronic) aquatic hazard	: Category 3

### **Other hazards**

Reacts violently with water.

### **GHS label elements**

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	<p>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.  H361 Suspected of damaging fertility or the unborn child.  H372 Causes damage to organs (Nervous system) through prolonged or repeated exposure if inhaled.</p>

H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.

H401 Toxic to aquatic life.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements :

**Prevention:**

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.

P222 Do not allow contact with air.

P223 Do not allow contact with water.

P231 + P232 Handle under inert gas. Protect from moisture.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P260 Do not breathe mist or vapours.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

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

**Response:**

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302 + P334 IF ON SKIN: Immerse in cool water/ wrap in wet bandages.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P335 + P334 Brush off loose particles from skin.  
Immerse in cool water/ wrap in wet bandages.  
P363 Wash contaminated clothing before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage:**

P402 + P404 Store in a dry place. Store in a closed container.  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.  
P422 Store contents under inert gas.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture  
CAS-No. : Not Assigned

**Components**

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
Toluene	108-88-3*	>= 70 - < 90	-
Butyllithium	109-72-8*	>= 10 - < 20	-
n-Hexane	110-54-3*	>= 1 - < 5	-

\* Indicates that the identifier is a CAS No.

Actual concentration is withheld as a trade secret

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### SECTION 4. FIRST AID MEASURES

General advice : First aiders need to protect themselves.  
Show this safety data sheet to the doctor in attendance.  
If inhaled : After inhalation: fresh air. Call in physician.  
In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact	: After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.
If swallowed	: After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Do not attempt to neutralise.
Most important symptoms and effects, both acute and delayed	: The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
Protection of first-aiders	: For personal protection see section 8.
Notes to physician	: No data available

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## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide (CO2)  
Dry powder

Unsuitable extinguishing media : Water  
Foam

Specific hazards during fire fighting : Combustible.

Pay attention to flashback.

Vapours are heavier than air and may spread along floors.

May not get in touch with: Water

Development of hazardous combustion gases or vapours possible in the event of fire.

Forms explosive mixtures with air at ambient temperatures.

Hazardous combustion products	: Carbon oxides  Lithium oxides
Specific extinguishing methods	: No data available
Further information	: Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	: Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.
Environmental precautions	: Do not let product enter drains. Risk of explosion.
Methods and materials for containment and cleaning up	: Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

Advice on protection against fire and explosion	: Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
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Advice on safe handling	: Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Keep workplace dry. Do not allow product to come into contact with water.
Conditions for safe storage	: Store under argon. Handle under argon.
Further information on storage conditions	: Tightly closed. Keep away from heat and sources of ignition.
Materials to avoid	: Never allow product to get in contact with water during storage.
Storage class	: 4.2, Pyrophoric and self-heating hazardous materials
Recommended storage temperature	: /
	36 - 46 °F / 2 - 8 °C
Further information on storage stability	: Handle and store under inert gas.

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Toluene	108-88-3	TWA	100 ppm 375 mg/m <sup>3</sup>	OSHA P0
		STEL	150 ppm 560 mg/m <sup>3</sup>	OSHA P0
		TWA	200 ppm	OSHA Z-2
		CEIL	300 ppm	OSHA Z-2
		Peak	500 ppm	OSHA Z-2
		TWA	20 ppm	ACGIH
		TWA	100 ppm 375 mg/m <sup>3</sup>	NIOSH REL
n-Hexane	110-54-3	ST	150 ppm 560 mg/m <sup>3</sup>	NIOSH REL
		TWA	50 ppm	ACGIH
		TWA	50 ppm 180 mg/m <sup>3</sup>	NIOSH REL
		TWA	500 ppm 1,800 mg/m <sup>3</sup>	OSHA Z-1

### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Toluene	108-88-3	Toluene	In blood	Prior to last shift of workweek	0.02 mg/l	ACGIH BEI
		Toluene	Urine	End of shift (As soon as possible after exposure ceases)	0.03 mg/l	ACGIH BEI
		o-Cresol	Urine	End of shift (As soon as possible after exposure ceases)	0.3 mg/g creatinine	ACGIH BEI
n-Hexane	110-54-3	2,5-Hexanedione	Urine	End of shift	0.5 mg/l	ACGIH BEI

**Engineering measures** : No data available

### Personal protective equipment

Respiratory protection : required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

#### Hand protection

Remarks	: required
Eye protection	: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles
Skin and body protection	: Flame retardant antistatic protective clothing.
Hygiene measures	: Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Color	: No data available
Odor	: No data available
Odor Threshold	: No data available
pH	: No data available
Melting point	: No data available
Boiling point/boiling range	: No data available
Flash point	: 21 °F / -6 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Flammability (liquids)	: No data available
Burning rate	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available

Relative vapour density	: No data available
Relative density	: No data available
Density	: 0.849 g/cm <sup>3</sup> (77 °F / 25 °C)
Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Flow time	: No data available
Explosive properties	: Not classified as explosive.
Oxidizing properties	: none
Particle characteristics	
Particle size	: No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Vapours may form explosive mixture with air.
Chemical stability	: Sensitive to air. sensitive to moisture
Possibility of hazardous reactions	: No data available
Conditions to avoid	: Exposure to air.  Warming.  Moisture.
Incompatible materials	: No data available
Hazardous decomposition products	: In the event of fire: see section 5

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### **Mixture**

##### **Acute toxicity**

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Inhalation: No data available

Acute toxicity estimate Dermal - > 5,000 mg/kg  
(Calculation method)

##### **Skin corrosion/irritation**

Remarks: Mixture causes burns.

##### **Serious eye damage/eye irritation**

Remarks: Mixture causes serious eye damage.  
Risk of blindness!

##### **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.

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 on OSHA's list of regulated carcinogens.

##### **Reproductive toxicity**

Suspected of damaging the unborn child.

Suspected of damaging fertility.

##### **Specific target organ toxicity - single exposure**

Mixture may cause drowsiness or dizziness.

##### **Specific target organ toxicity - repeated exposure**

Mixture causes damage to organs through prolonged or repeated exposure.

- Nervous system

Mixture may cause damage to organs through prolonged or repeated exposure.

- Central nervous system

##### **Aspiration hazard**

Aspiration hazard, Aspiration may cause pulmonary oedema and pneumonitis.

### 11.2 Additional Information

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

Stomach - Irregularities - Based on Human Evidence

## **Components**

### **Toluene**

#### **Acute toxicity**

LD50 Oral - Rat - male - 5,580 mg/kg  
(Directive 67/548/EEC, Annex V, B.1.)  
LC50 Inhalation - Rat - male - 4 h - 25.7 mg/l - vapour  
(OECD Test Guideline 403)  
LD50 Dermal - Rabbit - male - > 5,000 mg/kg  
Remarks: (ECHA)

#### **Skin corrosion/irritation**

Skin - Rabbit  
Result: irritating - 4 h  
(Regulation (EC) No. 440/2008, Annex, B.4)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: No eye irritation  
(OECD Test Guideline 405)

#### **Respiratory or skin sensitization**

Maximisation Test - Guinea pig  
Result: negative  
(Regulation (EC) No. 440/2008, Annex, B.6)

#### **Germ cell mutagenicity**

Test Type: In vitro mammalian cell gene mutation test  
Test system: Mouse lymphoma test  
Result: negative  
Test Type: Ames test  
Test system: S. typhimurium  
Result: negative  
Species: Rat - Bone marrow  
Result: negative  
Remarks: (ECHA)

#### **Carcinogenicity**

No data available

#### **Reproductive toxicity**

Suspected of damaging the unborn child.

#### **Specific target organ toxicity - single exposure**

Inhalation - May cause drowsiness or dizziness. - Central nervous system  
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### **Specific target organ toxicity - repeated exposure**

Inhalation - May cause damage to organs through prolonged or repeated exposure.

- Central nervous system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

### **Aspiration hazard**

Aspiration may cause pulmonary oedema and pneumonitis.

## **Butyllithium**

### **Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

### **Skin corrosion/irritation**

Remarks: Causes skin irritation.

(ECHA)

### **Serious eye damage/eye irritation**

Remarks: Causes serious eye damage.

### **Respiratory or skin sensitization**

No data available

### **Germ cell mutagenicity**

No data available

### **Carcinogenicity**

No data available

### **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

## **n-Hexane**

### **Acute toxicity**

LD50 Oral - Rat - male and female - 16,000 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - 4 h - 172 mg/l - vapour

Remarks: (RTECS)

LD50 Dermal - Rabbit - male - > 2,000 mg/kg

(OECD Test Guideline 402)

### **Skin corrosion/irritation**

Skin - Rabbit

Result: Skin irritation - 24 h

(OECD Test Guideline 404)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation - 72 h

(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: negative

(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test

Result: negative

Method: OECD Test Guideline 478

Species: Mouse - male

Result: negative

Method: OECD Test Guideline 475

Species: Rat - male and female - Bone marrow

Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

Suspected of damaging fertility.

**Specific target organ toxicity - single exposure**

May cause drowsiness or dizziness. - Central nervous system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Specific target organ toxicity - repeated exposure**

Inhalation - Causes damage to organs through prolonged or repeated exposure.

- Nervous system

**Aspiration hazard**

Aspiration may cause pulmonary oedema and pneumonitis.

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## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Components:**

**Toluene:**

Toxicity to fish : LC50 (Oncorhynchus kisutch (coho salmon)): 5.5 mg/l  
End point: mortality  
Exposure time: 96 h

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	<p>Test Type: flow-through test  Analytical monitoring: yes  Remarks: (ECHA)</p>
Toxicity to daphnia and other aquatic invertebrates	<p>: EC50 (Ceriodaphnia dubia (water flea)): 3.78 mg/l  End point: mortality  Exposure time: 48 h  Analytical monitoring: yes  Method: US-EPA</p>
Toxicity to fish (Chronic toxicity)	<p>: NOEC (Oncorhynchus kisutch (coho salmon)): 1.39 mg/l  End point: Growth inhibition  Exposure time: 40 d  Test Type: flow-through test  Analytical monitoring: yes  Remarks: (ECHA)</p>
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	<p>: NOEC (Ceriodaphnia dubia (water flea)): 0.74 mg/l  End point: reproduction rate  Exposure time: 7 d  Analytical monitoring: yes  Method: US-EPA</p>
Toxicity to microorganisms	<p>: EC50 (Bacteria): 84 mg/l  Exposure time: 24 h  Test Type: static test  Remarks: (ECHA)</p>

#### **n-Hexane:**

Toxicity to fish	<p>: LC50 (Pimephales promelas (fathead minnow)): 2.5 mg/l  Exposure time: 96 h  Remarks: (ECOTOX Database)</p>
Toxicity to daphnia and other aquatic invertebrates	<p>: EC50 (Daphnia magna (Water flea)): 2.1 mg/l  Exposure time: 48 h  Remarks: (Lit.)</p>

#### **Persistence and degradability**

#### **Components:**

#### **Toluene:**

Biodegradability	<p>: aerobic  Result: Readily biodegradable.  Biodegradation: 86 %  Exposure time: 20 d  Remarks: (IUCLID)</p>
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#### **n-Hexane:**

Biodegradability : aerobic  
Inoculum: activated sludge  
Concentration: 100 mg/l  
Result: Readily biodegradable.  
Biodegradation: 98 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
GLP: yes  
Remarks: (in analogy to similar products)

## **Bioaccumulative potential**

### **Components:**

#### **Toluene:**

Bioaccumulation : Species: Leuciscus idus (Golden orfe)  
Bioconcentration factor (BCF): 90  
Exposure time: 3 d  
Concentration: 0.05 mg/l

Partition coefficient: n-octanol/water : log Pow: 2.73 (68 °F / 20 °C)  
pH: 7  
Remarks: Bioaccumulation is not expected.

#### **n-Hexane:**

Partition coefficient: n-octanol/water : log Pow: ca. 4 (68 °F / 20 °C)  
Method: (experimental)  
Remarks: (Lit.)  
Potential bioaccumulation

## **Mobility in soil**

### **Components:**

#### **n-Hexane:**

Stability in soil : Remarks: No data available

## **Other adverse effects**

### **Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

### **Components:**

#### **n-Hexane:**

Results of PBT and vPvB assessment : Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

Not permitted for transport

#### IMDG-Code

UN number : UN 3394  
Proper shipping name : ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (Butyllithium, Toluene)  
Class : 4.2  
Subsidiary risk : 4.3  
Packing group : I  
Labels : 4.2 (4.3)  
EmS Code : F-G, S-M  
Marine pollutant : no

### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### National Regulations

#### 49 CFR Road

UN/ID/NA number : UN 3394  
Proper shipping name : Organometallic substance, liquid, pyrophoric, water-reactive (Butyllithium, Toluene)  
Class : 4.2  
Subsidiary risk : 4.3  
Packing group : I  
Labels : Division 4.2 - Substances liable to spontaneous combustion, Division 4.3 - Substances which in contact with water emit flammable gases  
ERG Code : 135  
Marine pollutant : no  
Poison Inhalation Hazard : No

### **Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## **SECTION 15. REGULATORY INFORMATION**

### **CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Toluene	108-88-3	1000	1123

### **SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

### **SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

#### **SARA 311/312**

#### **Hazards**

- : Fire Hazard
- Reactivity Hazard
- Acute Health Hazard
- Chronic Health Hazard

#### **SARA 313**

- : The following components are subject to reporting levels established by SARA Title III, Section 313:

Toluene	108-88-3	>= 70 - < 90 %
n-Hexane	110-54-3	>= 1 - < 5 %

### **Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

Toluene	108-88-3	>= 70 - < 90 %
n-Hexane	110-54-3	>= 1 - < 5 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

Toluene	108-88-3	>= 70 - < 90 %
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### **Clean Water Act**

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Toluene	108-88-3	>= 70 - < 90 %
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The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Toluene	108-88-3	>= 70 - < 90 %
This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307		
Toluene	108-88-3	>= 70 - < 90 %
This product contains the following priority pollutants related to the U.S. Clean Water Act:		
Toluene	108-88-3	>= 70 - < 90 %

### **US State Regulations**

#### **Massachusetts Right To Know**

Toluene	108-88-3
n-Hexane	110-54-3

#### **Pennsylvania Right To Know**

Toluene	108-88-3
Butyllithium	109-72-8
n-Hexane	110-54-3

#### **Maine Chemicals of High Concern**

Toluene	108-88-3
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#### **Vermont Chemicals of High Concern**

Toluene	108-88-3
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#### **Washington Chemicals of High Concern**

Toluene	108-88-3
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#### **California Prop. 65**

WARNING: This product can expose you to chemicals including Toluene, n-Hexane, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### **The components of this product are reported in the following inventories:**

TSCA : All substances listed as active on the TSCA inventory

#### **TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## **SECTION 16. OTHER INFORMATION**

#### **Full text of other abbreviations**

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	: ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA P0	: USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-2	: USA. Occupational Exposure Limits (OSHA) - Table Z-

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ACGIH / TWA	: 8-hour, time-weighted average
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	: STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	: 8-hour time weighted average
OSHA P0 / STEL	: Short-term exposure limit
OSHA Z-1 / TWA	: 8-hour time weighted average
OSHA Z-2 / TWA	: 8-hour time weighted average
OSHA Z-2 / CEIL	: Acceptable ceiling concentration
OSHA Z-2 / Peak	: Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any

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