

## SAFETY DATA SHEET

Version 7.0  
Revision Date 09/30/2024  
Print Date 10/01/2024

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

Product name : (Trimethylsilyl)methyl lithium solution

Product Number : 297054  
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**

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

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 1), H224  
Skin corrosion (Category 1B), H314  
Serious eye damage (Category 1), H318  
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336  
Aspiration hazard (Category 1), H304

Short-term (acute) aquatic hazard (Category 2), H401  
Long-term (chronic) aquatic hazard (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard Statements

|      |                                                  |
|------|--------------------------------------------------|
| H224 | Extremely flammable liquid and vapor.            |
| H304 | May be fatal if swallowed and enters airways.    |
| H314 | Causes severe skin burns and eye damage.         |
| H336 | May cause drowsiness or dizziness.               |
| H411 | Toxic to aquatic life with long lasting effects. |

Precautionary Statements

|                           |                                                                                                                                                                            |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P210                      | Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.                                                                                                        |
| 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.                                                                                                                      |
| P261                      | Avoid breathing mist or vapors.                                                                                                                                            |
| P264                      | Wash skin thoroughly after handling.                                                                                                                                       |
| 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.                                                                                              |
| P301 + P310               | IF SWALLOWED: Immediately call a POISON CENTER/ doctor.                                                                                                                    |
| P301 + P330 + P331        | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.                                                                                                                         |
| 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. |
| P363                      | Wash contaminated clothing before reuse.                                                                                                                                   |
| P370 + P378               | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.                                                                                       |
| P391                      | Collect spillage.                                                                                                                                                          |
| 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.                                                                                                                                                           |
| P501                      | Dispose of contents/ container to an approved waste disposal plant.                                                                                                        |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Reacts violently with water.

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## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Formula :  $C_4H_{11}LiSi$   
Molecular weight : 94.16 g/mol

| Component                               |                       | Classification                                                                                                                                                  | Concentration    |
|-----------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>pentane</b>                          |                       |                                                                                                                                                                 |                  |
| CAS-No.                                 | 109-66-0              | Flam. Liq. 2; STOT SE 3;<br>Asp. Tox. 1; Aquatic Acute 2; Aquatic Chronic 2;<br>H225, H336, H304, H401, H411<br>Concentration limits:<br>20 %: STOT SE 3, H336; | >= 90 - <= 100 % |
| EC-No.                                  | 203-692-4             |                                                                                                                                                                 |                  |
| Index-No.                               | 601-006-00-1          |                                                                                                                                                                 |                  |
| Registration number                     | 01-2119459286-30-XXXX |                                                                                                                                                                 |                  |
| <b>[(Trimethylsilyl)methyl] lithium</b> |                       |                                                                                                                                                                 |                  |
| CAS-No.                                 | 1822-00-0             | Skin Corr. 1B; Eye Dam. 1; H314, H318                                                                                                                           | >= 10 - < 20 %   |

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material 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.

### 4.2 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

#### **4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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### **SECTION 5: Firefighting measures**

#### **5.1 Extinguishing media**

##### **Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>) Dry powder

##### **Unsuitable extinguishing media**

Water Foam

#### **5.2 Special hazards arising from the substance or mixture**

Carbon oxides

Lithium oxides

silicon oxides

Combustible.

Pay attention to flashback.

Vapors 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.

#### **5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### **5.4 Further information**

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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### **SECTION 6: Accidental release measures**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, 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. For personal protection see section 8.

#### **6.2 Environmental precautions**

Do not let product enter drains. Risk of explosion.

#### **6.3 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.

#### **6.4 Reference to other sections**

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### 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.

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Tightly closed. Keep away from heat and sources of ignition.

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

**Storage stability** Recommended storage temperature

2 - 8 °C

Handle and store under inert gas.

#### Storage class

Storage class (TRGS 510): 4.3: Hazardous materials, which set free flammable gases upon contact with water

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

| Component | CAS-No.  | Value | Control parameters       | Basis                                                                                   |
|-----------|----------|-------|--------------------------|-----------------------------------------------------------------------------------------|
| pentane   | 109-66-0 | C     | 610 ppm<br>1,800 mg/m3   | USA. NIOSH Recommended Exposure Limits                                                  |
|           |          | TWA   | 120 ppm<br>350 mg/m3     | USA. NIOSH Recommended Exposure Limits                                                  |
|           |          | TWA   | 1,000 ppm<br>2,950 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|           |          | PEL   | 600 ppm<br>1,800 mg/m3   | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|           |          | TWA   | 1,000 ppm                | USA. ACGIH Threshold Limit Values (TLV)                                                 |

## 8.2 Exposure controls

### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### Personal protective equipment

#### Eye/face 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 protection

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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Flame retardant antistatic protective clothing.

### Respiratory protection

Recommended Filter type: Filter type AX

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.

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.

### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                                 |                                            |
|-------------------------------------------------|--------------------------------------------|
| a) Appearance                                   | Form: clear, liquid<br>Color: light yellow |
| b) Odor                                         | No data available                          |
| c) Odor Threshold                               | No data available                          |
| d) pH                                           | No data available                          |
| e) Melting point/freezing point                 | No data available                          |
| f) Initial boiling point and boiling range      | 35 - 36 °C 95 - 97 °F at 1,013 hPa         |
| g) Flash point                                  | -49 °C (-56 °F) - 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) Vapor pressure                               | No data available                          |
| l) Vapor density                                | No data available                          |
| m) Density                                      | 0.650 g/cm <sup>3</sup>                    |
| Relative density                                | No data available                          |
| n) Water solubility                             | No data available                          |
| o) Partition coefficient: n-octanol/water       | No data available                          |
| p) Autoignition                                 | No data available                          |

Aldrich - 297054

Page 7 of 14

temperature

- q) Decomposition temperature No data available
- r) Viscosity No data available
- s) Explosive properties Not classified as explosive.
- t) Oxidizing properties none

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapors may form explosive mixture with air.

### 10.2 Chemical stability

sensitive to moisture

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Warming.

Moisture.

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 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

Oral: No data available

Acute toxicity estimate Oral - 2,778 mg/kg

(Calculation method)

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

Inhalation: No data available

Acute toxicity estimate Inhalation - 4 h - 27.78 mg/l - vapor (Calculation method)

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: , damage of respiratory tract

Dermal: No data available

No data available

**Skin corrosion/irritation**

Remarks: No data available

Remarks: Mixture causes burns.

**Serious eye damage/eye irritation**

Remarks: No data available

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 ingredient 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 ingredient 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**

No data available

No data available

**Specific target organ toxicity - single exposure**

Remarks: No data available

Mixture may cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.

**11.2 Additional Information**

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

Contact with eyes can cause:, Redness, Blurred vision, Provokes tears., Prolonged or repeated contact with skin may cause:, defatting, Dermatitis, Central nervous system depression, Damage to the lungs.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## Components

### pentane

#### Acute toxicity

LD50 Oral - Rat - male and female - > 2,000 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 25.3 mg/l - vapor

(OECD Test Guideline 403)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: cyclopentane

Dermal: No data available

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

#### Respiratory or skin sensitization

Buehler Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

#### Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Result: negative

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Method: Mutagenicity (micronucleus test)

Species: Rat - male and female - Bone marrow

Result: negative

#### Carcinogenicity

No data available

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

May cause drowsiness or dizziness. - Central nervous system

#### Specific target organ toxicity - repeated exposure

No data available

#### Aspiration hazard

May be fatal if swallowed and enters airways. Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.

## **[(Trimethylsilyl)methyl] lithium**

### **Acute toxicity**

Oral: No data available  
Inhalation: No data available  
Dermal: No data available  
No data available

### **Skin corrosion/irritation**

Remarks: No data available

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

Remarks: No data available

### **Respiratory or skin sensitization**

No data available

### **Germ cell mutagenicity**

No data available

### **Carcinogenicity**

No data available

### **Reproductive toxicity**

No data available  
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

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

#### **Mixture**

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**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

## 12.6 Endocrine disrupting properties

No data available

## 12.7 Other adverse effects

No data available

### Components

#### pentane

|                                                     |                                                                                                                                                                                                                               |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | static test LC50 - Oncorhynchus mykiss (rainbow trout) - 4.26 mg/l - 96 h<br>(OECD Test Guideline 203)                                                                                                                        |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - 2.7 mg/l - 48 h<br>Remarks: (ECHA)                                                                                                                                            |
| Toxicity to algae                                   | static test ErC50 - Selenastrum capricornutum (green algae) - 10.7 mg/l - 72 h<br>(OECD Test Guideline 201)<br><br>static test NOEC - Selenastrum capricornutum (green algae) - 7.51 mg/l - 72 h<br>(OECD Test Guideline 201) |

#### [(Trimethylsilyl)methyl] lithium

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

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

### DOT (US)

UN number: 3399    Class: 4.3 (3)    Packing group: I  
Proper shipping name: Organometallic substance, liquid, water-reactive, flammable (pentane, [(Trimethylsilyl)methyl] lithium)  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No

Aldrich - 297054

Page 12 of 14

**IMDG**

UN number: 3399 Class: 4.3 (3) Packing group: I EMS-No: F-G, S-N  
Proper shipping name: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE,  
FLAMMABLE (pentane, [(Trimethylsilyl)methyl] lithium)

**IATA**

UN number: 3399 Class: 4.3 (3) Packing group: I  
Proper shipping name: Organometallic substance, liquid, water-reactive, flammable  
(pentane, [(Trimethylsilyl)methyl] lithium)  
IATA Passenger: Not permitted for transport

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**SECTION 15: Regulatory information****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**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** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**US State Regulations****Massachusetts Right To Know**

pentane 109-66-0

**Pennsylvania Right To Know**

pentane 109-66-0

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

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

TSCA : Product contains substance(s) not listed on 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**

### **Relevant changes since previous version**

5. Fire-fighting measures

### **Further information**

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 guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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