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

1.1. Product identifier

Product form : Mixture
Physical state : Liquid
Product name : LITHIUM (TRIMETHYLSILYL)ACETYLIDE, 0.5M in tetrahydrofuran
Product code : SIL6470.0
Formula : C5H9LiSi
Synonyms : LITHIUM ETHYNYLTRIMETHYLSILANE in TETRAHYDROFURAN
Chemical family : ORGANOSILANE IN SOLVENT

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

Use of the substance/mixture : Chemical intermediate
For research use only

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

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

GHS-US classification
Flam. Liq. 2 H225
Skin Corr. 1B H314
Eye Dam. 1 H318
Carc. 2 H351
STOT SE 3 H335
Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapor
H314 - Causes severe skin burns and eye damage
H351 - Suspected of causing cancer
Precautionary statements (GHS-US) : P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308+P313 - If exposed or concerned: Get medical advice/attention
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P260 - Do not breathe vapors
P264 - Wash hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
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 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER
P321 - Specific treatment (see first aid instructions on this label)
P363 - Wash contaminated clothing before reuse
P370+P378 - In case of fire: Use foam, carbon dioxide, dry chemical to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Keep in a cool place
P406 - Store locked up
P501 - Dispose of contents/container to licensed waste disposal facility

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS US)
No data available

SECTION 3: Composition/Information on ingredients

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrahydrofuran</td>
<td>(CAS No) 109-99-9</td>
<td>85 - 90</td>
<td>Flam. Liq. 2, H225</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Carc. 2, H351</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3, H335</td>
</tr>
<tr>
<td>Lithium (trimethylsilyl)acetylide</td>
<td>(CAS No) 54655-07-1</td>
<td>10 - 15</td>
<td>Flam. Sol. 2, H228</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1B, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H318</td>
</tr>
<tr>
<td>Inhibitors (hindered phenol and/or hydroquinone derivatives)</td>
<td>&lt; 0.05</td>
<td></td>
<td>Not classified</td>
</tr>
</tbody>
</table>

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 victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of soap and water. Get immediate medical advice/attention.

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 medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries: Causes severe skin burns and eye damage. Suspected of causing cancer.
Symptoms/injuries after inhalation: May cause respiratory irritation. Inhalation will cause sneezing, irritation and burns.
Symptoms/injuries after skin contact: Causes (severe) skin burns. Worker will notice a slippery feeling on washing.
Symptoms/injuries after eye contact: Causes serious eye damage.
Symptoms/injuries after ingestion: May be harmful if swallowed.

Chronic symptoms: TETRAHYDROFURAN: Mildly toxic by inhalation. Mutagenic data has been reported. Reported as causing injury to liver and kidneys.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Unsuitable extinguishing media: Avoid water spray as flammable gases will be generated.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Highly flammable liquid and vapor. Irritating fumes and caustic vapors may develop when material is exposed to elevated temperatures or open flame.

Explosion hazard: May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters
Firefighting instructions: Exercise caution when fighting any chemical fire.
LITHIUM (TRIMETHYLSILYL)ACETYLIDE, 0.5M in tetrahydrofuran
Safety Data Sheet

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 vapor and mist.

Other information: Lithium trimethylsilylacetylide is a flammable solid.

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.

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".

Emergency procedures: Ventilate area.

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: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate 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 vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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 vapor and mist. Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Use only outdoors or in a well-ventilated area. Use only non-sparking tools.

Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.

Storage conditions: Keep container tightly closed. Store under dry nitrogen or argon in sealed containers below 25°C. Keep in a cool place. Store locked up.


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

<table>
<thead>
<tr>
<th>Tetrahydrofuran (109-99-9)</th>
<th>USA ACGIH TWA (ppm)</th>
<th>USA ACGIH STEL (ppm)</th>
<th>USA NIOSH REL (TWA) (mg/m³)</th>
<th>USA NIOSH REL (TWA) (ppm)</th>
<th>USA NIOSH REL (STEL) (mg/m³)</th>
<th>USA NIOSH REL (STEL) (ppm)</th>
<th>USA OSHA PEL (TWA) (mg/m³)</th>
<th>USA OSHA PEL (TWA) (ppm)</th>
<th>USA IDLH (US IDLH (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA ACGIH</td>
<td>50 ppm</td>
<td>100 ppm</td>
<td>590 mg/m³</td>
<td>200 ppm</td>
<td>735 mg/m³</td>
<td>250 ppm</td>
<td>590 mg/m³</td>
<td>200 ppm</td>
<td>2000 ppm (10% LEL)</td>
</tr>
</tbody>
</table>
LITHIUM (TRIMETHYLSILYL)ACETYLIDE, 0.5M in tetrahydrofuran
Safety Data Sheet

8.2. Exposure controls

Appropriate engineering controls: 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.
Skin and body protection: Wear suitable protective clothing. Long-sleeved fire-resistant lab uniform or coverall is recommended.
Respiratory protection: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - gas (yellow cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Appearance: Liquid.
Molecular mass: 104.15 g/mol
Color: Clear to hazy.
Odor: No data available
Odor threshold: No data available
Refractive index: No data available
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Freezing point: < 0 °C
Boiling point: > 66 °C initial (THF)
Flash point: -14 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): Highly flammable liquid and vapor
Vapor pressure: 144 mm Hg @ 15°C (THF)
Relative vapor density at 20 °C: 2.5 (THF)
Relative density: 0.829
VOC content: > 85 %
Solubility: Soluble in water. Reacts rapidly 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
Oxidizing properties: No data available
Explosion limits: 1.8 - 11.6 vol % (lower; upper: THF)

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 under nitrogen or argon in sealed containers.

10.3. Possibility of hazardous reactions

Material decomposes slowly in contact with moist air and rapidly in contact with water, possibly igniting.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

**Tetrahydrofuran (109-99-9)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>1650 mg/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat (ppm)</td>
<td>21000 ppm (Exposure time: 3 h)</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>1650.000 mg/kg body weight</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/irritation: Causes serious eye damage.

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Suspected of causing cancer.

**Tetrahydrofuran (109-99-9)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Toxicology Program (NTP) Status</td>
<td>1 - Evidence of Carcinogenicity</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Symptoms/injuries after inhalation</td>
<td>May cause respiratory irritation. Inhalation will cause sneezing, irritation and burns.</td>
</tr>
<tr>
<td>Symptoms/injuries after skin contact</td>
<td>Causes (severe) skin burns. Worker will notice a slippery feeling on washing.</td>
</tr>
<tr>
<td>Symptoms/injuries after eye contact</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>Symptoms/injuries after ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
<tr>
<td>Chronic symptoms</td>
<td>TETRAHYDROFURAN: Mildly toxic by inhalation. Mutagenic data has been reported. Reported as causing injury to liver and kidneys.</td>
</tr>
<tr>
<td>Reason for classification</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water: Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

**Tetrahydrofuran (109-99-9)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>1970 - 2360 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>2700 - 3600 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

**Tetrahydrofuran (109-99-9)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>(will not bioconcentrate)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>0.45 (at 25 °C)</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects: This substance may be hazardous to the environment.

Effect on ozone layer: No additional information available

Effect on the global warming: No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations: Do not dispose of waste into sewer.

Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.

Additional information: Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials: Avoid release to the environment.
LITHIUM (TRIMETHYLSILYL)ACETYLIDE, 0.5M in tetrahydrofuran
Safety Data Sheet

SECTION 14: Transport information

14.1. UN number
UN-No.(DOT) : 2924
DOT NA no. : UN2924

14.2. UN proper shipping name
Proper Shipping Name (DOT) : Flammable liquids, corrosive, n.o.s.
                        (LITHIUM (TRIMETHYLSILYL)ACETYLIDE, 0.5M in tetrahydrofuran)
Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT) : 3 - Flammable liquid 8 - Corrosive

DOT Symbols
Packing group (DOT) : G - Identifies PSN requiring a technical name
           II - Medium Danger
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 243

14.3. Additional information
Other information : No supplementary information available.

Transport by sea
DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a
                        passenger vessel carrying a number of passengers limited to not more than the larger of 25
                        passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on
                        passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this
                        section is exceeded
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Air transport
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 5 L

SECTION 15: Regulatory information

15.1. US Federal regulations
LITHIUM (TRIMETHYLSILYL)ACETYLIDE, 0.5M in tetrahydrofuran

TSCA Exemption/Exclusion
CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(f) is not permitted in the United States

Tetrathydrofuran (109-99-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag  T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA

Lithium (trimethylsilyl)acetylide (54655-07-1)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

02/17/2016 EN (English US) SDS ID: SIL6470.0 6/8
**LITHIUM (TRIMETHYLSILYL)ACETYLIDE, 0.5M in tetrahydrofuran**

**Safety Data Sheet**

**Tetrahydrofuran (109-99-9)**

- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on the Canadian IDL (Ingredient Disclosure List)
- Listed on INSQ (Mexican national Inventory of Chemical Substances)
- Listed on Turkish inventory of chemical

**Lithium (trimethylsilyl)acetylide (54655-07-1)**

### 15.3. US State regulations

**LITHIUM (TRIMETHYLSILYL)ACETYLIDE, 0.5M in tetrahydrofuran()**

<table>
<thead>
<tr>
<th></th>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>Non-significant risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrahydrofuran (109-99-9)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Non-significant risk level (NSRL)</td>
</tr>
<tr>
<td>Lithium (trimethylsilyl)acetylide (54655-07-1)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Non-significant risk level (NSRL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
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<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>Non-significant risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhibitors (hindered phenol and/or hydroquinone derivatives)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Non-significant risk level (NSRL)</td>
</tr>
</tbody>
</table>

**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.

**Full text of H-phrases:**

- **H225** Highly flammable liquid and vapor
- **H228** Flammable solid
- **H302** Harmful if swallowed
- **H314** Causes severe skin burns and eye damage
- **H318** Causes serious eye damage
- **H319** Causes serious eye irritation
- **H335** May cause respiratory irritation
- **H351** Suspected of causing cancer
LITHIUM (TRIMETHYLSILYL)ACETYLIDE, 0.5M in tetrahydrofuran
Safety Data Sheet

HMIS III Rating
Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability : 4 Severe Hazard
Physical : 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 02/17/2016 Version: 1.0

SDS US (GHS HazCom 2012) - Custom
According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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