

**LITHIUM SILICIDE**

Safety Data Sheet SIL6469.6

Date of issue: 31/03/2017

Version: 1.0

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

Product form	: Substance
Physical state	: Solid
Substance name	: LITHIUM SILICIDE
Product code	: SIL6469.6
Formula	: Li ₆ -7Si ₂
Synonyms	: LITHIUM-SILICON ALLOY
Chemical family	: METAL SILICIDE

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**GELEST, INC.**11 East Steel Road
Morrisville, PA 19067**USA**

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info@gelestde.com - www.gelestde.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****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Substances and Mixtures which, in contact with water, emit flammable gases, Category 2 H261

Skin corrosion/irritation, Category 2 H315

Serious eye damage/eye irritation, Category 2 H319

Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation H335

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



GHS02



GHS07

Signal word (CLP)

: Danger

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Hazard statements (CLP)	: H261 - In contact with water releases flammable gases. H315 - Causes skin irritation. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation.
Precautionary statements (CLP)	: P280 - Wear protective gloves/protective clothing/eye protection/face protection. P223 - Do not allow contact with water. P231+P232 - Handle under inert gas. Protect from moisture. P264 - Wash hands thoroughly after handling. P335+P334 - Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. P312 - Call a doctor if you feel unwell.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type	: Mono-constituent
Name	: LITHIUM SILICIDE
CAS-No.	: 68848-64-6

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Lithium silicide	(CAS-No.) 68848-64-6	95 - 100	Water-react. 2, H261 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

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 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 medical advice/attention.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Get medical advice/attention.

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

Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: No information available.

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	: Dolomite, Lith-X, dry chemical or sand.
Unsuitable extinguishing media	: Water.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: In contact with water releases flammable gases. Reacts vigorously with water, possibly igniting. May reignite after fire is extinguished.
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5.3. Advice for firefighters

Firefighting instructions	: Exercise caution when fighting any chemical fire.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid contact with skin and eyes. Do not breathe dust.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with water. Eliminate every possible source of ignition. Fire resistant clothing and gloves must be worn.

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".

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Cover spills with dry dolomite, Lith-X, sand or graphite. Sweep or shovel spills into appropriate container for disposal. Until disposed, remove all combustible materials from area.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Do not allow contact with water.

Precautions for safe handling : Avoid contact with skin and eyes. Do not breathe dust. Do not allow contact with water. Avoid dust formation. Handle under inert gas. Protect from moisture. Handle under dry inert atmosphere. Use only outdoors or in a well-ventilated area.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Avoid contact with water. Store in a dry place. Store in a closed container. Store locked up. If storing large amounts, advise Fire Departments of water-reactivity (NFPA 704 placard).

Incompatible materials : Water.

Storage area : Keep container tightly closed. Store in a well-ventilated place.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Lithium silicide (68848-64-6)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³ LiH

8.2. Exposure controls

Appropriate engineering controls:

Provide local exhaust or general room ventilation.

Personal protective equipment:

Avoid all unnecessary exposure.

Materials for protective clothing:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. An eyewash and emergency shower should be available, but must be located to avoid water-spray or flow that will contact lithium SILICIDE.

Hand protection:

Rubbers. Neoprene or nitrile rubber gloves

Eye protection:

Chemical goggles. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

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Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified dust and mist (orange cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Molecular mass	: 97.8 - 104.7 g/mol
Colour	: Gray.
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	: 700 - 720 °C decomposes
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: In contact with water releases flammable gases.
Vapour pressure	: < 0.01 mm Hg @ 20°C
Relative vapour density at 20 °C	: No data available
Relative density	: < 1
Solubility	: Reacts violently - may ignite.
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	: No data available

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.

10.3. Possibility of hazardous reactions

Material decomposes in contact with air by reaction with water.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Water.

10.6. Hazardous decomposition products

Hydrogen. Lithium hydroxide. Silicon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified

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Carcinogenicity	: Not classified None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: No information available.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

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

Other adverse effects	: This substance may be hazardous to the environment.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

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

14.1. UN number

UN-No. (ADR)	: 1417
UN-No. (IMDG)	: 1417
UN-No. (IATA)	: 1417
UN-No. (ADN)	: 1417
UN-No. (RID)	: 1417






14.2. UN proper shipping name

Proper Shipping Name (ADR)	: LITHIUM SILICON
Proper Shipping Name (IMDG)	: LITHIUM SILICON
Proper Shipping Name (IATA)	: Lithium silicon
Proper Shipping Name (ADN)	: LITHIUM SILICON
Proper Shipping Name (RID)	: LITHIUM SILICON
Transport document description (ADR)	: UN 1417 LITHIUM SILICON, 4.3, II, (D/E)
Transport document description (IMDG)	: UN 1417 LITHIUM SILICON, 4.3, II
Transport document description (IATA)	: UN 1417 Lithium silicon, 4.3, II
Transport document description (ADN)	: UN 1417 LITHIUM SILICON, 4.3, II
Transport document description (RID)	: UN 1417 LITHIUM SILICON, 4.3, II

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14.3. Transport hazard class(es)

ADR	
Transport hazard class(es) (ADR)	: 4.3
Danger labels (ADR)	: 4.3
:	
IMDG	
Transport hazard class(es) (IMDG)	: 4.3
Danger labels (IMDG)	: 4.3
:	
IATA	
Transport hazard class(es) (IATA)	: 4.3
Hazard labels (IATA)	: 4.3
:	
ADN	
Transport hazard class(es) (ADN)	: 4.3
Danger labels (ADN)	: 4.3
:	
RID	
Transport hazard class(es) (RID)	: 4.3
Danger labels (RID)	: 4.3
:	

14.4. Packing group

Packing group (ADR)	: II
Packing group (IMDG)	: II
Packing group (IATA)	: II
Packing group (ADN)	: II
Packing group (RID)	: II

14.5. Environmental hazards

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

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14.6. Special precautions for user

- Overland transport

Classification code (ADR)	: W2
Limited quantities (ADR)	: 500g
Excepted quantities (ADR)	: E2
Packing instructions (ADR)	: P410, IBC07
Mixed packing provisions (ADR)	: MP14
Portable tank and bulk container instructions (ADR)	: T3
Portable tank and bulk container special provisions (ADR)	: TP33
Tank code (ADR)	: SGAN
Vehicle for tank carriage	: AT
Transport category (ADR)	: 2
Special provisions for carriage - Packages (ADR)	: V1
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV23
Hazard identification number (Kemler No.)	: 423
Orange plates	:

423

1417

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

- Transport by sea

Limited quantities (IMDG)	: 500 g
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P410
Special packing provisions (IMDG)	: PP31, PP40
IBC packing instructions (IMDG)	: IBC07
IBC special provisions (IMDG)	: B2
Tank instructions (IMDG)	: T3
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-G
EmS-No. (Spillage)	: S-N
Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW5, H1
Segregation (IMDG)	: SG26
Properties and observations (IMDG)	: Shiny lumps, crystals or powder, with sharp irritating odour. Reacts readily with water, evolving hydrogen and silane, flammable gases. Enough heat may be generated to ignite the gas mixture in air.

- Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y475
PCA limited quantity max net quantity (IATA)	: 5kg
PCA packing instructions (IATA)	: 483
PCA max net quantity (IATA)	: 15kg
CAO packing instructions (IATA)	: 489
CAO max net quantity (IATA)	: 50kg
ERG code (IATA)	: 4W

- Inland waterway transport

Classification code (ADN)	: W2
Limited quantities (ADN)	: 500 g
Excepted quantities (ADN)	: E2
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01

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Provisions for handling and stowage of the cargo (ADN) : HA08
Number of blue cones/lights (ADN) : 0

- Rail transport

Classification code (RID) : W2
Limited quantities (RID) : 500g
Excepted quantities (RID) : E2
Packing instructions (RID) : P410, IBC07
Mixed packing provisions (RID) : MP14
Portable tank and bulk container instructions (RID) : T3
Portable tank and bulk container special provisions (RID) : TP33
Tank codes for RID tanks (RID) : SGAN
Transport category (RID) : 2
Special provisions for carriage – Packages (RID) : W1
Special provisions for carriage - Loading, unloading and handling (RID) : CW23
Colis express (express parcels) (RID) : CE10
Hazard identification number (RID) : 423

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

No REACH Annex XVII restrictions

LITHIUM SILICIDE is not on the REACH Candidate List

LITHIUM SILICIDE is not on the REACH Annex XIV List

LITHIUM SILICIDE is not 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.

LITHIUM SILICIDE is 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

15.1.2. National regulations

Germany

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 : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

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

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

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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:

Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
Water-react. 2	Substances and Mixtures which, in contact with water, emit flammable gases, Category 2
H261	In contact with water releases flammable gases.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

SDS EU (REACH Annex II) - Custom

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