

1 Identification

- **Product identifier**
- **Trade name:** **LITHIUM POLYSILICATE**
- **Application of the substance / the preparation:**
Intermediate product of varied applicability in industry and trade.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
GRACE
W. R. Grace & Co.-Conn
7500 Grace Drive
Columbia MD 21044
U. S. A.
- **Information department:**
Health and Safety (9 AM to 5 PM-EST) 1-410-531-4000
MSDS.Davison@grace.com
- **Emergency telephone number:**
Chemtrec North America: +1-800-424-9300
Chemtrec International: +1-703-527-3887
Other Emergencies (24hr): +1-410-531-4000

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**
Causes serious eye irritation.
- **Precautionary statements**
Wash thoroughly after handling.
Wear eye protection / face protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

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• **HMIS-ratings (scale 0 - 4)**

| | |
|------------|---|
| HEALTH | 2 |
| FIRE | 0 |
| REACTIVITY | 0 |

Health = 2

Fire = 0

Reactivity = 0

* Product presents long-term adverse effects.

3 Composition/information on ingredients• **Chemical characterization: Mixtures**• **Description:** Water colloidal suspension of amorphous silica.• **CAS No. and description:**

| | | |
|-----------|--|--------|
| 7732-18-5 | water, distilled, or of similar purity | 75-85% |
|-----------|--|--------|

• **List of Dangerous Components**

| | | | |
|------------|----------------------------|-----------------------------------|--------|
| 12627-14-4 | silicic acid, lithium salt | Eye Dam. 1, H318; STOT SE 3, H335 | 15-25% |
|------------|----------------------------|-----------------------------------|--------|

4 First-aid measures• **Description of first aid measures**• **General information:**

Immediately remove contaminated clothing if necessary to prevent direct skin contact.

• **After inhalation:** Supply fresh air; consult doctor in case of complaints.• **After skin contact:**

Wash with water.

If skin irritation occur, consult a doctor.

Remove contaminated clothing immediately.

• **After eye contact:**

Flush opened eye with large quantities of running water for at least 30 minutes. If symptoms occur, consult a doctor.

• **After swallowing:** Seek medical attention. Do not induce vomiting.• **Information for doctor:**• **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

• **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire-fighting measures• **Extinguishing media**• **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.• **Hazardous combustion products**

In case of fire, the following can be released:

Metal oxide fume

• **Advice for firefighters**• **Protective equipment:** Wear personal protective equipment.• **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections** No dangerous substances are released.
- **Protective Action Criteria for Chemicals**

• **PAC-1:**

None of the ingredients is listed.

• **PAC-2:**

None of the ingredients is listed.

• **PAC-3:**

None of the ingredients is listed.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Avoid formation of respirable particles.
- **Information about protection against explosions and fires:** The product is not flammable.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Colloidal silica should be stored above 2 °C. Freezing temperatures can cause irreversible precipitation of the silica, therefore the product should be located in heated buildings. Avoid routine storage temperatures above 43 °C.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** Protect from frost.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

7732-18-5 water, distilled, or of similar purity

| | |
|-----|---|
| PEL | Long-term value: - OSHA TWA: NONE ESTABLISHED |
| TLV | Long-term value: - ACGIH TWA: NONE ESTABLISHED |

- **Additional information:** Valid lists at time of creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.

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Do not breathe dust or spray mist.

• **Protection of hands:**

Protective gloves

Check protective gloves prior to each use for their proper condition.

Check the permeability prior to each new use of the glove.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Use gloves of stable material (e.g. Nitrile)

• **Material of gloves**

Butyl rubber, BR

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.35 mm• **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**

Butyl rubber, BR

Nitrile rubber, NBR

• **For the permanent contact gloves made of the following materials are suitable:**

Nitrile rubber, NBR

• **Not suitable are gloves made of the following materials:**

Leather gloves

Strong fabric gloves

• **Eye protection:**

Safety glasses

• **Body protection:** Protective work clothing**9 Physical and chemical properties**• **Information on basic physical and chemical properties**• **General Information**• **Appearance:****Form:**

Fluid

Color:

Colorless

• **Odor:**

Odorless

• **Odor threshold:**

Not available.

• **pH-value at 20 °C (68 °F):**

11.0

• **Change in condition****Melting point/Melting range:**

0 °C (32 °F) (water)

Boiling point/Boiling range:

100 °C (212 °F) (water)

• **Conditions of flammability****Flash point:**

Not available.

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| | |
|---|---|
| • Flammability (solid, gaseous): | Product is not flammable. |
| • Ignition temperature: | Not available. |
| • Decomposition temperature: | Not available. |
| • Auto igniting: | Product is not self-igniting. |
| • Danger of explosion: | Product does not present an explosion hazard. |
| • Explosion limits: | |
| Lower: | - Vol % |
| Upper: | - Vol % |
| • Vapor pressure at 25 °C (77 °F): | 32 hPa (24 mm Hg) (water) |
| • Density at 15.5 °C (59.9 °F): | 1.168 - 1.195 g/cm ³ (9.74696-9.97228 lbs/gal) |
| • Vapor density | Not available |
| • Evaporation rate | Not available |
| • Solubility in / Miscibility with | |
| Water: | Fully miscible. |
| • Coefficient of water/oil distribution: | Not available. |
| • Viscosity: | |
| Dynamic at 25 °C (77 °F): | 20 max. mPas |
| • Other information | No further relevant information available. |

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid**
In case of thermal decomposition caused by smouldering and incomplete combustion toxic fumes may be developed.
- **Incompatible materials:** Protect from contamination.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on the likely routes of exposure**
- **Delayed and immediate effects and chronic effects from short or long term exposure**
- **Information on toxicological effects**
- **Acute toxicity:**

• LD/LC50 values that are relevant for classification:

12627-14-4 silicic acid, lithium salt

| | | |
|------------|------------|---|
| Oral | LD50 | >2,500 mg/kg (rat) (OECD 423) GRACE |
| Dermal | LD50 | >5,000 mg/kg (rat) (EPA OPPTS 870.1200) comparable substance |
| Inhalative | LC50 (4 h) | >2.06 mg/l (rat) (EPA OPPTS 870.1300) comparable substance |

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• **Primary irritant effect:**• **on the skin:****12627-14-4 silicic acid, lithium salt**

| | | |
|--------------------|----|---|
| Irritation of skin | IS | <0.3 (rabbit) (OECD 404) Solution: 25 % silicic acid, lithium salt, 75 % water (Molar Ratio: 4.01) Chemical Safety Report, silicic acid, lithium salt |
|--------------------|----|---|

• **on the eye:****12627-14-4 silicic acid, lithium salt**

| | | |
|--------------------|----|--|
| Irritation of eyes | IS | 2.3 (rabbit) (OECD 405) Solution: 25 % silicic acid, lithium salt, 75 % water (Molar Ratio: 4.01) Chemical Safety Report, silicic acid, lithium salt |
|--------------------|----|--|

• **Respiratory sensitization** No further relevant information available.• **Skin sensitization****12627-14-4 silicic acid, lithium salt**

| | | |
|---------------|----|---|
| Sensitization | SI | 0 (guinea pig) (EPA 870.2600) comparable substance |
|---------------|----|---|

• **Additional toxicological information:**• **Carcinogenic categories**• **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

• **NTP (National Toxicology Program)**

None of the ingredients is listed.

• **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

• **Repeated dose toxicity****12627-14-4 silicic acid, lithium salt**

| | | |
|------|--------------|---|
| Oral | NOAEL (90 d) | 227-237 mg/kg bw/day (rat) (OECD 408) comparable substance |
|------|--------------|---|

• **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**• **Carcinogenicity** No further relevant information available.• **Mutagenicity****12627-14-4 silicic acid, lithium salt**

| | |
|-----------|---|
| AMES Test | >5 mg/plate (Salmonella typhimurium) (OECD 471) negative with and without metabolic activation |
|-----------|---|

• **Reproductive toxicity****12627-14-4 silicic acid, lithium salt**

| | | |
|------|---------------------------|---|
| Oral | NOAEL (maternal toxicity) | ≥159 mg/kg bw/day (rat) comparable substance |
| | NOAEL (teratogenicity) | 200 mg/kg bw/day (rat) (OECD 414) comparable substance |

• **Specific target organ toxicity (single exposure)****12627-14-4 silicic acid, lithium salt**

| | | |
|------------|---|---|
| Inhalative | C | >2.06 mg/l/4h (rat) comparable substance |
|------------|---|---|

• **Specific target organ toxicity (repeated exposure)** No further relevant information available.• **Aspiration hazard** No further relevant information available.

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12 Ecological information• **Toxicity**• **Aquatic toxicity:**• **Fish toxicity****12627-14-4 silicic acid, lithium salt**

| | |
|-------------|--|
| LC50 (96 h) | 260-310 mg/l (Oncorhynchus mykiss) comparable substance |
|-------------|--|

• **Water flea toxicity****12627-14-4 silicic acid, lithium salt**

| | |
|-------------|--------------------------------------|
| EC50 (48 h) | >220 mg/l (Daphnia magna) (OECD 202) |
|-------------|--------------------------------------|

• **Algae toxicity****12627-14-4 silicic acid, lithium salt**

| | |
|-------------|---|
| EC50 (72 h) | 207 mg/l (Scenedesmus subspicatus) (OECD 201) comparable substance |
| NOEC (72 h) | 35 mg/l (Scenedesmus subspicatus) (OECD 201) comparable substance |

• **Bacterial toxicity****12627-14-4 silicic acid, lithium salt**

| | |
|-------------|---|
| EC10 (18 h) | >348 mg/l (sludge) (OECD 209) comparable substance |
|-------------|---|

• **Persistence and degradability** No further relevant information available.• **Other information:**

Do not allow product to reach sewage system, groundwater and any water course.

• **Behavior in environmental systems:**• **Bioaccumulative potential**

Due to the distribution coefficient n-octanol/water a worth-mentioning accumulation in organisms is not expected.

• **Mobility in soil** No further relevant information available.• **Results of PBT and vPvB assessment**• **PBT:** Not applicable.• **vPvB:** Not applicable.• **Other adverse effects** No further relevant information available.**13 Disposal considerations**• **Recommendation:**

Disposal must be made according to official regulations.

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State/provincial and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state/provincial and local requirements.

• **Uncleaned packagings:**• **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

| | |
|---|--|
| • UN-Number | |
| • DOT, ADR, ADN, IMDG, IATA | None |
| • UN proper shipping name | |
| • DOT, ADR, ADN, IMDG, IATA | None |
| • Transport hazard class(es) | |
| • DOT, ADR, ADN, IMDG, IATA | |
| • Class | None |
| • Packing group | |
| • DOT, ADR, IMDG, IATA | None |
| • Environmental hazards: | Not applicable. |
| • Special precautions for user | Not applicable. |
| • Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| • Transport/Additional information: | Not dangerous according to the above specifications. GRACE recommendation for air transport: Cargo aircraft only. |

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- SARA

• SARA 302/304

None of the ingredients is listed.

• SARA 313

None of the ingredients is listed.

• SARA 311/312 Delayed (Chronic) Health Hazard.

• TSCA (Toxic Substances Control Act):

12627-14-4 silicic acid, lithium salt

7732-18-5 water, distilled, or of similar purity

• Proposition 65

• Chemicals known to cause cancer:

None of the ingredients is listed.

• Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

• Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

• Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

• Carcinogenic categories

• EPA (Environmental Protection Agency)

None of the ingredients is listed.

• TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

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• **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

• **Canadian DSL**

12627-14-4 silicic acid, lithium salt

7732-18-5 water, distilled, or of similar purity

• **Canadian NDSL** Not available.• **European EINECS**

All ingredients are listed or exempted from listing.

• **Philippines Inventory of Chemicals and Chemical Substances PICCS**

Inventory listing could not be confirmed for one or more substances.

• **Inventory of the Existing Chemical Substances manufactured or imported in China IECSC**

All ingredients are listed.

• **Australian Inventory of Chemical Substances AICS**

All ingredients are listed or exempted from listing.

• **Existing and New Chemical Substance List ENCS**

12627-14-4 silicic acid, lithium salt

1-770

7732-18-5 water, distilled, or of similar purity

• **Korean Existing Chemical Inventory KECI**

12627-14-4 silicic acid, lithium salt

KE-30995

7732-18-5 water, distilled, or of similar purity

KE-35400

• **TCSCA (Taiwan)**

12627-14-4 silicic acid, lithium salt

EPEP4A01714149

• **New Zealand Inventory of Chemicals (NZIoC)**

All ingredients are listed or exempted from listing.

• **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

• **Hazard pictograms**

GHS07

• **Signal word** Warning• **Hazard statements**

Causes serious eye irritation.

• **Precautionary statements**

Wash thoroughly after handling.

Wear eye protection / face protection.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Relevant phrases**

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

• **Department issuing SDS:** GRACE Safety & Health Department

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- **Date of preparation / last revision** 08/30/2018 / 4.1
- **The first date of preparation** 01/20/2015
- **Number of revision times and the latest revision date** 4.2 / 08/30/2018

• **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety

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OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• *** Data compared to the previous version altered.**

— USA —