

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**



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**



- **Signal word** Warning
- **Hazard statements**
H319 Causes serious eye irritation.
- **Precautionary statements**
P264 Wash thoroughly after handling.
P280 Wear eye protection / face protection.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
- **Classification system:**
- **HMIS-ratings (scale 0 - 4) *** Product presents long-term adverse effects.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Water colloidal suspension of amorphous silica.

(Contd. on page 2)

Printing date 09/24/2021

Version: 4.4

Reviewed on 09/24/2021

Trade name: LITHIUM POLYSILICATE

(Contd. of page 1)

· **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.

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.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

(Contd. on page 3)

Printing date 09/24/2021

Version: 4.4

Reviewed on 09/24/2021

Trade name: **LITHIUM POLYSILICATE**

(Contd. of page 2)

· **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

· **DNELs****12627-14-4 silicic acid, lithium salt**

Dermal	DNEL(long-systemic)	57 mg/kg bw /day (Worker)
Inhalative	DNEL(long-systemic)	3.8 mg/m ³ (Worker)

· **PNECs****12627-14-4 silicic acid, lithium salt**

PNEC	7.5 mg/l (aqua-freshwater)
	7.5 mg/l (aqua-intermittent releases)
	1 mg/l (aqua-marine water)
	348 mg/l (STP)

· **Additional information:** Valid lists at time of creation were used as basis.

(Contd. on page 4)

USA

Trade name: LITHIUM POLYSILICATE

(Contd. of page 3)

· **Exposure controls**· **Personal protective equipment:**· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.
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

· **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 applicable.

· **pH-value at 20 °C (68 °F):**

11.0

(Contd. on page 5)

USA

Printing date 09/24/2021

Version: 4.4

Reviewed on 09/24/2021

Trade name: LITHIUM POLYSILICATE

(Contd. of page 4)

· Change in condition	
· Melting point/Melting range:	0 °C (32 °F) (water)
· Boiling point/Boiling range:	100 °C (212 °F) (water)
· Flash point:	Not determined.
· Flammability (solid, gaseous):	Product is not flammable.
· Ignition temperature:	Not applicable.
· Decomposition temperature:	Not applicable.
· Auto ignition temperature:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not applicable.
Upper:	Not applicable.
· 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 determined.
· Evaporation rate	Not available
· Solubility in / Miscibility with Water:	Fully miscible.
· Coefficient of water/oil distribution:	Not determined.
· Viscosity:	
Dynamic at 25 °C (77 °F):	20 max. mPas
Kinematic:	Not determined.
· 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.

— USA —

(Contd. on page 6)

Trade name: **LITHIUM POLYSILICATE**

(Contd. of page 5)

11 Toxicological information· **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

· **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
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· **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
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· **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
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· **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
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· **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
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(Contd. on page 7)

Printing date 09/24/2021

Version: 4.4

Reviewed on 09/24/2021

Trade name: **LITHIUM POLYSILICATE**

(Contd. of page 6)

· **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
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· **Specific target organ toxicity (repeated exposure)** No further relevant information available.**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
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· **Water flea toxicity****12627-14-4 silicic acid, lithium salt**

EC50 (48 h)	>220 mg/l (Daphnia magna) (OECD 202)
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· **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
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· **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.

— USA —

(Contd. on page 8)

Printing date 09/24/2021

Version: 4.4

Reviewed on 09/24/2021

Trade name: LITHIUM POLYSILICATE

(Contd. of page 7)

13 Disposal considerations

- **Precautions for disposal:**
- **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.

14 Transport information

- | | |
|--|--|
| · UN-Number | |
| · DOT, ADR, ADN, IMDG, IATA | Not applicable. |
| · UN proper shipping name | |
| · DOT, ADR, ADN, IMDG, IATA | Not applicable. |
| · Transport hazard class(es) | |
| · DOT, ADR, ADN, IMDG, IATA | |
| · Class | Not applicable. |
| · Packing group | |
| · DOT, ADR, IMDG, IATA | Not applicable. |
| · Environmental hazards: | Not applicable. |
| · Special precautions for user | Not applicable. |
| · Segregation groups | - |
| · 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** Serious eye damage or eye irritation.

· **TSCA (Toxic Substances Control Act):**

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

ACTIVE

12627-14-4 silicic acid, lithium salt

ACTIVE

(Contd. on page 9)

USA

Printing date 09/24/2021

Version: 4.4

Reviewed on 09/24/2021

Trade name: LITHIUM POLYSILICATE

(Contd. of page 8)

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **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)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Canadian DSL**

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

12627-14-4 silicic acid, lithium salt

· **Canadian NDSL**

None of the ingredients is listed.

· **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**

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

12627-14-4 silicic acid, lithium salt

· **Australian Inventory of Chemical Substances AICS**

All ingredients are listed or exempted from listing.

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

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

12627-14-4 silicic acid, lithium salt

1-770

· **Korean Existing Chemical Inventory KECI**

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

KE-35400

12627-14-4 silicic acid, lithium salt

KE-30995

· **TCSCA (Taiwan)**

12627-14-4 silicic acid, lithium salt

EPEP4A01714149

· **Russian Register of Potentially Hazardous Chemical and Biological Substances (RPOHV)**

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

№ AT-007627 от 25.02.2014 г.

12627-14-4 silicic acid, lithium salt

№ AT-011523 от 29.07.2020 г.

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

All ingredients are listed or exempted from listing.

(Contd. on page 10)

USA

Trade name: LITHIUM POLYSILICATE

(Contd. of page 9)

· **Existing Chemical Directory of Thailand (DIW)**

All ingredients are listed or exempted from listing.

· **TCSI - Taiwan Chemical Substance Inventory**

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**

H319 Causes serious eye irritation.

· **Precautionary statements**

P264 Wash thoroughly after handling.

P280 Wear eye protection / face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

· **Classification system:**· **NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 2

Fire = 0

Reactivity = 0

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· **Harmonized Tariff Schedule** 3824 9996· **Contact:**

SALES OFFICES

USA:

GRACE

W. R. Grace & Co.-Conn

7500 Grace DR

Columbia, MD 21044

Tel: +1 410-531 4000

Europe:

(Contd. on page 11)

Trade name: LITHIUM POLYSILICATE

(Contd. of page 10)

Grace GmbH
In der Hollerhecke 1
D-67545 Worms, Germany
Tel: +49 6241 40300

Asia Pacific:
Grace Products (Singapore) Pte Ltd
230 Orchard Road
09-232, Faber House
Singapore 238854
Tel: +65 6737 3033
Fax: +65 6737 5826

Grace Trading (Shanghai) Ltd
19th Floor K.Wah Center
1010 Huai Hai Zhong Road
Shanghai, 200031 China
T (电话): +86 21 3325 8288
F (传真): +86 21 3325 8245

W. R. Grace Japan K.K
Kohken New River Bldg 3F
2-21-18, Shinkawa
Chuo-ku, Tokyo 104-0033
JAPAN
Tel: +81 3.3537.6006
Fax: +81 3.3537.6007

Other information:

• **Date of preparation / last revision** 09/24/2021 / 4.3

• **The first date of preparation** 01/20/2015

• **Number of revision times and the latest revision date** 4.4 / 09/24/2021

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 relatif au transport international 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

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)

HMS: Hazardous Materials Identification System (USA)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

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

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

• **Others** No further relevant information available.

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