

Material Safety Data Sheet

Lithium Silicate Powder

Report No.: VIH240920002-1
Version: 2.1
Preparation Date: 09/20/2024
Revision Date: 09/20/2024

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	Lithium Silicate
Product No.	03140800PD
Formula	Li ₂ SiO ₃
CAS No.	10102-24-6
Synonyms	Lithium metasilicate

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

Identified uses	Laboratory chemicals, Scientific research
Uses advised against	Consulting manufacturers

1.3 Details of the supplier of the safety data sheet

Company Name	VI HALBLEITERMATERIAL GmbH
Street	Bergener Straße 14.,
City	Hannover
State	Niedersachsen
Zip Code	30625
Country	Germany
Tel	0049 1626484175
Email	info@vimaterial.de
Website	https://vimaterial.de/

1.4 Emergency telephone number

Emergency Phone #	0049 1626484175
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2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Eye irritation	Category 2 (H319)
STOT – single exposure	Category 3 (H335)

For full text of abbreviations: see SECTION 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal Word	Warning
Pictograms	

Hazard Statements

H319	Causes serious eye irritation
H335	May cause respiratory irritation

Precautionary Statements

Prevention	
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection
Response	
P305+P351+P338:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Storage	
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
Disposal	
P501	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards

According to the results of its assessment, this substance is not a PBT or a vPvB.

May form explosible dust-air mixture if dispersed.

This product does not contain any known or suspected endocrine disruptors.

3. Composition/information on ingredients

3.1 Substances

Chemical Family	Ceramic
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Component	CAS No.	EC No.	Concentration
Lithium Silicate (Li ₂ SiO ₃)	10102-24-6	233-270-5	<=100%

4. First aid measures

4.1 Description of first aid measures

General Treatment	Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.
Inhalation	Remove victim to fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.
Skin	Take off immediately all contaminated clothing. Rinse skin with water/ shower. Seek medical attention.
Eyes	Rinse with pure water for at least 15 minutes. Remove contact lenses, if present and easy to do. Seek medical attention.
Ingestion	Rinse mouth with water(only if the person is conscious). Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

1	Based on the symptoms that appear, provide targeted treatment.
2	Be aware that symptoms may be delayed.

5. Firefighting Measures

5.1 Extinguishing Media

Suitable extinguishing	Use suitable extinguishing agent for surrounding material and type
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media	of fire
Unsuitable extinguishing media	Do not use high-pressure water jets directly on the product.

5.2 Special hazards arising from the substance or mixture

1	Lithium oxides
2	Silicon oxides
3	Not flammable, but may form explosible dust-air mixtures if finely dispersed in air.
4	Heating may release irritating or toxic fumes. Avoid inhalation of combustion gases.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
2	Fight fire from a safe distance and with adequate protection. Do not allow firefighting water to enter drains or water courses.
3	Collect contaminated firefighting water separately.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Remove persons to safety. Use personal protective equipment as required. Avoid dust formation. Remove all sources of ignition.
For emergency responders	Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental Precautions

1	Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.
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6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill	Covering of drains, Take up mechanically.
Advice on how to clean up a spill	Take up mechanically. Clean the affected area with damp cloth or water to minimize dust generation.
Other information relating to spills and releases	Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

7. Handling and Storage

7.1 Precautions for safe handling

Recommendations	Handling in a well ventilated place. Wear personal protective equipment/face protection. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.
Hygiene Measures	Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Explosive atmospheres	Removal of dust deposits.
Ventilation requirements	Keep containers tightly closed in a dry, cool and well-ventilated place.
Flammability hazards	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Packaging compatibilities	Only packagings which are approved may be used.

7.3 Specific end use(s)

Use in laboratories.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Substance	CAS No.	Source	TWA (8 h)/ mg/m ³	Remarks
Lithium metasilicate	10102-24-6	Not established	-	No specific OEL established
Inhalable dust	-	TRGS 900 (DE)	10	General dust limit (einatbarer Staub)

Respirable dust	-	TRGS 900 (DE)	1.25	General dust limit (alveolengängiger Staub)
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Notes: Control limits may vary by country; consult local regulations.

- ✧ *No substance-specific occupational exposure limit (OEL) is established for lithium metasilicate.*
- ✧ *Follow general TWA limits for dust in accordance with TRGS 900 (Germany).*
- ✧ *Ensure continuous workplace air monitoring if airborne dust may be present.*

TWA: Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

8.2 Exposure controls

Appropriate engineering controls

1	Ensure that eyewash stations and safety showers are close to the workstation location.
2	Ensure adequate ventilation, especially in confined areas.
3	Use explosion-proof electrical/ventilating/lighting equipment.
4	Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye/face protection

Wear safety goggles or face shield conforming to EN 166.

Skin protection

-Hand Protection

Protective gloves (The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.)

-Other protection measures

Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Particulates filter conforming to EN 143
Small scale/Laboratory use	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended half mask:- Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

9. Physical and Chemical Characteristics

9.1 Information on basic physical and chemical properties

Physical State	Powder Solid
Colour	White
Odor	Odorless
Melting Point/Range	>1200 °C
Boiling Point/Range	Not applicable
Flammability (liquid)	Not applicable
Flammability (solid, gas)	Not applicable
Explosion limits	Not explosive, but may form dust-air mixtures
Flash Point	Not applicable
Auto-ignition Temperature	Not self-igniting
Decomposition Temperature	No data available
pH	No data available
Viscosity	Not relevant (solid matter)
Water Solubility	Insoluble
Solubility in other solvents	No information available
Partition Coefficient (n-octanol/water)	Not applicable
Vapor Pressure	Not applicable
Density / Specific Gravity	2.52 g/cm ³
Vapor Density	Not applicable
Particle characteristics	No data available

9.2 Other information

Molecular formula	Li ₂ SiO ₃
Molecular weight	89.97 g/mol
Evaporation Rate	Rate Not applicable - Solid

10. Stability and reactivity

10.1 Reactivity

The product is not reactive under normal conditions of use, storage, and transport.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous Polymerization: Hazardous polymerization does not occur.

Hazardous Reactions: Reacts with strong acids to produce heat and lithium salts.

10.4 Conditions to avoid

Avoid generation of dust.

Avoid exposure to moisture, acids, and extreme heat.

10.5 Incompatible materials

Strong oxidizing agents. Acids.

10.6 Hazardous decomposition products

Lithium compounds

Silicon oxides (SiO₂)

Irritating or toxic fumes in extreme conditions

In the event of fire: see section 5

11. Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information: No acute toxicity information is available for this product

Acute toxicity	Oral:	No data available
	Dermal:	No data available
	Inhalation:	No data available
Skin corrosion/irritation	No data available.	
Serious eye damage/irritation	Eye irritation: Causes mild to moderate irritation upon direct contact.	
	Category 2 (H319): Causes serious eye irritation.	

	Rinse immediately with water if in contact with eyes.	
Respiratory or skin sensitization	Respiratory	No data available.
	Skin	No data available.
Germ cell mutagenicity	No data available.	
Carcinogenicity	No data available.	
	Not classified as carcinogenic based on available data.	
Reproductive toxicity	No data available.	
STOT - single exposure	May cause mild respiratory irritation due to dust inhalation. Category 3 (H335): May cause respiratory irritation.	
STOT - repeated exposure	Target Organs	No information available
Aspiration hazard	Not applicable. Solid	

11.2 Information on other hazards

Endocrine Disrupting Properties: Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

12. Ecological Information

12.1 Toxicity

Ecotoxicity effects	No data available.
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12.2 Persistence and degradability

Persistence	No data available.
Degradability	No data available.

12.3 Bioaccumulative potential

Bioaccumulative potential	No data available.
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12.4 Mobility in soil

Mobility in soil	No data available.
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12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	In accordance with Annex XIII of the REACH Regulation, this substance does not meet the criteria for classification as a PBT or a vPvB.
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12.6 Endocrine disrupting properties

Endocrine Disruptor	This product does not contain any known or suspected endocrine
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Information	disruptors.
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12.7 Other adverse effects

Persistent Organic Pollutant	This product does not contain any known or suspected substance
Ozone Depletion Potential	This product does not contain any known or suspected substance

13. Disposal Considerations

13.1 Waste treatment methods

Waste treatment-relevant information	Waste is not classified as hazardous. Dispose of in accordance with local, regional, and national regulations.
Sewage disposal-relevant information	Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.
Waste treatment of containers/packageings	Empty containers must be disposed of in accordance with local regulations.
Other Information	Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

14. Transport information

IMDG

14.1. UN number	Not applicable
14.2. UN Proper shipping name	Not classified as hazardous for transport.
14.3. Transport hazard class(es)	Not applicable
14.4. Packaging group	Not applicable

ADR/RID/ADN

14.1. UN number	Not applicable
14.2. UN Proper shipping name	Not classified as hazardous for transport.
14.3. Transport hazard class(es)	Not applicable
14.4. Packaging group	Not applicable

ICAO-IATA/DGR

14.1. UN number	Not applicable
14.2. UN Proper shipping name	Not classified as hazardous for transport.
14.3. Transport hazard class(es)	Not applicable
14.4. Packaging group	Not applicable

14.5. Environmental hazards	No hazards identified
14.6. Special precautions for user	No special precautions required
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

15. Regulatory information

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

International Inventories

Component	EINECS	EC Inventory	TSCA	IECSC	NZIoC	PICCS	KECL	DSL
Lithium Silicate (Li ₂ SiO ₃)	√	√	√	√	√	×	√	×

[EINECS] European Inventory of Existing Commercial Chemical Substances

[EC Inventory] EC Inventory

[TSCA] United States Toxic Substances Control Act Inventory

[IECSC] Chinese Chemical Inventory of Existing Chemical Substances

[NZIoC] New Zealand Inventory of Chemicals

[PICCS] Philippines Inventory of Chemicals and Chemical Substances

[KECL] Korea Existing Chemicals List

[DSL] Canada Domestic Substances List

Note: "√" Listed
"×" No data / Not listed

Authorisation/Restrictions according to EU REACH

Component	CAS No.	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC1907/2006) article 59 -Candidate List of Substances of Very HighConcern (SVHC)
Lithium Silicate (Li ₂ SiO ₃)	10102-24-6	Not applicable	Not applicable	Not applicable

Seveso III Directive (2012/18/EC)

Component	CAS No.	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) -Qualifying Quantities for Safety ReportRequirements
Lithium Silicate (Li ₂ SiO ₃)	10102-24-6	Not applicable	Not applicable

Regulation (EC) No. 649/2012 (Export and import of hazardous chemicals):

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Take note - applicable where occupational exposure occurs.

National Regulations - Germany:

- ❖ **TRGS 900 (Technical Rules for Hazardous Substances – Occupational Exposure Limits):**
No specific AGW (workplace exposure limit) for lithium silicate. General dust limits apply:
 - Inhalable fraction: 10 mg/m³
 - Respirable fraction: 1.25 mg/m³
- ❖ **TA Luft (Technical Instructions on Air Quality Control):** Not specifically classified.
- ❖ **Water Hazard Classification (WGK, self classification):** WGK 1 (slightly hazardous to water).

National Regulations – United Kingdom:

- ❖ Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

16. Other information

Revision information

Preparation date	09/20/2024
Revision date	09/20/2024
Revision reason	Creation

Abbreviations and acronyms

CAS	Chemical Abstracts Service
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail
IATA	International Air Transportation Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
TWA	Time Weighted Average
STOT	Specific target organ toxicity
PBT	Persistent, Bioaccumulative, Toxic
vPvB	Very Persistent, very Bioaccumulative
WEL	Workplace exposure limit

References

- [1] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- [2] ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- [3] eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- [4] Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- [5] HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- [6] IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- [7] IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- [8] ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

List of relevant phrases (code and full text as stated in chapter 2 and 3)

H319	Causes serious eye irritation
H335	May cause respiratory irritation

Disclaimer

The information of this safety data sheet is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his

obligations regarding the use of hazardous products. For further information please contact info@vimaterial.de.