1. Identification

Product identifier: LITHIUM SILICATE, 99.5%

Other means of identification:
- Product code: 1438
- Synonyms: LITHIUM METASILICATE

Recommended use: None known.

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:
- Company name: GFS Chemicals, Inc.
- Address: P.O. Box 245, Powell, OH 43065, United States
- Telephone: Phone 740-881-5501, Toll Free 800-858-9682, Fax 740-881-5989
- Website: www.gfschemicals.com
- E-mail: service@gfschemicals.com
- Emergency number: Emergency Assistance Chemtrec 800-424-9300

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards:
- Category 2: Skin corrosion/irritation
- Category 2A: Serious eye damage/eye irritation
- Category 3 respiratory tract irritation

Environmental hazards: Not classified.

OSHA defined hazards: Not classified.

Label elements

Signal word: Warning

Hazard statement: Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Precautionary statement:

Prevention: Avoid breathing dust. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves.

Response: IF ON SKIN: Wash with plenty of soap and water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

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

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC): None known.

Supplemental information: None.

3. Composition/information on ingredients

Substances: LITHIUM SILICATE, 99.5%
**4. First-aid measures**

**Inhalation**
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

**Skin contact**
Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

**Eye contact**
Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

**Ingestion**
Rinse mouth. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed**
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. May cause redness and pain.

**Indication of immediate medical attention and special treatment needed**
Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

**General information**
If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

**5. Fire-fighting measures**

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media**
Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**
During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**
Use water spray to cool unopened containers.

**Specific methods**
Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards**
No unusual fire or explosion hazards noted.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. The product is immiscible with water and will sediment in water systems. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

**Environmental precautions**
Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage**

**Precautions for safe handling**
Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities

- Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

- **Occupational exposure limits**: No exposure limits noted for ingredient(s).
- **Biological limit values**: No biological exposure limits noted for the ingredient(s).
- **Appropriate engineering controls**: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Eye wash facilities and emergency shower must be available when handling this product.

**Individual protection measures, such as personal protective equipment**

- **Eye/face protection**: Wear safety glasses with side shields (or goggles).
- **Skin protection**: Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
- **Hand protection**: Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
- **Other**: Wear appropriate chemical resistant clothing.
- **Respiratory protection**: Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Wear respirator if there is dust formation.
- **Thermal hazards**: Wear appropriate thermal protective clothing, when necessary.
- **General hygiene considerations**: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

**Appearance**

- **Physical state**: Solid.
- **Form**: Crystalline powder.
- **Color**: White.
- **Odor**: Odorless.
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point/freezing point**: 2193.8 °F (1201 °C)
- **Initial boiling point and boiling range**: Not available.
- **Flash point**: Not available.
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Not available.
- **Upper/lower flammability or explosive limits**
  - **Flammability limit - lower (%)**: Not available.
  - **Flammability limit - upper (%)**: Not available.
  - **Explosive limit - lower (%)**: Not available.
  - **Explosive limit - upper (%)**: Not available.
- **Vapor pressure**: Not available.
- **Vapor density**: Not available.
- **Relative density**: Not available.
- **Solubility(ies)**
  - **Solubility (water)**: Insoluble.
- **Partition coefficient (n-octanol/water)**: Not available.
- **Auto-ignition temperature**: Not available.

---

Material name: LITHIUM SILICATE, 99.5%

Revision date: Issue date: April-18-2016
**Decomposition temperature**
Not available.

**Viscosity**
Not available.

**Other information**
- **Density**: 2.52 g/cm³
- **Explosive properties**: Not explosive.
- **Molecular formula**: Li₂SiO₃
- **Molecular weight**: 89.97 g/mol
- **Oxidizing properties**: Not oxidizing.
- **Specific gravity**: 2.52

**10. Stability and reactivity**

**Reactivity**
The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability**
Material is stable under normal conditions.

**Possibility of hazardous reactions**
No dangerous reaction known under conditions of normal use.

**Conditions to avoid**
Contact with incompatible materials.

**Incompatible materials**
Strong oxidizing agents.

**Hazardous decomposition products**
May include oxides of silicon and lithium.

**11. Toxicological information**

**Information on likely routes of exposure**

- **Inhalation**: Dust may irritate respiratory system.
- **Skin contact**: Causes skin irritation.
- **Eye contact**: Causes serious eye irritation.
- **Ingestion**: Expected to be a low ingestion hazard.

**Symptoms related to the physical, chemical and toxicological characteristics**
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. May cause redness and pain.

**Information on toxicological effects**

- **Acute toxicity**: May cause respiratory irritation.
- **Skin corrosion/irritation**: Causes skin irritation.
- **Serious eye damage/eye irritation**: Causes serious eye irritation.

**Respiratory or skin sensitization**

- **Respiratory sensitization**: Not a respiratory sensitizer.
- **Skin sensitization**: This product is not expected to cause skin sensitization.

**Germ cell mutagenicity**
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**IARC Monographs. Overall Evaluation of Carcinogenicity**
Not listed.

**US OSHA Hazard Categories (1)**
Not regulated.

**US OSHA Hazard Categories (10)**
Not regulated.

**US OSHA Hazard Categories (2)**
Not regulated.

**US OSHA Hazard Categories (3)**
Not regulated.

**US OSHA Hazard Categories (4)**
Not regulated.

**US OSHA Hazard Categories (5)**
Not regulated.

**US OSHA Hazard Categories (6)**
Not regulated.

**US OSHA Hazard Categories (7)**
Not regulated.
US OSHA Hazard Categories (8)
Not regulated.

US OSHA Hazard Categories (9)
Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens
Not listed.

**Reproductive toxicity**
This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity**
- **single exposure**
  May cause respiratory irritation.

- **repeated exposure**
  Not classified.

**Aspiration hazard**
Not an aspiration hazard.

12. Ecological information

**Ecotoxicity**
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability**
No data is available on the degradability of this product.

**Bioaccumulative potential**
No data available.

**Mobility in soil**
No data available.

**Other adverse effects**
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

**Disposal instructions**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**
Dispose in accordance with all applicable regulations.

**Hazardous waste code**
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products**
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging**
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

**DOT**
Not regulated as dangerous goods.

**IATA**
Not regulated as dangerous goods.

**IMDG**
Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable.

15. Regulatory information

**US federal regulations**
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**
Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**
Not listed.

**SARA 304 Emergency release notification**
Not regulated.

**US OSHA Hazard Categories (1)**
Not regulated.

**US OSHA Hazard Categories (2)**
Not regulated.
US OSHA Hazard Categories (3)  
Not regulated.
US OSHA Hazard Categories (4)  
Not regulated.
US OSHA Hazard Categories (5)  
Not regulated.
US OSHA Hazard Categories (6)  
Not regulated.
US OSHA Hazard Categories (7)  
Not regulated.
US OSHA Hazard Categories (8)  
Not regulated.
US OSHA Hazard Categories (9)  
Not regulated.
US OSHA Hazard Categories (10)  
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)  
Hazard categories  
Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

SARA 302 Extremely hazardous substance  
Not listed.
SARA 311/312  
Hazardous chemical  
No
SARA 313 (TRI reporting)  
Not regulated.

Other federal regulations  
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List  
Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)  
Not regulated.
Safe Drinking Water Act (SDWA)  
Not regulated.

US state regulations  
US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)  
Not listed.
US. Massachusetts RTK - Substance List  
Not regulated.
US. New Jersey Worker and Community Right-to-Know Act  
Not listed.
US. Pennsylvania Worker and Community Right-to-Know Law  
Not listed.
US. Rhode Island RTK  
Not regulated.
US. California Proposition 65  
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories  
<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
</tbody>
</table>

Material name: LITHIUM SILICATE, 99.5%  
1438 Version #: 01 Revision date: Issue date: April-18-2016
<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

**Issue date**: April-18-2016

**Version #**: 01

**Disclaimer**: GFS Chemicals, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

**Revision information**: Product and Company Identification: Synonyms

Physical & Chemical Properties: Multiple Properties

GHS: Classification