Safety Data Sheet

1. IDENTIFICATION
   Other Means of Identification: Bioactive Glass
   SDS Number: GL0160, GL0804, GL0811, GL1542, GL1550, GL1605, GL1708, GL1764, GL1624, GL1626, GL1753, GL1812, GL1813 Glass
   Product Code: Not available.
   Recommended Use: None known.
   Recommended Restrictions: None known.
   Manufacturer/Importer/Supplier/Distributor Information:
   Mo-Sci Corporation, Mo-Sci Health Care, LLC, and Mo-Sci Specialty Products LLC
   Address: 4040 Hypoint North Rolla, MO, USA 65401
   Telephone Number: 573-364-2338
   e-mail: mo-sci@mo-sci.com
   Contact Person: Krista Grayson
   Emergency Telephone Number: 573-364-2338

2. HAZARD IDENTIFICATION
   Physical hazards: Not classified
   Health hazards: Not classified
   OSHA defined hazards: Not classified
   Label elements: None
   Hazard symbols: None
   Signal word: None
   Hazard statement: May irritate skin, eyes, mucous membranes.
   Precautionary statement: May irritate skin, eyes, mucous membranes.
   Prevention: Observe good industrial hygiene practices.
   Response: Wash hands after handling.
   Storage: Store away from incompatible materials.
   Disposal: Dispose of in accordance with local regulations.
   Hazard(s) not otherwise Classified (HNOC): None known

Glass is an amorphous fusion of materials whose constituents are tightly bound together and are in a specific chemical environment, totally different from the initial state (in raw materials) and from that occurring in simple compounds (metals or oxides). Under normal conditions, glass never gives metal or oxide as direct dissociation products. Under extreme conditions, only a tiny fraction of glass constituents could leach from the glass matrix into aqueous solutions.

3. COMPOSITION/INFORMATION ON INGREDIENTS
   Mixtures
   Chemical Name: Glass, Oxide, Chemicals
   CAS number: 65997-17-3
   %: 100
   Constituents
   Chemical Name
   CAS number
   %
   Proprietary
   Composition comments: Concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
4. FIRST-AID MEASURES
   Inhalation
   Skin Contact
   Eye Contact
   Ingestion
   Most Important Symptoms/Effects, Acute and Delayed
   Indication of Immediate Medical Attention and Special Treatment Needed
   If symptomatic, move to fresh air. Get medical attention if symptoms persist.
   Wash with soap and water. Get medical attention if symptoms occur.
   Material that contacts the eye should be washed out immediately with water. If easy
to do, remove contact lenses. Get medical attention if symptoms persist.
   Seek medical advice.
   Direct contact with eyes may cause temporary irritation.
   Treat symptomatically.

5. FIRE-FIGHTING MEASURES
   Suitable Extinguishing Media
   Unsuitable Extinguishing Media
   Specific Hazards Arising from the Chemical
   Special Protective Equipment and Precautions for Firefighters
   Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
   Fire-fighting Equipment/instructions
   Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES
   Personal Precautions, Protective Equipment and Emergency Procedures
   Methods and Materials for Containment and Cleaning Up
   Environmental Precautions
   Wear protective clothing as described in Section 8 of this SDS
   Sweep or scoop up and remove.
   For waste disposal, see Section 13 of the SDS
   Avoid discharge into drains, water courses or onto the ground.

7. HANDLING AND STORAGE
   Precautions for Safe Handling
   Conditions for Safe Storage, including any Incompatibilities
   Wear appropriate personal protective equipment (See Section 8).
   Wash thoroughly after handling.
   Observe good industrial hygiene practices.
   Dust or powder: Use only with adequate ventilation.
   Avoid breathing dust.
   Store in a cool dry environment.
   Store away from incompatible materials (See Section 10).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
   Occupational Exposure Limits
   US OSHA Table z-1 Limits for Air Contaminants (29 CFR 1910.1000)
<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust (CAS-)</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 millions of particles</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 millions of particles</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>
   US OSHA Table Z-3 (29 CFR 1910.1000)
<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust (CAS-)</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Respirable particles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>
   Biological Limit Values
   No biological exposure limits noted for the ingredient(s).
   Appropriate Engineering Controls
   Ensure adequate ventilation, especially in confined areas.
   Individual Protection Measures, such as Personal Protective Equipment
   Eye/Face Protection
   Normal eye protection practices should be used. If dusty conditions exist, chemical
   goggles are recommended.
Skin Protection
   Hand Protection
      Regular work gloves.
   Other
      Wear apron or protective clothing in case of contact. If contact with forearms is likely wear gauntlet style gloves.

Respiratory Protection
   • If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
   • In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.
   • Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Thermal Hazard
   General Hygiene
      Wear appropriate thermal protective clothing, when necessary.
      Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, or/and smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. PHYSICAL AND CHEMICAL PROPERTIES
   Appearance
      Solid.
   Physical State
      Solid.
   Form
      Solid. Glass.
   Color
   Odor
      Not available.
   Odor Threshold
      Not available.
   pH (in water @25°C)
      Not available.
   Melting Point/Freezing Point
      Not available.
   Softening Temperature
      Not measured.
   Initial Boiling Point and Boiling Range
      Not applicable.
   Flash Point
      Not applicable.
   Evaporation Rate
      Not available.
   Flammability (solid, gas)
      Not applicable.
   Upper/Lower Flammability or Explosive Limits
      Flammability Limit-Lower (%)
         Not applicable.
      Flammability Limit-Upper (%)
         Not applicable.
   Vapor Pressure
      Not available.
   Vapor Density
      Not applicable.
   Relative Density
      Not available.
   Solubility
      Soluble (rate not measured).
   Solubility (water)
   Partition Coefficient
      No data available.
   Auto-Ignition Temperature
      Not applicable.
   Decomposition Temperature
      Not applicable.
   Viscosity
      Not measured.
   Specific Gravity
      Not measured.
   Refractive Index

10. STABILITY AND REACTIVITY
   Reactivity
      The product is stable and non-reactive under normal conditions of use, storage and transportation.
      Stable under the prescribed storage conditions.
      Hazardous polymerization will not occur.
      Contact with incompatible materials.
      Strong acids. Strong bases.
      Metal oxides.

11. TOXICOLOGICAL INFORMATION

Bioactive Glass
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Revision Date: 19-July-2018
Revision: 1
Information on Likely Routes of Exposure

Ingestion
No harmful effects expected in amounts likely to be ingested by accident.

Inhalation
No inhalation hazard under normal conditions.
Contact with dust: May cause irritation to the respiratory system.

Skin contact
May cause skin sensitization in hypersensitive individuals.

Eye contact
Direct contact with eyes may cause temporary irritation.

Symptoms Related to the Physical, Chemical and Toxicological Characteristics

Direct contact with eyes may cause temporary irritation.

Information on Toxicological Effects

Acute Toxicity
May cause discomfort if swallowed.

Skin Corrosion/Irritation
Dust may irritate skin.

Serious Eye Damage/Eye Irritation
Direct contact with eyes may cause temporary irritation.

Respiratory or Skin Sensitization

No data available.

Germ Cell Mutagenicity

No data available.

Carcinogenicity

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

IARC Monographs. Overall Evaluation of Carcinogenicity

Glass, oxide, chemicals (CAS 65997-17-3)

3 not classifiable as to carcinogenicity to humans

Glass, oxide, chemicals (CAS 65997-17-3)

Reasonably anticipated to be a Human Carcinogen.

NTP Report on Carcinogens

Reproductive Toxicity

No data available.

Specific Target Organ Toxicity - Single Exposure

No data available.

Specific Target Organ Toxicity - Repeated Exposure

No data available.

Aspiration Hazard

Not applicable.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Not expected to be harmful to aquatic organisms.

Persistence and Degradability
No data available.

Bioaccumulative Potential
No data available.

Mobility in Soil
The product is not mobile in soil.

Other Adverse Effects
None known.

13. DISPOSAL CONSIDERATIONS

Disposal Instructions
Do not discharge into drains, water courses or onto the ground.

Local Disposal Regulations
Dispose in accordance with all applicable regulations.

Hazardous Waste Code
Not regulated. The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from Residues/Unused Products
Recover and recycle, if practical.

Contaminated packaging
Dispose of in accordance with local regulations.

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 IBC Code
Not applicable.

15. REGULATORY INFORMATION

US Federal Regulations
This product is not hazardous according to OSHA 29CFR 1910-1200.

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

Not listed.

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

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazardous Categories

Immediate Hazard
No

Delayed Hazard
No

Fire Hazard
No

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Pressure Hazard: No
Reactivity Hazard: No
SARA 302 Extremely Hazardous Substance: Not listed.
SARA 311/312 Hazardous Chemical: No
SARA 313 (TRI reporting): No

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.

US State Regulations:
- US Massachusetts RTK – Substance List:
  - Aluminum oxide (CAS 1344-28-1)
  - Quartz (CAS 14808-60-7)
- US New Jersey Worker and community Right-to-Know Act:
  - Aluminum oxide (CAS 1344-28-1)
  - Quartz (CAS 14808-60-7)
- US Pennsylvania worker and Community Right-to-Know Law:
  - Aluminum oxide (CAS 1344-28-1)
  - Quartz (CAS 14808-60-7)
- US Rhode Island RTK:
  - Aluminum oxide (CAS 1344-28-1)
- US California Proposition 65-Carcinogens & Reproductive Toxicity (CTR): Listed substance
  - Quartz (CAS 14808-60-7)

Warning: This product contains chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

Internal Inventories

<table>
<thead>
<tr>
<th>Countries or Region</th>
<th>Inventory Name</th>
<th>On Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substance control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A “yes” indicates this product complies with the inventory requirements administered by the governing country(s). A “no” indicates that one or more components of the products are not listed or except from listing on the inventory administered by the governing country(s).

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Issue Date: 16-March-2018
Revision Date: 19-July-2018
Version: 01
Further Information: The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

NFPA Ratings
Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.