1. IDENTIFICATION
Product Identifier: Ag-HA, Sn-HA, GL1661
Other Means of Identification: HA (Hydroxyapatite)
SDS Number: HA (Hydroxyapatite)
Product Code: Ag-HA, Sn-HA, GL1661
Recommended Use: Not available.
Recommended Restrictions: None known.
Manufacturer/Importers/Supplier/Distributor Information:
Manufacturer/Supplier: 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
Hazard statement: None
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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass, Oxide, Chemicals</td>
<td>65997-17-3</td>
<td>100</td>
</tr>
</tbody>
</table>

Constituents

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
</table>

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: If symptomatic, move to fresh air. Get medical attention if symptoms persist.
Skin Contact: Wash with soap and water. Get medical attention if symptoms occur.
Eye Contact: 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.
5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Water, Water fog, Foam, Dry chemical, and Carbon dioxide (CO2)

Unsuitable Extinguishing Media
None known

Specific Hazards Arising from the Chemical
None known

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
Wear protective clothing as described in Section 8 of this SDS

Methods and Materials for Containment and Cleaning Up
Sweep or scoop up and remove.
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
Wear appropriate personal protective equipment (See Section 8).
Wash thoroughly after handling.
Observe good industrial hygiene practices.

Conditions for Safe Storage, including any Incompatibilities
Store in a cool dry environment.
Store away from incompatible materials (See Section 10).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

<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>
</tbody>
</table>

<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>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>

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
Regular work gloves.

Hand Protection
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
Wear appropriate thermal protective clothing, when necessary.

General Hygiene
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, or/ or 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
White.

Odor
Odorless.

Odor Threshold
Not available.

pH (in water @25C)
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
Solubility (water)
Not measured.

Partition Coefficient
No data available.

Auto-ignition Temperature
Not applicable.

Decomposition Temperature
Not applicable.

Viscosity
Not applicable.

Specific Gravity
Not measured.

Refractive Index
Not measured.

10. STABILITY AND REACTIVITY

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

Chemical Stability
Stable under the prescribed storage conditions.

Possibility of Hazardous Reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Contact with incompatible materials.

Incompatible Materials
Strong acids. Strong bases.

Hazardous Decomposition Products
Metal oxides.

11. TOXICOLOGICAL INFORMATION

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

Respiratory Sensitization
No data available.

Skin Sensitization
Prolonged skin contact may cause dermatitis

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

NTP Report on Carcinogens
Glass, oxide, chemicals (CAS 65997-17-3)
Reasonably anticipated to be a Human Carcinogen.

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
Pressure Hazard No
Reactivity Hazard No

SARA 302 Extremely Hazardous Substance
Not listed.

SARA 311/312 Hazardous Chemical
No

SARA 313 (TRI reporting)
No

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 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: 22-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.