

Safety Data Sheet

1. Identification

Product Identifier	GL1729, GL1779, and GL1782 High CTE Sealing Glass Frit
Other means of identification	
SDS number	GL1729, GL1779, GL1782 Glass
Product Code	GL1729, GL1779, GL1782 Glass
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 Gann
Emergency telephone number	573-364-2338

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbols	None.
Signal word	Not assigned.
Hazard statement	Not assigned.
Precautionary statement	
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	CAS number	%
Glass, Oxide, Chemicals	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	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.
Ingestion	Seek medical advice.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	
	Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	Water. Water fog. Foam. Dry chemical, carbon dioxide (CO ₂)
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 safety data sheet.
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. Dust or powder: Use only with adequate ventilation. Avoid breathing dust.
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

US OSHA Table z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Dust (CAS-)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Dust (CAS-)	TWA	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
		50 millions of particles	Total dust.
		15 millions of particles	Respirable fraction.

US ACGIH Threshold Limit Values

Components	Type	Value	Form
Dust (CAS-)	TWA	3 mg/m ³	Respirable particles.
		10 mg/m ³	Total dust.

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/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 frit.
Color	GL1729 White, GL1779 Black, GL1782 Blue
Odor	Not available.
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.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) 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

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

Internal Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substance control Act (TSCA) Inventory	Yes

*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

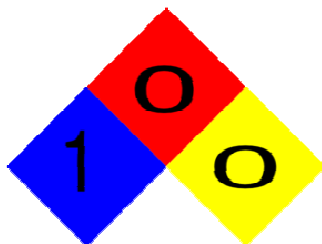
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Version 01

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.