MATERIAL SAFETY DATA SHEET

SECTION I - NAME & PRODUCT

ADDRESS:	CONTACT:
TRADE NAME, COMMON NAME OR SPECIFICATION: **CERAMIC GLASS (e.g., ZERODUR)**	EMERGENCY TELEPHONE:
CHEMICAL FAMILY OR PRODUCT TYPE: Zero-Expansion Ceramic Glasses	APPROVED BY: DATE:

SECTION II - COMPOSITION

CHEMICAL NAME	%	COMMON NAME	REG* Y/N	CAS #	OSHA PERMISSIBLE EXPOSURE LIMIT	ACGIH TLV	CARCINOGEN* Y/N
Silica	35-75		Y	014808607	15mg/m^3	10mg/m^3	N
Sodium Oxide	<1		N	012401864	N/A	N/A	N
Zinc Oxide	1-10		Y	001314132	5mg/m^3 (fume)	10mg/m^3 (dust)	N
Aluminum Oxide	20-50		Y	001344281	15mg/m^3	10mg/m^3	N
Titanium Oxide	1-10		Y	013463677	15mg/m^3	10mg/m^3	N
Zirconium Oxide	1-10		Y	001314234	5mg/m^3	5mg/m^3	N
Arsenic Trioxide	<1		Y	001363282	10mg/m^3	200mg/m^3	Y
Lithium Oxide	1-10		N	554132	N/A	N/A	N
Magnesium Oxide	1-10		Y	001309484	15mg/m^3	10mg/m^3	N
Phosphoric-Pentoxide	1-10		N	1314563	1mg/m^3	3mg/m^3	N

*REGULATED AS PER LISTS: OSHA 29 CFR 1910, SUBPART Z: ACGIH, HHS/N TP, & IAPC

SECTION III - PHYSICAL AND CHEMICAL DATA

BOILING POINT:NA	MELTING POINT: 600 ^{0} C	SPECIFIC GRAVITY (BULK): 2.53
VAPOR PRESSURE: NA	PERCENT VOLATILE BY VOL.:	VAPOR DENSITY: NA
EVAPORATION RATE:	SOLUBILITY IN WATER:	SOLUBILITY IN ALCHOHOL:
SOLUBILITY IN OTHER SOLVENTS:	APPEARANCE & ODOR: No odor, various forms and shapes	

SECTION IV - FIRE & EXPLOSION HAZARD DATA

FLASH POINT: NA	METHOD USED:	FLAMMABLE LIMITS:
EXTINGUISHING MEDIA:NA		
SPECIAL FIRE FIGHTING PROCEDURES: Use extinguishing media that is appropriate for the classification of the surrounding fire. Inorganic glass is non-combustible .		
EXPLOSION POTENTIAL: Possibility of flying glass fragments if hot glass comes in contact with water or carbon dioxide extinguishing media.		

SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTE(S) OF ENTRY:	EFFECTS OF OVEREXPOSURE (EO) OR FIRST AID (FA):
INHALATION: Acute: Upper respiratory tract irritation. Chronic: Possible mild-pneumoconiosis	Remove from exposure, seek medical attention
INGESTION: Boron poisoning can cause depression of circulation, persistent vomiting, diarrhea, and in severe cases shock and coma. Also possible severe irritation.	Seek medical attention
SKIN: Sodium oxide can be irritating to the skin	Wash with soap and water
EYE: Possible irritation	Flush well with running water, get medical attention if irritation persist
GENERAL FIRST AID:	

SECTION VI - SPILL, LEAK & DISPOSAL

1. Spill, Leak Procedures: No special precautions

2. Disposal Method: Follow Federal, State and Local Regulations

3. Use non-dust method: Use a vacuum cleaner and/or a damp disposable cloth or rag to wipe up spill.

SECTION VII - SPECIAL PROTECTION INFORMATION

1. Local Exhaust: Use local exhaust ventilation, hood or equipment to avid dispersal of fibrous or other glass into the workspace air.
2. Personal Equip.- Respirator - If dust or particulate are above the OSHA permissible exposure limits us a NIOSH approved
3. Eye Protection- Industrial safety glasses that meet ANSI Z-81 standard.
4. Protective Gloves - Recommend gloves for protection from sharp edges

SECTION VIII - SPECIAL PRECAUTIONS & COMMENTS

Reactivity: This is stable material. Glass is inert to many chemicals but may react to hot, strong alkaline solutions and with hydrofluoric and phosporic acids. Hazardous decomposition or byproducts may occur. The material may emit metal oxide fumes when heat to high temperatures.