

MATERIAL SAFETY DATA SHEET

SECTION XVI – OTHER INFORMATION

The information in this MSDS was obtained from sources believed to be reliable. However, the information is provided without any representation or warranty, expressed or implied, regarding the accuracy or correctness.

The conditions or methods of handling, storage, use, and disposal of the product are beyond the control of Guardian Industries Corp. For this and other reasons, Guardian Industries Corp. and its divisions and subsidiaries, officers, and employees do not assume responsibility and expressly disclaim liability for the loss, damage, or expense arising out of, or in any way connected with, the handling, storage, use, or disposal of the product.

Key/Legend: N/A = not available or not applicable; CAS = chemical abstract service; OSHA = Occupational Safety & Health Administration; PEL = permissible exposure limit; ACGIH = American Conference of Governmental Industrial Hygienists; TLV – threshold limit value

Last Revised: March 2, 2011

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SECTION XI – TOXICOLOGICAL INFORMATION

Nuisance particles, such as glass dust, may cause irritation when exposures are above the recommended limits. Under normal conditions of use for glass products, the likelihood of inhaling or ingesting amounts necessary for toxicological effects is very small.

SECTION XII – ECOLOGICAL INFORMATION

No information available

SECTION XIII – DISPOSAL CONSIDERATIONS

Glass dust and cullet should be disposed of according to all local, state, provincial, federal, and/or governmental requirements.

SECTION XIV – TRANSPORTATION INFORMATION

US DOT Information:	Shipping Name:	This product is not regulated
	Hazard Class:	Not applicable
	UN/NA #:	Not applicable
	Packing Group:	Not applicable

Labeling/Placarding Required: None

These products are not regulated as hazardous materials by the United States DOT or Canadian TDG transportation regulations. Consult your local, state, provincial, federal, or other governmental rules for any other specific transportation requirements.

It should be noted that any waste materials generated from these products would have to be evaluated on a case-by-case basis using applicable laws.

SECTION XV – REGULATORY INFORMATION

Consult your local, state, provincial, federal, or other governmental rules for specific regulatory requirements.

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Personal Protective Equipment:

Eye/Face: Wear safety glasses with side shields

Skin: Wear appropriate cut-resistant personal protective equipment, protecting parts of the body that may be exposed to the glass during typical glass-handling operations (e.g., gloves, jackets, hard hats, etc.).

Respiratory: Not normally needed for routine solid sheet glass handling. If airborne dust levels are generated, respiratory protection will have to be evaluated based on the nature of the specific application.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Melting Point:	1500 F	Specific Gravity:	2.45
Boiling Point:	>2000 F	Solubility-H ₂ O:	Insoluble
Vapor Pressure:	N/A	Percent Volatile:	0%
Vapor Density:	N/A	Evaporation Rate:	N/A
pH:	N/A	Odor:	None
Appearance:	Clear to Tinted; Solid		

SECTION X – CHEMICAL STABILITY AND REACTIVITY

Chemical Stability: Stable

Conditions to Avoid: None identified

Incompatibility: None identified

Hazardous Decomposition Products: None identified

Hazardous Polymerization: Will not occur

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SECTION V – FIREFIGHTING MEASURES

Flash Point: Non-Burning

Flammable Limits: LEL & UEL – N/A

Extinguishing Media: Material will not burn – use extinguishing agents appropriate for surrounding fire

Unusual Fire & Explosion Hazards: Molten glass may explode on contact with water.

SECTION VI – ACCIDENTAL RELEASE MEASURES

Not applicable to glass in the solid state. Broken product should be swept up and placed in appropriate containers for disposal based on applicable local laws.

SECTION VII – HANDLING AND STORAGE

Safe glass handling procedures should be used at all times due to the sharp nature of glass sheets and broken glass. This would include, but is not limited to, safety glasses and/or protective goggles, cut-resistant gloves, and other cut-resistant garments – particularly when and where the potential for skin contact exists.

When cutting, grinding, sawing, or sweeping, NIOSHA approved dust or fume respirators should be used to avoid breathing glass dust when a regulatory limit is exceeded or irritation is experienced. Local exhaust ventilation should be the control method of choice to reduce dust levels below the regulatory limits.

When transporting glass on racks, the glass must be properly secured to prevent falling.

SECTION VIII – EXPOSURE CONTROLS & PERSONAL PROTECTION

Engineering Controls:

Use appropriate local exhaust ventilation to keep dust/fume levels (concentrations) below acceptable limits.

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SECTION III – HAZARDS IDENTIFICATION

Glass products in their normal state do not present an inhalation or ingestion hazard. Dust generation operations (e.g., cutting, grinding, cullet sweeping, breaking, melting, etc.) may release airborne dust and/or fumes, which may present a health hazard.

Inhalation: Dust exposures could cause upper respiratory tract irritation. Glass dust is considered a nuisance particulate by OSHA and should be controlled to levels below regulatory limits. Whenever glass dust exposures exceed these limits, proper engineering controls and/or respiratory protection should be utilized.

Skin Contact: Glass dust, slivers, and fine particulates could cause local contact dermatitis. This may result in a localized irritation, or if not attended to, secondary infection. Skin protection should be worn at all times when there is the potential for skin contact (i.e., cuts, punctures, and/or abrasions).

Eye Hazards: Glass dust particles in the eye could cause irritation or abrasion of the cornea. Eye protection should be worn at all times.

Melting: Looking at molten glass could result in damage to the cornea. Protective eyewear should be worn when looking at the glass.

SECTION IV – FIRST AID MEASURES

Eyes: Wash out immediately with large volumes of water. Eye injuries from glass particles should be treated by a physician immediately.

Skin: Cuts or abrasions should be treated promptly with thorough cleansing of the affected area. More serious cuts or abrasions should involve a physician as necessary.

Inhalation: Remove from exposure area and contact physician.

Ingestion: Seek immediate medical attention.



(Based on Regulation (EC) N° 1907/2006 (REACH) Article 31 and Annex II)

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SECTION I – PRODUCT IDENTIFICATION

Manufacturer's Name:

Telephone Number:

Guardian Industries Corp.
2300 Harmon Road
Auburn Hills, MI 48326

248-340-1800

Chemical Name and Synonyms:

Glass, Cullet, Soda Lime Glass, Float Glass, Tempered Glass, Laminated Glass, Low-E Glass*, Sputter Coated Glass*

SECTION II – HAZARDOUS INGREDIENTS

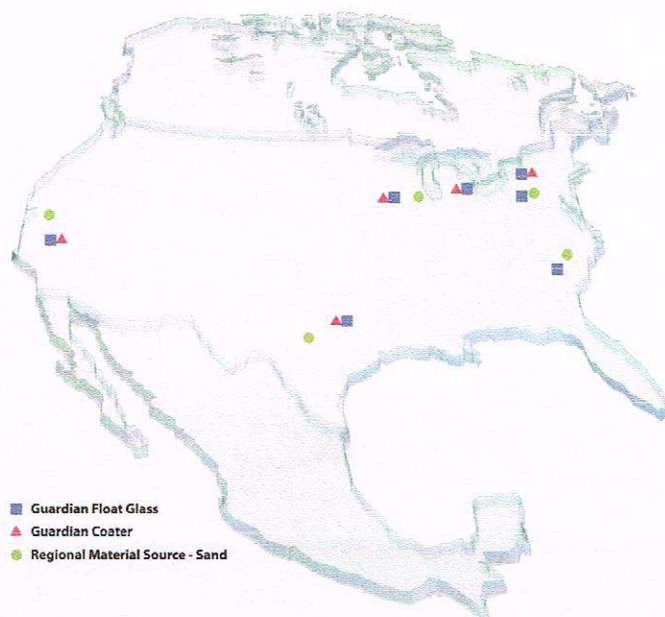
INGREDIENTS	CAS #	Percent	OSHA PEL	ACGIH TLV
Glass Oxide	65997-17-3	100*	Total Dust: 15 mg/m ³ Respirable Fraction: 5 mg/m ³	Inhalable Particulate: 10 mg/m ³ Respirable Particulates: 3 mg/m ³

These products are considered articles and not hazardous chemicals as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200). Sanding, grinding, edge-deleting, or any other activities that create dust particles from these products can create nuisance particulates.

*Coated products contain less than 0.1% of the following intentionally added metals (specific metals depend on product): silver, indium, nickel, chrome, aluminum, titanium, tin, zinc, niobium, molybdenum, and/or zirconium. Any operation that generates dust from these supplied products would have to be evaluated on a case-by-case basis to determine if any regulatory exposure limits are exceeded. If exposure limits are exceeded for dust or any metal, appropriate engineering controls (e.g., ventilation and/or filtration) and/or personal protective equipment (e.g., respirators) would have to be implemented.

**Material and Resources Credit 5:
Regional Materials cont.**

Carleton, MI 48117 – Oregon, IL 60161
230 mi.
Corsicana, TX 75109 - Cleburne, TX
76031 - 61 mi.
DeWitt, IA 52742 - Oregon, IL 60161 -
136 mi.
Florence, PA 15025 - Mapleton, PA
17052 - 101 mi.
Geneva, NY 14456 - Mapleton, PA
17052 - 181 mi.
Kingsburg, CA 93631 - Ione, CA 95640
- 147 mi
Richburg, SC 29729 - Marston, NC
28363 - 86 mi



Indoor Environmental Quality Credits 8.1 and 8.2: Daylight and Views (1-2 points)

Utilize SunGuard glass to provide building occupants with a connection between indoor and outdoor spaces, through daylight penetration and external views from regularly occupied spaces in the building. SunGuard products can provide up to 68% visible light transmission in a standard insulating glass unit, depending on the product.

Innovation and Design Process Credit 1: Innovation in Design (1-5 points)

SunGuard advanced architectural glass products can provide energy performance that substantially exceeds LEED-NC and energy code requirements which may help contribute to this credit.

Regional Priority Credit 1: Regional Priority (1-4 points)

Can be achieved through building strategies that address important environmental issues facing the region where the project is located. The potential contribution of glass products towards this bonus credit would be based priorities as established by local USGBC chapters and regional councils.

We appreciate your interest in Guardian SunGuard products. Please visit our website at <http://na.en.sunguardglass.com/IntroToAdvancedArchitecturalGlass/GreenBuilding/index.htm> for more information or contact me at 734-654-4380 or lrichard@guardian.com.

Best Regards,

Wendy Walker

Architectural & Design Specialist



November 4, 2014

Allied Window
11111 Canal Road
Cincinnati, OH 45241

Reference: LEED 2009 for New Construction v3.0
Project Name: 20 Washington Road- Princeton University
Location: 20 Washington Road, Princeton, NJ 08544
Select™ Fabricator: **Glenny Glass**
Products: Clear float glass produced at our DeWitt, IA plant.

Dear Anita:

Guardian's popular SunGuard advanced architectural glass products are made at Kingsburg, CA, DeWitt, IA, Carleton, MI, Geneva, NY, Richburg, SC and Corsicana, TX plants. These products can help projects earn Leadership in Energy and Environmental Design (LEED) credits in up to five categories. Shown below is a brief summary of the potential LEED credits that are available for 20 Washington Road- Princeton University s when using Guardian glass for windows and façade applications.

Energy and Atmosphere Credit 1: Optimize Energy Performance (2-19 points)

Utilize SunGuard glass to increase energy performance above the prerequisite standard per ASHRAE or other applicable energy codes. Guardian float glass and SunGuard Advanced Architectural Glass products include the following products:

- SuperNeutral Series: SNR 43, SN 54, SN 62, SN 68, SNX 62/27
- High Performance Series: AG 50, AG 43, LB 63, NU 40, NU 50, NU 61, RB 40, IS 20, NU 78/65
- Solar Series: Silver 20 and Silver 32
- Guardian Mirror, Textured glass
- Float Glass: clear, green, UltraWhite™, CrystalGray®, TwilightGreen™, MidnightGray™

Material and Resources Credit 4: Recycled Content (1-2 points)

LEED v.3 does not allow in-plant recycled glass cullet to be counted as recycled content. Only recycled glass brought in from third-party manufacturing facilities will meet the definition of recycled content. The primary raw material for architectural glass is 72% silica sand. Trace amounts of other raw materials are present. Guardian float plants typically have 2% pre-consumer recycled content in their clear, green and TwilightGreen float glass and SunGuard glass products. UltraWhite, CrystalGray, and MidnightGray all have 0% pre-consumer recycled content. SatinDeco does not qualify as it is manufactured in Spain.

Material and Resources Credit 5: Regional Materials (1-2 points) The primary raw material for architectural glass is silica sand. Guardian's source for silica sand is shown in the key on the following page. Guardian's silica sand locations are within 500 miles of our float plants. To obtain this credit, building materials must be extracted, manufactured and fabricated within 500 miles of the project site. Guardian's independent Select™ Fabricator Glenny Glass is located in Milford, OH and is approximately 598 miles from 20 Washington Road- Princeton University located in Princeton, NJ .