



# MSDS

## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

*Product name:* TimberSIL<sup>®</sup> converted glass matrix, found in situ in TimberSIL<sup>®</sup> wood  
*Product description:* TimberSIL<sup>®</sup> amorphous glass matrix that is distributed throughout TimberSIL<sup>®</sup> wood  
*Manufacturer:* TimberSIL<sup>®</sup> Products  
7481 Huntsman Boulevard, Suite 520, Springfield, VA 22153  
Phone number: 703-644-9306  
*In case of emergency call:* 1 703-644-9306  
*For technical information or questions:* 1 703-644-9306  
*For customer service call:* 1 704-500-6567

### 2. COMPOSITION/INFORMATION ON INGREDIENTS:

Chemical and Common Name: TimberSIL<sup>®</sup> amorphous glass matrix

### 3. HAZARDS IDENTIFICATION

*Emergency Overview:* Clear amorphous solid matrix; inert and non-irritating, present throughout wood. (Although this information is presented for TimberSIL<sup>®</sup> converted glass matrix, the primary material present in an emergency situation is wood; standard precautions related to wood should also be followed.)  
*Eye contact:* If present as dust, wear safety glasses, otherwise N/A.  
*Skin contact:* Non-irritant  
*Inhalation:* A suitable respiratory protective device is recommended for high levels of dust, if present, see Section 8, otherwise N/A.  
*Ingestion:* N/A.  
*Chronic hazards:* No known chronic hazards.  
*Physical hazards:* No known physical hazards.  
*NFPA and HMIS ratings (scale 0-4):* Health = 1; Fire = 0, Reactivity = 0

### 4. FIRST AID MEASURES: Product is infused into wood, and is innocuous. Follow precautions for wood dust, if present.

*After Inhalation:* If present as dust and quantities inhaled in excess of section 8, supply fresh air; provide medical attention in case of complaints. Otherwise, N/A.  
*After Eye:* If present as dust, flush eyes with plenty of water to remove any solid particles. Otherwise, N/A.  
*After Skin:* If present as dust, if desired, brush off or wash off skin. Otherwise, N/A.  
*After Ingestion:* N/A

### 5. FIRE FIGHTING MEASURES

*Flammable limits:* Product is a noncombustible material that is interspersed into wood.  
*Extinguishing Media:* Select fire fighting measures that suit the environment.  
*Hazards to fire-fighters:* No unique hazards. See Section 3.  
*Fire-fighting equipment:* No unique equipment required.

### 6. ACCIDENTAL RELEASE MEASURES, See also Sections 7, 8, and 13.

*Personal protection:* If present as dust exceeding levels of Section 8, wear safety glasses and provide appropriate respiratory protection. Otherwise, N/A.  
*Environmental properties:* Product presents no environmental hazard.  
*Small spill cleanup:* N/A. Material is created within and infused throughout lumber.  
*Large spill cleanup:* N/A. Material is created within and infused throughout lumber.  
*CERCLA RQ:* There is no CERCLA Reportable Quantity for this material.

### 7. ROUTINE/DAILY HANDLING AND STORAGE

*Handling:* Follow procedures for handling wood.  
*Protection against Explosions and Fires:* TimberSIL<sup>®</sup> amorphous glass matrix is not flammable.  
*Regulation/Class of Flammable Materials:* None applicable.  
*Storage:* There are no special requirements for storage. Follow standard procedures for organization and arrangement of materials.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

*COMPONENTS WITH LIMIT VALUES THAT REQUIRE MONITORING AT THE WORKPLACE:*

PEL 80 g/m<sup>3</sup> OSHA TWA for amorphous silica, if present as dust  
TLV 10 (total dust), 5 (respirable fraction) g/m<sup>3</sup>, if present as dust

*General Protective and Hygienic Measures:* The usual precautionary measures should be followed.  
*Respiratory protection:* If exposure level is exceeded, a suitable respiratory protective device is recommended.  
*Skin protection:* If present as dust, brush or wash off if desired, otherwise N/A.  
*Eye protection:* If present as dust, wear safety glasses, otherwise N/A.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

*Melting Point* : >1000 °C  
*Boiling Point*: >1000 °C  
*Vapor Pressure*: 0%  
*Color*: Colorless, transparent  
*Odor*: Odorless  
*pH*: N/A  
*Water Solubility*: insoluble (see leaching, below).  
*Hydrolysis as a Function of pH*: hydrolysable in concentrated solutions of HF, H<sub>2</sub>SiF<sub>6</sub>, or H<sub>3</sub>PO<sub>4</sub>, pH <2, or in heated, concentrated alkaline solutions, pH>10.  
*Dissociation Constants in Water*: N/A  
*Thermal Stability*: thermal stability to >1000 °C  
*Partition Coefficient*: N/A  
*Adsorption Coefficient (Koc) in soil and sewage sludge*: N/A  
*Molecular Weight* 645,000 Daltons  
*Solution Behavior in Water*: insoluble (see leaching below, Section 12)

## 10. STABILITY AND REACTIVITY

*Stability*: This material is stable under standard conditions of use and storage.  
*Dangerous Products of Decomposition*: No dangerous decomposition products known.  
*Conditions to Avoid*: None associated with product. Follow standard precautions for wood.  
*Materials to Avoid*: None.

## 11. TOXICOLOGICAL INFORMATION

*Acute Toxicity*: animal studies support very low toxicity for product.  
*Oral* LD50 10 g/kg (rat)  
*Dermal* LD50 >5 g/kg (rabbit)  
*Inhalative* LC50 0.139 mg/kg/14h (rat)  
*Primary Irritant Effect*:  
*In the Eye*: If present as dust, may cause redness, similar to the effects of dust.  
*In the Lungs*: If present as dust and inhaled, may cause irritation.  
*Sensitization*: No sensitizing effects known.  
*Subacute to Chronic Toxicity*: No negative effects were determined during tests for chronic oral toxicity, carcinogenicity, teratogenicity and fertility. No irreversible changes and no symptoms of silicosis were determined during tests for chronic inhalative toxicity.  
*Special Studies*: There are no known reports of carcinogenicity of any component of TimberSIL<sup>®</sup> amorphous glass matrix.

## 12. ECOLOGICAL INFORMATION

*Leaching*:  
*Si leaching from wood, modified SPLP*: 400 mg l<sup>-1</sup> <sup>(1)</sup>  
*Si leaching in soil column: 4 mg l<sup>-1</sup>* <sup>(2)</sup>  
<sup>(1)</sup> Si value is from the <0.01% unconverted (soluble) TimberSIL<sup>®</sup> residue remaining in the wood, and is the total leachable quantity.  
<sup>(2)</sup> Si levels from <sup>(1)</sup> complex with Ca and metals in soil. Si levels of <sup>(2)</sup> are primarily from the much higher quantities of other forms of Si naturally present in soil, % range 20-40. Leaching in soil column due to unconverted TimberSIL<sup>®</sup> residues is indistinguishable from background.  
*Biodegradation*:  
*(a)* Biodegradation under aerobic static laboratory conditions: below detectable limits (i.e. Bod less than 2.5% of theoretical) in 20 days  
*(b)* Stability continues to increase slowly over time (years) due incorporation of aluminum, other metals and calcium into the matrix, and complexing with a wide variety of soil constituents.  
*Ecotoxicity*: generally not hazardous for water  
*EC50/48h/Daphnia magna* NR to > 1 g l<sup>-1</sup>  
*Earthworm/14d*: NR

## 13. DISPOSAL CONSIDERATIONS

*Classification*: Waste material is not a hazardous waste.  
*Disposal Method*: Landfill solids in accordance with federal, state and local regulations.

## 14. TRANSPORT INFORMATION.

This product is not regulated as hazardous goods by DOT, ADR, IMO, or IATA.

## 15. OTHER INFORMATION

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*Date*: March 31, 2005