



MSDS

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: TimberSIL[®] converted glass matrix, found in situ in TimberSIL[®] wood
Product description: TimberSIL[®] amorphous glass matrix that is distributed throughout TimberSIL[®] wood
Manufacturer: TimberSIL[®] Products
5415 Backlick Rd., Suite C, Springfield, VA 22151
Phone number: 703-941-5171
In case of emergency call: 1 703-941-5171
For technical information or questions: 1 704-500-6567
For customer service call: 1 704-500-6567

2. COMPOSITION/INFORMATION ON INGREDIENTS:

Chemical and Common Name: TimberSIL[®] 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[®] 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[®] 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/m³ OSHA TWA for amorphous silica, if present as dust
TLV 10 (total dust), 5 (respirable fraction) g/m³, 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, H₂SiF₆, or H₃PO₄, 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[®] amorphous glass matrix.

12. ECOLOGICAL INFORMATION

Leaching:
Si leaching from wood, modified SPLP: 400 mg l⁻¹ ⁽¹⁾
Si leaching in soil column: 4 mg l⁻¹ ⁽²⁾
⁽¹⁾ Si value is from the <0.01% unconverted (soluble) TimberSIL[®] residue remaining in the wood, and is the total leachable quantity.
⁽²⁾ Si levels from ⁽¹⁾ complex with Ca and metals in soil. Si levels of ⁽²⁾ 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[®] 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⁻¹
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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