



## Seamless Technologies Inc. Technical Specification

SeamTek Glasswall TQ  
Epoxy Quartz Wall System  
Section- \_\_\_\_\_

www.SeamTekInc.com

1-800-666-6216

### Part 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplemental Conditions and Division 1 Specification sections apply to work of this section.

#### 1.02 WORK INCLUDED

- A. Provide materials, labor and equipment required to prepare designated walls and install wall finish as shown on the drawings.
- B. Related Work:
  - 1. Section Plumbing, drains.
  - 2. Section 07000: Sealants, silicone sanitary and USDA sealants.
  - 3. Flooring and cove base detail

#### 1.03 QUALITY ASSURANCE

- A. Manufacturer: Obtain all flooring materials required for this Section from a single source.
- B. Contractor: Shall have a minimum of 5 years experience in the installation of seamless walls systems and be approved in writing by the specified manufacturer.

#### 1.04 SUBMITTALS

- A. Submit three 12" X 12" system samples with the bid for purposes of chemical resistance testing. The end user has the option to conduct on site chemical resistance testing "in their hands" to assure that the submitted system is acceptable for use in their environment. The end user reserves the right to refuse any bidder whose samples do not meet with their approvals as a result of these tests.
- B. Manufacturer's standard single source warranty in accordance with Section 1.06 WARRANTY.
- C. Manufacturer's standard color charts for color selection.

#### 1.05 JOB SITE MOCK-UP:

- A. A floor to ceiling sample of width to be determined but no less than 10 feet wide mock-up must be installed at the job site to establish a standard for site installation quality. The same crew shall install the mock up and the job installation. Mock up shall be installed and finished with application of topcoats for approval by architect and/or owner's representative.

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#### 1.06 WARRANTY

Furnish manufacturer's written warranty on seamless flooring for period of two years after installation, warranting against loss of bond and wear through to concrete substrate (through normal wear and use) exclusive of substrate moisture related problems. Warranty shall be single source from the manufacturer, including material and labor. Warranties as otherwise directed by the GC or End User will necessarily negate the warranty described herein.

#### 1.07 DELIVERY, HANDLING AND STORAGE

- A. Deliver materials in manufacturer's undamaged containers, clearly marked with the following:
  - 1. Product Name
  - 2. Manufacturer's Name
  - 3. Resin or Hardener Designation
  - 4. Mix Ratio of Resin and Hardener
- B. Handle materials in a safe and proper manner to avoid damage or spill.
- C. Inspect direct jobsite deliveries to verify correct material and quantities are received in good condition.
- D. Replace, at no cost to the owner, materials that are found to be defective in manufacturing or damaged in transit, handling or storage.
- E. Store materials per manufacturer's instructions and as follows:
  - 1. Seals and labels shall be intact and legible.
  - 2. Temperature of storage area shall be maintained between 60°F and 80°F.
  - 3. Do not use materials which have been stored for a longer period of time than the manufacturer's maximum recommended shelf life.

#### 1.08 JOB SITE CONDITIONS

- A. Pre-Installation conference shall be required with General Contractor, Owners Representative, Finish Contractor and/or Manufacturer's Representative to review the following:
  - 1. Evaluate wall conditions and extent of repairs necessary for Contractor to begin normal preparation and installation.
  - 2. Evaluate detail conditions at all penetrations, terminations and perimeter locations. Detail problems shall be documented and resolved prior to system installation.
  - 3. The Finish Contractor shall examine poured concrete walls designated to receive the TQ system for potential moisture vapor problems and provide an add option cost as part of the bid for the remediation of moisture vapor. Moisture remediation shall be performed by a contractor that is certified by the manufacturer of the remediation material.
  - 4. Review job site conditions, including temperature, power, and lighting. Such problems shall be documented and resolved prior to wall installation.
- B. Protect surrounding substrate and surfaces as well as in place equipment from damage during surface preparation and system installation.

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- C. Job area shall be free of other trades during floor installation, and for a period of 48 hours upon completion.
- D. General Contractor shall provide adequate ventilation by use of fans or other devices.
- E. General Contractor shall maintain lighting at final end use levels during the installation.
- F. General Contractor shall provide minimum substrate and ambient temperature of 70°F and relative humidity below 80% during floor installation and until final acceptance.

**1.09 CURING, CLEAN UP AND PROTECTION**

- A. Cure final floor system in accordance with manufacturer's recommendations.
- B. Clean up work area, removing all equipment, materials and trash.
- C. General contractor shall provide temporary protection from construction traffic and other trades prior to final acceptance by the owner.

**Part 2 - PRODUCTS**

**2.01 MATERIALS:**

**A. Systems Overview:**

The wall system shall be SeamTek Glasswall TQ applied at a nominal finish thickness of 1/8". System shall be sealed with Chemical Resistant Epoxy resin. All epoxy resins shall be 100% solids for low odor and job-site safety during installation. Aggregate to be decorative ceramic coated quartz blends to be selected by the Architect. System shall have the following properties:

Compressive Strength	ASTM C-579	9,000 psi
Tensile Strength	ASTM C-307	2,400 psi
Flexural Strength	ASTM C-580	4,000 psi
Flexural Modulus	ASTM C-580	2.5 X 10 <sup>5</sup>

**B. Chemical Resistance Chart (The following is a generic listing of chemical resistance and can not be counted on to be accurate for all commercial solutions. We recommend testing of the specific chemicals to verify resistance.)**

E	-	Excellent (up to 7 days)
G	-	Good (up to 24 hrs.)
SS	-	Splash & Spill with immediate removal
NR	-	Not Recommended

Chemical Exposure	Chemical Resistant Epoxy	Chemical Exposure	Chemical Resistant Epoxy
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Acetic Acid 10 %	SS	Maleic acid, < 40%	NR
Acetic Acid 50 %	SS	Maleic acid, > 40%	NR
Acetic Acid, glacial	NR	Methanol	SS
Acetone	SS	Methyl ethyl ketone (MEK)	SS
Acrylonitrile	NR	Methyl isobutyl Ketone (MIBK)	SS
Aluminum Chloride	E	Methylene chloride	NR
Aluminum Nitrate	E	Mineral spirits	E
Ammon. Hydroxide, 28%	SS	Motor oil	E
Aniline	NR	Nitric acid, 10%	E
Benzene	SS	Nitric acid, 30%	SS
Benzoic acid	NR	Oleic acid	E
Butyl acetate, 10%	NR	Oxalic acid, 10%	G
Butyric acid, 10%	G	Perchloric acid, 30%	NR
Calcium chloride, 30%	E	Perchloroethylene	NR
Calcium hypochlorite, 20%	E	Phenol, > 10%	SS
Chlorine, Wet and dry	SS	Phenol, > 10%	NR
Chromic acid, 10%	SS	Phosphoric Acid, 50%	E
Citric acid, 10%	E	Phosphoric acid, 85%	SS
Clorox, full strength	SS	Picric acid	NR
Cresylic acid	NR	Potassium hydroxide	E
Diacetone alcohol	NR	Potassium permanganate, 25%	SS
Diethyl Phthalate	E	Silver nitrate, 10%	SS
Ether	NR	Skydrol A500	E
Ethyl Acetate	NR	Sodium hydroxide, 10%	E
Ethyl alcohol, 95%	SS	Sodium hydroxide, 50%	E
Ethylene dichloride, 10%	NR	Sodium hypochlorite, 15%	SS
Ethylene glycol	E	Sodium hypochlorite, 50%	NR
Formaldehyde, 37%	SS	Sulfuric acid, 10%	E
Formic acid, < 10%	SS	Sulfuric acid, 30%	E
Formic acid, > 10%	SS	Sulfuric acid, up to 98%	SS
Gasoline	E	Tannic acid	G
Glycerin	E	Tartaric acid	G
Hydraulic Fluid	E	Toluene	SS
Hydrochloric acid, 10%	E	Triacetin	G
Hydrochloric acid, 37%	G	Trichloroethane	G
Hydrofluoric acid	NR	Trichloroethylene	G
Hydrogen peroxide, 6%	SS	Trisodium phosphate	E
Isopropyl alcohol	SS	Turpentine	G
JP Jet Fuel	E	Urea	E
Lactic acid, < 20%	E	Urine	E

### Part 3 - EXECUTION

#### 3.01 Surface Preparation

- A. **For Poured Concrete and Tilt up Walls:** Prepare concrete to "open" surface pores by means of sand-blasting or sponge jet, removing contaminants and bond breaking substances, including but not limited to dust, latencies, curing compounds, coatings,

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sealers, oil and grease. Oil and grease not removed by blasting shall be chemically removed. Mechanically remove delaminated or deteriorated concrete by means acceptable to job site conditions. Areas to be patched shall be saw cut to minimum 1/2" depth at perimeters and keyed to existing concrete. Use patching materials approved by the manufacturer of the coating system.

-or-

**For Renovation Projects Where Existing Coatings are in Place:** Assure that the existing coating is bound tightly to the substrate by performing preliminary "pull tests". Assure that the existing coatings and substrate are dry and exhibit no signs of a poor bond. Remove loose and deteriorating coatings to expose sound substrate and patch back to original elevation prior to prep of the remaining surface. Thoroughly prepare the existing surface using sand blast or sponge jet. Grinding with abrasive wheels or sand paper will be acceptable only if approved by the manufacturer.

#### 3.02 APPLICATION

- A. Apply the TQ system components in accordance with the statements in System Overview above and handle materials per manufacturer's installation instructions, including mixing and application. Terminate at edge of expansion joints, or as designated by Design Professional. Cure resinous materials in compliance with manufacturer's directions.

#### 3.03 CLEANING AND PROTECTION

- A. Cleaning: Remove all debris resulting from the system installation during the progress of the work.

## SeamTek® GlassWall TQ

### Product Data

#### 1. Product Description

##### Basic use

SeamTek® GlassWall TQ is a three component 100% solids, low-odor, low-VOC epoxy resin wall covering system. It chemically cures to form a highly abrasion resistant wall system where high performance surface interior finishes are required. It has been specifically designed to exhibit decorative characteristics, impact resistance, chemical resistance and durability.

It has been formulated as a mortar to be a nominal 1/8" thick and otherwise it is the same resin and aggregate formulation as tan epoxy Quartz floor.

The basic resin component (SR101) is formulated to work with several selected hardeners to serve as a highly durable matrix. The seal coat hardener (CRH405) assures outstanding chemical resistance when compared to other CR epoxy products. SeamTek® GlassWall TQ is ideal for primate, large animal and dog holding areas, wash down cubicles and many other high impact uses.

SeamTek® GlassWall TQ can be installed over masonry, poured concrete and hard board surfaces to provide a seamless aesthetic surface. Unless otherwise specified, SeamTek® GlassWall TQ will follow the contour(s) of the existing substrate and can not be used as a stand alone system to correct such problems.

##### Features and benefits include:

- Color Stable
- Decorative wall system
- Excellent adhesion properties
- Good workability – easy to spread
- 100% solids
- Low-VOC
- Low odor
- Excellent impact resistance
- High Taber Resistance

The STI SeamTek systems are composed of resins and aggregates which utilize the best available technology for

safety and performance. All products and systems are extensively field tested prior to use on SeamTek projects.

##### Material Components/Ratios and Spread Rates

SeamTek® GlassWall TQ is designed to be 1/8" thick. It is referred to as a mortar mix system; the resins and ratios are as follows:

- 1) Basic mortar mix: **SR101 and SH101 in 2:1** mix ratio as above. Mix 1 ½ quarts (three pints) of mixed liquid with 11 quarts of color quartz or 50 mesh sand. Trowel on wall @ 12 – 13 square feet per gallon of mortar mix.
- 2) Grout Coat: Mix neat **resin SR101 and hardener CRH405** in a 2:1 ratio and apply at a spread rate sufficient to fill the surface porosity. Repeat in successive applications until "holidays" disappear. This may require successive days.
- 3) Seal Coat: Mix neat **resin SR101 and hardener CRH405** in a 2:1 ratio and apply at a spread rate sufficient to leave an even sealed surface.

##### Sizes

The binder resin and hardener are packaged in U.S. 5 gallon pails and measured bags of aggregate.

##### Limitations

SeamTek® GlassWall TQ must not be used to bridge

**Table 1 Typical Physical Properties**

Property	Measuring Standards and Conditions	Results Part A/Part B
Specific Gravity	ASTM D 70, Fisher #3-247 pycnometer	1.25
Weight +/- 0.4 lbs./gal.	ASTM E 201	10.7 lbs./gal.
Non-volatile Content	ASTM D 1353, 18 hrs. at 200°F (93°C)	100%
Viscosity, cps	LV #3 Spindle, Thix 3.01, 77 degree F	8,850 cps
Flash Point, TCC minimum	Seta Flash	Greater than 200°F (93°C)
Solvent Odor	ASTM D 1296	Extremely low
Pot Life		20 minutes at 72°F (22°C) & 50% R.H.

moving cracks or joints. Non-moving cracks or joints that must be over coated require rigid repairs. See STI Technical Manual System Specifications for details.

Surface or air temperature must be between 65° F minimum and 75°F maximum and relative humidity below 75%. Lower temperatures will extend cure time and higher temperatures will reduce pot and work life.

#### **Storage and Handling**

Because SeamTek® GlassWall TQ has a flash point above 200°F (93°C), transportation, storage and handling are less restricted.

#### **Product Health and Safety Information**

Refer to container labels and Material Safety Data Sheets available from STI for health, safety and environmental information. If necessary, call STI at (800) 666-6216.

#### **Applicable Standards**

SeamTek® GlassWall TQ has been tested in accordance with American Society for Testing and Materials (ASTM) methods. Refer to Table 1 on page 1 for more information. SeamTek Epoxy and Urethane can be used as a wall coating in food processing areas and other similar applications. The USDA and FDA no longer regulate coatings used on floors, walls, and ceilings in food process areas, since the surfaces are not intended for food contact.

#### **Surface Preparatory Work**

Preparatory work must be done in accordance with procedures described in STI Technical Manual.

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(800) 666-6216  
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Your STI Associate is:

Measure both parts by volume 2 to 1 (2 parts resin to 1 part hardener) into plastic marked containers. Pour resin and hardener into a separate container and agitate using a jiffy paddle and low speed drill (400-600 rpm). Agitate for 2 minutes, and then scrape sides of container and mix for an additional minute. Consider mixing small batches to reduce potential waste. To avoid exothermic reaction in mixing container, do not let mixed components sit in container. Immediately, either spread the mixed epoxy and aggregate onto the wall to be coated. Spread or finish material according to application instructions contained in STI Technical Manual.

### **3. Warranty**

STI Wall Systems are installed by STI Associate Contractors and are available with the STI Single Source Limited Warranty for Labor and Material. This Product Data Sheet is for your information and is neither a contract nor a product warranty. Your installation contract is provided by your STI Associate Contractor. STI's warranty to you is made solely in the STI Single Source Limited Warranty for Labor and Material. Contact your Associate Contractor for the specific warranty document.

### **4. Maintenance**

SeamTek Systems are hard seamless surfaces that will provide years of life with little maintenance. For more detailed maintenance instructions, please request STI Floor Maintenance Instructions. Periodic inspections by your STI Associate Contractor are recommended to discuss ways to extend the life of the floor care.

### **5. Technical Service**

Call your STI representative for assistance.

# sti® Seamless Technologies, Inc.

## SeamTek®

## Pigmented Epoxy Resin WP 850

### Product Data

#### 1. Product Description

##### Basic use

SeamTek® Pigmented Epoxy Resin WP850 is a two component 100% solids, low-odor, low viscosity, low VOC resin that chemically cures to form a rigid and highly abrasion resistant binder for high performance interior flooring systems. It has been specifically designed to exhibit excellent flow characteristics, air release, and workable viscosity.

This product is compatible with most aggregates used to achieve skid, impact or wear resistance. It may be used as Seal or finish coat as well as a binder resin.

##### Features and benefits include:

- No amine blush – no frosting
- Self leveling
- Low foaming
- Excellent adhesion to concrete
- Good workability – easy to spread
- 100% solids – solvent free
- Low VOC
- Low odor
- Low flammability
- Compatible with wide range of aggregates

The STI SeamTek systems are composed of resins and aggregates which utilize the best available technology for safety and performance. All products and systems are extensively field tested prior to use on SeamTek projects.

##### Composition and Materials

SeamTek Pigmented Epoxy Resin WP850 is a chemical curing, two component, 100 % solids epoxy coating.

##### Sizes

The binder resin and hardener are packaged in 5 U.S. gallon (18.9 liter) pails.

##### Limitations

SeamTek WP850 must not be used to bridge moving cracks or joints. Non-moving cracks or joints that must be over coated require rigid repairs. See STI Technical Manual System Specifications for details. Surface or air

temperature must be between 65°F minimum and 80°F maximum and relative humidity below 80%. Lower temperatures will extend cure time and higher temperatures will reduce pot and work life.

##### Storage and Handling

Because WP850 has a flash point above 200°F (93°C), transportation, storage and handling are less restricted. The binder resin is freeze/thaw stable, which allows flexibility in storage of the product, on or off site.

##### Product Health and Safety Information

Refer to container labels and Material Safety Data Sheets available from STI for health, safety and environmental information. If necessary, call STI at (800) 666-6216.

##### Applicable Standards

STI SeamTek Pigmented Epoxy Resin WP850 has been tested in accordance with American Society for Testing and Materials (ASTM) methods. Refer to Table 1 on page 1 for more information. SR101 can be used as a floor coating in food processing areas and other similar applications. The USDA and FDA no longer regulates coatings used on floors, walls, and ceilings in food process areas, since the surfaces are not intended for food contact.

##### Surface Preparatory Work

Preparatory work must be done in accordance with procedures described in STI Technical Manual.

**Table 1 Typical Physical Properties**

Property	Measuring Standards and Conditions	Results Part A/Part B
Specific Gravity	ASTM D 70, Fisher #3-247 pycnometer	1.07
Weight +/- 0.4 lbs./gal.	ASTM E 201	9.2 lbs./gal.
Non-volatile Content	ASTM D 1353, 18 hrs. at 200°F (93°C)	100%
Viscosity, cps	ASTM D 1475 77°F (25°C)	Self-leveling 1200-1500
Flash Point, TCC minimum	Seta Flash	Greater than 200°F (93°C)
Solvent Odor	ASTM D 1296	Extremely low
Pot Life		50 to 60 minutes at 72°F (22°C) &

### Mixing

Caution, Containers used to measure WP850 resin and Harder must be marked appropriately and only used to measure the indicated component. Container used to mix both resin and hardener must be cleaned or changed after mixing each batch to avoid residual material affecting viscosity and cure rates.

Measure both parts by volume 2 to 1 into square plastic marked containers. Pour resin and hardener into a separate container and agitate using a jiffy paddle and low speed drill (400-600 rpm). Agitate for 2 minutes, then scrape sides of container and mix for an additional minute. Avoid generating air bubbles and foam. Consider mixing small batches to reduce potential waste. To avoid exothermic reaction in mixing container, do not let mixed components sit in container. Immediately, either pour the mixed epoxy binder resin onto the floor to be coated or thoroughly mix with aggregate and then pour onto floor. Spread or finish material according to application instructions contained in STI Technical Manual.

### 3. Warranty

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### 5. Technical Service

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**Table 2 – Typical Performance Properties**

Property	Measuring Standards and Conditions	Binder Resin Results Only See Note 1 below
Drying time	ASTM D 1475 77°F (25°C)	To Touch: 8 to 12 hrs., max. To complete: 24 hrs. max.
Hardness (indentation)	ASTM D 2240 Rex D Model 1700	65-70 resin only 80-85 with aggregate
Elongation	ASTM D 638	Less than 0.1%
Tensile Strength	ASTM D 638	4500 psi (31 MPa)
Water Absorption	ASTM D 570-95	Less than 0.2%
Indentation Resistance	Mil. Std. D-3134	Zero
Water Vapor Transmission	ASTM E 96-94	Less than 0.10 U.S. perms
Weathering Resistance	ASTM G 26 Type B, BH, 300 hrs	Slight Yellowing
Abrasion Resistance	ASTM C 501, CS-17 Wheel, 1000 rev. with 1000 gram weight	Less than 0.1 grams weight loss
Bond Strength to Concrete	ASTM D 4541	350 to 500 psi (2.4 to 3.4 MPa) epoxy holder fails
Electrical Conductivity		Non conductive
Flammability	ASTM D 635	Self-Extinguishing

1. For additional performance properties for binder resin with aggregate added (ie. Tensile Strength, Flexural Strength, Flexural Modulus, Compressive Strength, Coefficient of Linear Expansion, etc.) refer to STI technical manual for specific system(s) selected.

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Your STI Associate is:

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**Glasswall TQ Wall System  
MSDS Listing  
and  
Explanation of Use**

<b>PROPER NAME</b>	<b>Use within System</b>	<b>Name on general MSDS List</b>
SR101 and SH101	Epoxy Primer for the system	SR101 and SH101
CRH405	Chemical resistant epoxy used for grout and seal coat	CRH405
Estes Quartz	Color quartz used as aggregate for the system	Sand
Sphere Glass	Glass spheres used to enhance the act of troweling	Sphere glass

## MATERIAL SAFETY DATA SHEET

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME (ON LABEL) : SeamTek™ Standard Hardener, SH101  
 COMMON NAME: epoxy hardener DATE PRINTED: 7/2/02  
**DISTRIBUTOR:**  
**SEAMLESS TECHNOLOGIES, INC.** EMERGENCY TELEPHONE: CHEMTREC  
 PO Box 428 24 HOURS A DAY 1 (800) 424-9300  
 Chestertown, MD 21620 INFORMATION TELEPHONE: 1 (800) 666-6216  
 DATE PREPARED : 23-May-94 PREVIOUS MSDS REVISION DATE: FIRST  
 REV.

### SECTION 2 - COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Wt %	OSHA PEL	ACGIH TLV
polyoxalkyleneamine	9046100		N.E.	N.E.
triethylene glycol diamine	929599		N.E.	N.E.
epoxy curing agent	mixture		N.E.	N.E.
alkyl phenol	84852153		N.E.	N.E.
alpha hydroxy toluene	100-51-6		N.E.	N.E.

T.S.C.A. Status - OK on all above components.

### SECTION 3 - PHYSICAL & CHEMICAL PROPERTIES

<b>APPEARANCE</b>	: clear	<b>SPECIFIC GRAVITY (H2O=1.0)</b>	:>1.00
<b>PHYSICAL STATE</b>	: liquid	<b>DENSITY (LB/GAL)</b>	: N/A
<b>VAPOR PRESSURE</b>	: N/A mm Hg.	<b>MELTING POINT (°C)</b>	: N/A
<b>ODOR</b>	: amine odor	<b>EVAPORATION RATE</b>	: N/A
<b>VAPOR DENSITY</b>	: N/A	<b>(Butyl Acetate = 1)</b>	
<b>WATER SOLUBILITY</b>	: insoluble	<b>V.O.C</b>	: 3.14

lb/gal

### SECTION 4 - STABILITY & REACTIVITY

**STABILITY** : Stable.  
**CONDITIONS TO AVOID** : Keep container closed when not in use.  
**INCOMPATIBILITY** : Avoid contact with strong oxidizers or acids.  
**HAZARDOUS DECOMPOSITION BYPRODUCTS**: By fire: carbon dioxide, carbon monoxide, nitrogen oxide, aldehydes.  
**HAZARDOUS POLYMERIZATION** : Will not occur.  
**CONDITIONS TO AVOID** : Uncontrolled reaction with epoxy resins. Avoid breathing fumes generated by hardener and epoxy mixture when not used within established pot life.

*(Continued on page 2)*

**SECTION 5 - FIRE & EXPLOSION HAZARD DATA**

**FLASH POINT (CLOSED CUP METHOD)** :>200°F      **LOWER EXPLOSIVE LIMIT** :N/A  
**UPPER EXPLOSIVE LIMIT** :N/A

**EXTINGUISHING MEDIA** :Foam, CO<sub>2</sub>, dry chemical, water spray

**SPECIAL FIRE FIGHTING PROCEDURES** :Wear full protective equipment including self contained breathing apparatus. Irritating and/or toxic gases may be generated by fire.

**UNUSUAL FIRE AND EXPLOSION HAZARDS** :Combustion products may be toxic. Cool storage containers with water spray to prevent pressure buildup which could rupture containers.

**SECTION 6 - HEALTH HAZARD DATA**

**ROUTES OF ENTRY:**      **INHALATION?** yes      **SKIN?** yes      **INGESTION?** yes

**SIGNS AND SYMPTOMS OF OVEREXPOSURE:** Irritation of skin.

**HEALTH HAZARDS (ACUTE AND CHRONIC):**ACUTE:Irritation of skin and dermatitis.

CHRONIC:Repeated overexposure will cause severe skin irritation, dermatitis and sensitization. Sensitized persons may experience rapid irritation of skin upon exposure. **NOTE:Persons with lung disorders or who are sensitized should not use this product.**

**CARCINOGENICITY:**      **NTP?** No      **IARC MONOGRAPHS?** No      **OSHA REGULATED?** No

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY OVEREXPOSURE:**

Allergy, skin disorders.

**SECTION 7 - FIRST AID PROCEDURES**

**EYES:** Flush with water, holding lids open for 15 minutes or more. Call physician for advice if necessary.

**SKIN:** Promptly wash with soap and water. Do not wash with solvents. Seek medical advice if irritation develops or persists.

**INHALATION:** Move person to fresh air if effects occur. If needed, give oxygen or artificial respiration to improve breathing. Consult physician.

**INGESTION:** Get medical attention immediately. Never give liquids to an unconscious or convulsing person.

**SECTION 8 - PRECAUTIONS FOR SAFE HANDLING AND USE**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Wear protective clothing to prevent exposure. Stop spill and dike to prevent spreading. Cover spill with absorbent materials and collect into containers. Clean contaminated area with detergent and water or a steam cleaner for best results.

**WASTE DISPOSAL METHOD:** Dispose in accordance with all Federal, State and Local requirements.

**HANDLING AND STORAGE PRECAUTIONS:** Keep containers tightly closed when not in use.

**OTHER PRECAUTIONS:** None known.

(Continued on page 3)

**SECTION 9 - EXPOSURE CONTROL & PERSONAL PROTECTION**

**RESPIRATORY PROTECTION:** Provide adequate exhaust ventilation and/or NIOSH approved amine cartridge respirator.

**VENTILATION:** **LOCAL EXHAUST:**if needed **SPECIAL:** none known

**MECHANICAL (GENERAL):** Adequate exhaust ventilation must exhaust away from the applicator.

**PROTECTIVE GLOVES:** natural rubber or neoprene gloves

**EYE PROTECTION:** splash goggles or face shield

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Use rubber apron, face shield and appropriate clothing to prevent contact with skin. Launder contaminated clothing before reuse. Discard contaminated leather shoes and canvas sneakers. Protective skin creams help cleaning with soap and water, however, gloves must still be worn. An eye wash station or an adequate supply of clean water must be available at the work area.

**WORK/HYGIENIC PRACTICES:** Enforce careful handling to prevent splashing. Wash thoroughly after handling.

**SECTION 10 - OTHER INFORMATION**

**HMS RATINGS:**

HEALTH	:3
FLAMMABILITY	:1
REACTIVITY	:0
PERSONAL PROTECTION	:G

**KEY TO ABBREVIATIONS:**

N.E. = none established

**NOTICE**

“The information contained herein is, to the best of our knowledge and belief, accurate. However, since data, safety standards, and government regulations are subject to change; and the conditions of handling and use (or misuse) are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use or misuse of this material. It is the responsibility of the user to satisfy himself that he has all current data relevant to his particular application, and to comply with all applicable Federal, State and local laws and regulations.”

**END OF MSDS**

## MATERIAL SAFETY DATA SHEET

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME (ON LABEL) : SeamTek® Standard Resin, **SR101**  
 COMMON NAME : epoxy resin DATE PRINTED: 7/2/02  
 DISTRIBUTOR:  
 SEAMLESS TECHNOLOGIES, INC. EMERGENCY TELEPHONE: CHEMTREC  
 PO Box 428 24 HOURS A DAY 1 (800) 424-9300  
 Chestertown, MD 21620 INFORMATION TELEPHONE: 1 (800) 666-6216  
 DATE PREPARED : 01-Aug-96 PREVIOUS MSDS REVISION DATE: 20-May-94

### SECTION 2 - COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Wt %	OSHA PEL	ACGIH TLV
diglycidyl ether bisphenol A epoxy resin	25085-99-8		N.E.	N.E.
aliphatic epoxide	68609-97-2		N.E.	N.E.
alkylated phenol	AN123581		N.E.	N.E.
2-methyl-2,4-pentanediol	107-41-5		25 ppm	25 ppm
alkyl phenol	84852153		N.E.	N.E.

T.S.C.A. Status - OK on all above components.

### SECTION 3 - PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE	: viscous liquid	SPECIFIC GRAVITY (H <sub>2</sub> O=1.0)	: 1.1
PHYSICAL STATE	: liquid	DENSITY (LB/GAL)	: N/A
VAPOR PRESSURE	: N/A mm Hg.	MELTING POINT (°C)	: N/A
ODOR	: mild	EVAPORATION RATE	: N/A
VAPOR DENSITY	: N/A	(Butyl Acetate = 1)	
WATER SOLUBILITY	: none	V.O.C.	: 0.57
lb/gal			

### SECTION 4 - STABILITY & REACTIVITY

STABILITY : Stable.  
 CONDITIONS TO AVOID : Excessive heating over long periods of time degrades the resin.  
 INCOMPATIBILITY : Uncontrolled reaction with amines.  
 HAZARDOUS DECOMPOSITION BYPRODUCTS: By fire: carbon dioxide, carbon monoxide, nitrogen oxide, aldehydes.  
 HAZARDOUS POLYMERIZATION : Will not occur.  
 CONDITIONS TO AVOID : Uncontrolled reaction with amines.

*(Continued on page 2)*

### SECTION 5 - FIRE & EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP METHOD)      :>200°F      LOWER EXPLOSIVE LIMIT      :N/A  
 UPPER EXPLOSIVE LIMIT      :N/A

EXTINGUISHING MEDIA      :Foam, CO<sub>2</sub>, dry chemical, water spray

SPECIAL FIRE FIGHTING PROCEDURES      :Wear full protective equipment including self contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS      :Combustion products may be toxic. Cool storage containers with water spray to prevent pressure buildup which could rupture containers.

**SECTION 6 - HEALTH HAZARD DATA**

ROUTES OF ENTRY:      INHALATION? yes      SKIN? yes      INGESTION? yes

SIGNS AND SYMPTOMS OF OVEREXPOSURE:      Irritation of skin.

HEALTH HAZARDS (ACUTE AND CHRONIC):ACUTE:Irritation of skin and dermatitis.

CHRONIC:Repeated overexposure will cause severe skin irritation, dermatitis and sensitization. Sensitized persons may experience rapid irritation of skin upon exposure.

CARCINOGENICITY:      NTP? No      IARC MONOGRAPHS? No      OSHA REGULATED? No

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY OVEREXPOSURE:

Allergy, skin disorders.

**SECTION 7 - FIRST AID PROCEDURES**

EYES:      Flush with water, holding lids open for 15 minutes or more. Call physician for advice if necessary.

SKIN:      Promptly wash with soap and water. Do not wash with solvents. Seek medical advice if irritation develops or persists.

INHALATION:      Move person to fresh air if effects occur. If needed, give oxygen or artificial respiration to improve breathing. Consult physician.

INGESTION:      Get medical attention immediately. Never give liquids to an unconscious or convulsing person.

**SECTION 8 - PRECAUTIONS FOR SAFE HANDLING AND USE**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:      Wear protective clothing to prevent exposure. Stop spill and dike to prevent spreading. Cover spill with absorbent materials and collect into containers. Clean contaminated area with detergent and water or a steam cleaner for best results.

WASTE DISPOSAL METHOD:      Dispose in accordance with all Federal, State and Local requirements.

HANDLING AND STORAGE PRECAUTIONS:      Keep containers tightly closed when not in use.

OTHER PRECAUTIONS:      None known.

*(Continued on page 3)*

**SECTION 9 - EXPOSURE CONTROL & PERSONAL PROTECTION**

**RESPIRATORY PROTECTION:** Provide adequate exhaust ventilation and/or NIOSH approved amine cartridge respirator.

**VENTILATION:**    **LOCAL EXHAUST:**if needed    **SPECIAL:** none known

**MECHANICAL (GENERAL):** Adequate exhaust ventilation must exhaust away from the applicator.

**PROTECTIVE GLOVES:** natural rubber or neoprene gloves

**EYE PROTECTION:** splash goggles or face shield

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Use rubber apron, face shield and appropriate clothing to prevent contact with skin. Launder contaminated clothing before reuse. Discard contaminated leather shoes and canvas sneakers. Protective skin creams help cleaning with soap and water, however, gloves must still be worn. An eye wash station or an adequate supply of clean water must be available at the work area.

**WORK/HYGIENIC PRACTICES:** Enforce careful handling to prevent splashing. Wash thoroughly after handling.

<b>SECTION 10 - OTHER INFORMATION</b>
---------------------------------------

<b>HMIS RATINGS:</b>	HEALTH	:2
	FLAMMABILITY	:1
	REACTIVITY	:0
	PERSONAL PROTECTION	:F

**KEY TO ABBREVIATIONS:**

N.E. = none established

<b>NOTICE</b>
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<p>“The information contained herein is, to the best of our knowledge and belief, accurate. However, since data, safety standards, and government regulations are subject to change; and the conditions of handling and use (or misuse) are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use or misuse of this material. It is the responsibility of the user to satisfy himself that he has all current data relevant to his particular application, and to comply with all applicable Federal, State and local laws and regulations.”</p>
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END OF MSDS

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## MATERIAL SAFETY DATA SHEET

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME (ON LABEL) : SeamTek® Chemical Resistant Hardener, **CRH405**

COMMON NAME: developmental epoxy hardener      DATE PRINTED: 9/1/02

**DISTRIBUTOR:**

**SEAMLESS TECHNOLOGIES, INC.**

PO Box 428

Chestertown, MD 21620

**EMERGENCY TELEPHONE:**

**24 HOURS A DAY**

**INFORMATION TELEPHONE:**

**CHEMTREC**

**1 (800) 424-9300**

**1 (800) 666-6216**

DATE PREPARED : 01-Aug-01

PREVIOUS MSDS REVISION DATE: first rev.

### SECTION 2 - COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Wt %	OSHA PEL	ACGIH TLV
modified cycloaliphatic polyamines	trade secret		N.E.	N.E.
benzyl alcohol	100-51-6		N.E.	N.E.

T.S.C.A. Status - OK on all above components.

### SECTION 3 - PHYSICAL & CHEMICAL PROPERTIES

<b>APPEARANCE</b>	: light amber	<b>SPECIFIC GRAVITY (H2O=1.0)</b>	: 1.01
<b>PHYSICAL STATE</b>	: liquid	<b>DENSITY (LB/GAL)</b>	: N/A
<b>VAPOR PRESSURE</b>	: N/A mm Hg.	<b>MELTING POINT (°C)</b>	: N/A
<b>ODOR</b>	: amine odor	<b>EVAPORATION RATE</b>	: N/A
<b>VAPOR DENSITY</b>	: N/A	<b>(Butyl Acetate = 1)</b>	
<b>WATER SOLUBILITY</b>	: N/A	<b>V.O.C.</b>	: N/A

### SECTION 4 - STABILITY & REACTIVITY

**STABILITY** : Stable.

**CONDITIONS TO AVOID** : Keep container closed when not in use.

**INCOMPATIBILITY** : Avoid contact with strong oxidizers or acids.

**HAZARDOUS DECOMPOSITION BY PRODUCTS:** By fire: carbon dioxide, carbon monoxide, nitrogen oxide, aldehydes.

**HAZARDOUS POLYMERIZATION** : Will not occur.

**CONDITIONS TO AVOID** : Uncontrolled reaction with epoxy resins. Avoid breathing fumes generated by hardener and epoxy mixture when not used within established pot life.

*(Continued on page 2)*

### SECTION 5 - FIRE & EXPLOSION HAZARD DATA

**FLASH POINT (CLOSED CUP METHOD)** :>200°F      **LOWER EXPLOSIVE LIMIT** :N/A  
**UPPER EXPLOSIVE LIMIT** :N/A

**EXTINGUISHING MEDIA** :Foam, CO<sub>2</sub>, dry chemical, water spray  
**SPECIAL FIRE FIGHTING PROCEDURES** :Wear full protective equipment including self contained breathing apparatus. Irritating and/or toxic gases may be generated by fire.  
**UNUSUAL FIRE AND EXPLOSION HAZARDS** :Combustion products may be toxic. Cool storage containers with water spray to prevent pressure buildup which could rupture containers.

**SECTION 6 - HEALTH HAZARD DATA**

**ROUTES OF ENTRY:**      **INHALATION?** yes      **SKIN?** yes      **INGESTION?** yes  
**SIGNS AND SYMPTOMS OF OVEREXPOSURE:**      Irritation of skin.  
**HEALTH HAZARDS (ACUTE AND CHRONIC):**ACUTE:Irritation of skin and dermatitis.  
CHRONIC:Repeated overexposure will cause severe skin irritation, dermatitis and sensitization. Sensitized persons may experience rapid irritation of skin upon exposure. **NOTE:Persons with lung disorders or who are sensitized should not use this product.**  
**CARCINOGENICITY:**      **NTP?** No      **IARC MONOGRAPHS?** No      **OSHA REGULATED?** No  
**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY OVEREXPOSURE:**  
Allergy, skin disorders.

**SECTION 7 - FIRST AID PROCEDURES**

**EYES:**      Flush with water, holding lids open for 15 minutes or more. Call physician for advice if necessary.  
**SKIN:**      Promptly wash with soap and water. Do not wash with solvents. Seek medical advice if irritation develops or persists.  
**INHALATION:**      Move person to fresh air if effects occur. If needed, give oxygen or artificial respiration to improve breathing. Consult physician.  
**INGESTION:**      Get medical attention immediately. Never give liquids to an unconscious or convulsing person.

**SECTION 8 - PRECAUTIONS FOR SAFE HANDLING AND USE**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Wear protective clothing to prevent exposure. Stop spill and dike to prevent spreading. Cover spill with absorbent materials and collect into containers. Clean contaminated area with detergent and water or a steam cleaner for best results.  
**WASTE DISPOSAL METHOD:**      Dispose in accordance with all Federal, State and Local requirements.  
**HANDLING AND STORAGE PRECAUTIONS:**      Keep containers tightly closed when not in use.  
**OTHER PRECAUTIONS:**      None known.

*(Continued on page 3)*

**SECTION 9 - EXPOSURE CONTROL & PERSONAL PROTECTION**

**RESPIRATORY PROTECTION:** Provide adequate exhaust ventilation and/or NIOSH approved amine cartridge respirator.

**VENTILATION:** LOCAL EXHAUST:if needed SPECIAL: none known

**MECHANICAL (GENERAL):** Adequate exhaust ventilation must exhaust away from the applicator.

**PROTECTIVE GLOVES:** natural rubber or neoprene gloves

**EYE PROTECTION:** splash goggles or face shield

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Use rubber apron, face shield and appropriate clothing to prevent contact with skin. Launder contaminated clothing before reuse. Discard contaminated leather shoes and canvas sneakers. Protective skin creams help cleaning with soap and water, however, gloves must still be worn. An eye wash station or an adequate supply of clean water must be available at the work area.

**WORK/HYGIENIC PRACTICES:** Enforce careful handling to prevent splashing. Wash thoroughly after handling.

<b>SECTION 10 - OTHER INFORMATION</b>
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<b>HMIS RATINGS:</b>	HEALTH	:3
	FLAMMABILITY	:1
	REACTIVITY	:0
	PERSONAL PROTECTION	:G

**KEY TO ABBREVIATIONS:**

N.E. = none established

<b>NOTICE</b>
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<p>“The information contained herein is, to the best of our knowledge and belief, accurate. However, since data, safety standards, and government regulations are subject to change; and the conditions of handling and use (or misuse) are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use or misuse of this material. It is the responsibility of the user to satisfy himself that he has all current data relevant to his particular application, and to comply with all applicable Federal, State and local laws and regulations.”</p>
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**END OF MSDS**

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# MATERIAL SAFETY DATA SHEET

## SECTION 1 IDENTIFICATION

CLIFFORD W. ESTES CO., INC  
40 VREELAND AVE STE 104  
TOTOWA, NJ 07512

DATE: JANUARY 2005  
PHONE: 973.890.1515

PRODUCT BRAND NAME: PERMACOLOR SURFACE AGGREGATES, REGULAR AND HP

PRODUCT IDENTIFICATION : BROADCAST(MED.&FINE), TROWEL-RITE (REGULAR AND SUPER), VARIOUS COLORS

CHEMICAL NAME: SILICON DIOXIDE (SIO2)

DEPARTMENT OF TRANSPORTATION: SAND, GRAVEL, NOIBN

CHEMICAL FAMILY: SILICA SAND

COLOR: TYPICAL COLORS

## SECTION II HAZARDOUS INGREDIENTS

CHEMICAL NAME	% WT	CAS#	OSHA (PEL)	ACGIH (TLV)
SILICA SAND	94	14808-60-7		.1MG/M3
RESIN	4.95	NON-HAZARDOUS PROPRIETARY	N/A	N/A
TIO2	0.99	13463-67-7		
COLORANTS ORGANIC AND INORGANIC	0.06	NON-HAZARDOUS		

\* Special Statement regarding Hazardous ingredients:

Although these products are composed primarily of Silica Sand (SIO2), and such sand is potentially a source for respirable dust, the sand particles are thoroughly encapsulated in a coating which captures all dust and should, under normal circumstances, prevent any normal release of silica dust to the workplace. See page two, Section VIII for further information on handling.

## SECTION III PHYSICAL DATA

BOILING POINT: NONE  
VAPOR PRESSURE: NONE  
VAPOR DENSITY: NONE  
% VOLATILES :<1%  
APPEARANCE: SAND OR AGGREGATE, TYPICAL COLORS

SPECIFIC GRAVITY: 2.65  
PH: INERT  
EVAPORATION RATE: N/A  
SOLUBILITY IN WATER: INSOLUBLE

## **HIMS RATINGS**

HEALTH	0*
FLAMABILITY	0
REACTIVITY	0

\*REFER TO SPECIAL STATEMENT ABOVE

**SECTION IV FIRE AND EXPLOSION HAZARD**

FLASH POINT: NON-FLAMMABLE

FLAMMABLE LIMITS: LEL- N/A , UEL - N/A

UNUSUAL FIRE AND EXPLOSION HAZARDS: Products of combustion may include irritating gases.

**SECTION V HEALTH AND SAFETY**

THRESHOLD LIMIT VALUE: (SEE PAGE ONE)

EFFECTS OF OVER EXPOSURE: Prolonged inhalation of mineral dust may cause delayed lung injury.

EMERGENCY AND FIRST AID PROCEDURES: - EYES, Remove in the same manner as one would remove any foreign particle.

**SECTION VI REACTIVITY DATA**

STABILITY: Stable

INCOMPATIBILITY: Dissolves in hydrofluoric acid

CONDITIONS TO AVOID: None Known

**SECTION VII SPILL/LEAK PROCEDURES**

1. Clean up using dustless procedures. Use water and/or vacuum.
2. WASTE DISPOSAL: Dispose using locally approved waste disposal sites.

**SECTION VIII SPECIAL PROTECTION**

Use of this product under normal and recommended conditions and specifications will pose no known hazards. However, if surfaces using this product are subjected to sanding or grinding as might occur for maintenance purposes, and such treatment produces respirable dust, then proper ventilation and breathing apparatus should be used. Under such conditions, NIOSH-BOM approved respirators should be worn.

GLOVES: Optional

EYE PROTECTION: Full eye zone goggles should be worn.

**SECTION IX SPECIAL PRECAUTIONS**

1. USE DUSTLESS PROCEDURES DURING HANDLING, STORAGE, AND CLEAN-UP
2. PRACTICE GOOD HOUSEKEEPING. MAINTAIN VENTILATION. POST WARNING TO EMPLOYEES WHERE PRODUCT IS USED, STORED, AND HANDLED.



Trade Name: **SPHERIGLASS® GLASS SPHERES E-GLASS**  
Date Prepared: 02/26/05 Page: 1 of 4

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

*Product name:* SPHERIGLASS® Glass Spheres E-Glass  
*Product description:* Spherical glass powder  
*Manufacturer:* Potters Industries, Inc.  
P. O. Box 840  
Valley Forge, PA 19482 USA  
Phone number: 610-651-4200  
*In case of emergency call:* 1 610-651-4200  
*For transportation emergencies*  
*Call CHEMTREC:* 1 800-424-9300

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

<i>Chemical and Common Name</i>	<i>CAS Registry Number</i>	<i>Wt. %</i>	<i>OSHA PEL</i>	<i>ACGIH TLV</i>
Glass, oxide; Glass	65997-17-3	~100%	15mg/m <sup>3</sup> total dust, 5mg/m <sup>3</sup> respirable	10 mg/m <sup>3</sup> inhalable, 3 mg/m <sup>3</sup> respirable

### 3. HAZARDS IDENTIFICATION

*Emergency Overview:* Noncombustible white powder. Practically non-irritating to the eyes. Slightly irritating to the skin. Spilled material is extremely slippery.  
*Eye contact:* Practically non-irritating to eyes.  
*Skin contact:* Slightly irritating to skin.  
*Inhalation:* May cause irritation.  
*Ingestion:* No known hazard.  
*Chronic hazards:* No known chronic hazards. Not listed by NTP, IARC or OSHA as a carcinogen.  
*Physical hazards:* Spilled material is extremely slippery.

### 4. FIRST AID MEASURES

*Eye:* In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.  
*Skin:* In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if irritation develops and persists. Wash clothing before reuse. Thoroughly clean shoes before reuse.  
*Inhalation:* None required.  
*Ingestion:* None required.

### 5. FIRE FIGHTING MEASURES

<i>Flammable limits:</i>	This material is noncombustible.
<i>Extinguishing Media:</i>	This material is compatible with all extinguishing media
<i>Hazards to fire-fighters:</i>	See Section 3 for information on hazards when this material is present in the area of a fire.
<i>Fire-fighting equipment:</i>	The following protective equipment for fire fighters is recommended when this material is present in the area of a fire: rubber boots with slip-resistant soles.

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### 6. ACCIDENTAL RELEASE MEASURES

<i>Personal protection:</i>	Wear eye goggles. Wear rubber boots with slip-resistant soles, and NIOSH-approved dust respirator where dust occurs. See section 8.
<i>Environmental Hazards:</i>	Sinks in water. No known hazard to aquatic life.
<i>Small spill cleanup:</i>	Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective Equipment (PPE). See section 8.
<i>Large spill cleanup:</i>	Keep unnecessary people away; isolate hazard area and deny entry. Do not walk through spilled material. Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective Equipment (PPE). See section 8.
<i>CERCLA RQ:</i>	There is no CERCLA Reportable Quantity for this material.

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### 7. HANDLING AND STORAGE

<i>Handling:</i>	Avoid contact with eyes, skin and clothing. Avoid breathing dust. Keep container closed. Promptly clean up spills.
<i>Storage:</i>	Keep containers closed. Store in clean metal, fiber or plastic containers.

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<i>Engineering controls:</i>	Use with adequate ventilation. Keep containers closed. Safety shower and eyewash fountain should be within direct access.
<i>Respiratory protection:</i>	Use a NIOSH-approved dust respirator where dust occurs. Observe OSHA regulations for respirator use (29 C.F.R. §1910.134)
<i>Skin protection:</i>	Wear body-covering protective clothing.
<i>Eye protection:</i>	Wear safety glasses.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

<i>Appearance:</i>	Glass powder
<i>Color:</i>	White.
<i>Melting point:</i>	Approximately 730° C.
<i>Odor:</i>	Odorless.
<i>pH:</i>	Not applicable.

*Specific gravity:* Approximately 2.5 g/cm<sup>3</sup>  
*Solubility in water:* Insoluble.

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#### **10. STABILITY AND REACTIVITY**

*Stability:* This material is stable under all conditions of use and storage.  
*Conditions to avoid:* None.  
*Materials to avoid:* Dissolves in hydrofluoric acid.  
*Hazardous decomposition products:* None known.

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#### **11. TOXICOLOGICAL INFORMATION**

*Acute Data:* When tested for primary irritation potential, a similar material was practically non-irritating to the eyes and slightly irritating to the skin. The acute oral toxicity of this product has not been tested. A similar material was nontoxic to rats at 5,000 mg/kg. All animals survived, gained weight and appeared active and healthy. There were no signs of gross toxicity, adverse pharmacologic effects or abnormal behavior.  
*Subchronic Data:* There are no known reports of subchronic toxicity of nonfibrous glass.  
*Special Studies:* There are no known reports of carcinogenicity of nonfibrous glass. Nonfibrous glass is not listed by IARC, NTP or OSHA as a carcinogen.

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#### **12. ECOLOGICAL INFORMATION**

*Eco toxicity:* There are no known reports of ecotoxicity of nonfibrous glass.  
*Environmental Fate:* This material is persistent but inert in aquatic systems. It will not bioconcentrate up the food chain.  
*Physical/Chemical:* Sinks in water. Insoluble in water.

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#### **13. DISPOSAL CONSIDERATIONS**

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

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Trade Name: **SPHERIGLASS® GLASS SPHERES E-GLASS**  
Date Prepared: 02/26/05 Page 4 of 4

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**14. TRANSPORT INFORMATION**

*DOT UN Status:* This material is not regulated hazardous material for transportation.

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**15. REGULATORY INFORMATION**

*CERCLA:* No CERCLA Reportable Quantity has been established for this material.  
*SARA TITLE III:* Not an Extremely Hazardous Substance under §302 Not a Toxic Chemical under §313.

*TSCA:* All ingredients of this material are listed on the TSCA inventory.  
*FDA:* Glass is regarded by FDA as Generally Recognized As Safe (GRAS) for use in contact with food.

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**16. OTHER INFORMATION**

*Prepared by:* John G. Blumberg  
*Supersedes revision of:* 01/13/03

THE INFORMATION ON THIS SAFETY DATA SHEET IS BELIEVED TO BE ACCURATE AND IT IS THE BEST INFORMATION AVAILABLE TO POTTERS INDUSTRIES, INC. THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONS FOR HANDLING A CHEMICAL BY A PERSON TRAINED IN CHEMICAL HANDLING. POTTERS INDUSTRIES, INC. MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED WITH RESPECT TO SUCH INFORMATION OR THE PRODUCT TO WHICH IT RELATES, AND WE ASSUME NO LIABILITY RESULTING FROM THE USE OR HANDLING OF THE PRODUCT TO WHICH THIS SAFETY DATA SHEET RELATES. USERS AND HANDLERS OF THIS PRODUCT SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION PROVIDED HEREIN FOR THEIR OWN PURPOSES.

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