

# MATERIAL SAFETY DATA SHEET

## 1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology  
Standard Reference Materials Program  
100 Bureau Drive, Stop 2300  
Gaithersburg, Maryland 20899-2300

SRM Number: 773  
MSDS Number: 773  
SRM Name: Soda-Lime-Silica Glass for  
Gradient-Furnace Liquidus Temperature

Date of Issue: 24 February 2012

Telephone: 301-975-2200  
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1-800-424-9300 (North America)  
+1-703-527-3887 (International)

**Description:** This standard reference material is a soda-lime-silica glass that is certified for its liquidus temperature. A unit of SRM 773 contains approximately 65 g of glass pieces ( $2.5 \text{ cm}^2 \times 0.6 \text{ cm}$ ).

**Substance:** Glass

**Other Designations:** Silica, vitreous, amorphous silica, silica glass.

## 2. HAZARD IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 1 Fire = 0 Reactivity = 0

**Major Health Hazards:** Irritation.

**Physical Hazards:** There are no physical hazards identified for this material.

### Potential Health Effects

**Inhalation:** May cause coughing and shortness of breath. Chronic inhalation of glass particles may affect breathing capacity.

**Skin Contact:** May cause mechanical irritation.

**Eye Contact:** Mechanical irritation and eye damage.

**Ingestion:** No data available.

### Listed as a Carcinogen/Potential Carcinogen

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens	_____	<u>  X  </u>
In the International Agency for Research on Cancer (IARC) Monographs	_____	<u>  X  </u>
By the Occupational Safety and Health Administration (OSHA)	_____	<u>  X  </u>

## 3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component	CAS Number	EC Number (EINECS)	Nominal Concentration (%)
Silica, amorphous fused	60676-86-0	262-373-8	100

**EC Classification:** Not classified.

**EC Risk (R No.):** No assigned.

**EC Safety (S No.):** No assigned.

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#### 4. FIRST AID MEASURES

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**Inhalation:** If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Seek immediate medical attention.

**Skin Contact:** Rinse affected area with soap and water for at least 15 minutes. Seek medical assistance if necessary.

**Eye Contact:** Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Seek immediate medical attention.

**Ingestion:** If a large amount is swallowed, seek medical attention.

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#### 5. FIRE FIGHTING MEASURES

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**Fire and Explosion Hazards:** Negligible fire hazard.

**Extinguishing Media:** Use extinguishing agents appropriate to surrounding fire.

**Fire Fighting:** Avoid inhalation of combustion by-products.

**Flash Point (°C):** Not applicable.

**Method Used:** Not applicable.

**Autoignition Temperature (°C):** Not applicable.

**Flammability Limits in Air**

UPPER (Volume %): Not applicable

LOWER (Volume %): Not applicable.

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#### 6. ACCIDENTAL RELEASE MEASURES

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**Occupational Release:** Collect in appropriate container for proper disposal.

**Disposal:** Refer to Section 13, "Disposal Considerations".

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#### 7. HANDLING AND STORAGE

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**Storage:** Store and handling in accordance with all current regulations and standards.

**Safe Handling Precautions:** Use methods to minimize dust. See Section 8, "Exposure Controls and Personal Protection".

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#### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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**Exposure Limits**

OSHA (TWA): 20 mppcf; (80)/(%) SiO<sub>2</sub> mg/m<sup>3</sup>

**Ventilation:** Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**Respirator:** If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29 CFR 1910.134 must be followed. Refer to NIOSH 24 CFR 84 for applicable certified respirators.

**Eye Protection:** Wear safety goggles. An eyewash station and drench shower should be readily available near the handling and use areas.

**Personal Protection:** In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

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#### 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance and Odor:** Clear, colorless, solid, odorless.

**Molecular Formula:** SiO<sub>2</sub>

**Density:** Not available.

**Melting Point:** 1750 °C (3182 °F)

**Water Solubility:** Insoluble.

**Molar Mass:** 60.09 g/mol

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## 10. STABILITY AND REACTIVITY

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**Stability:**          X   Stable                           Unstable

Stable at normal temperature and pressure.

**Conditions to Avoid:** Avoid generating dust.

**Incompatible Materials:** Bases, halogens, oxidizing materials.

**Fire/Explosion Information:** See Section 5, "Fire Fighting Measures".

**Hazardous Decomposition:** Miscellaneous decomposition products.

**Hazardous Polymerization:**               Will Occur                      X   Will Not Occur

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## 11. TOXICOLOGICAL INFORMATION

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**Route of Entry:**          X   Inhalation                           Skin                      X   Ingestion

### Toxicity Data

Toxicity data not available.

**Health Effects:** See Section 2, "Hazard Identification".

**Target Organs:** None listed.

**Medical Conditions Aggravated by Exposure:** None listed.

**Mutagenic, Reproductive, and Tumorigenic Toxic Effects:** The components of this material have been reviewed and the Registry of Toxic Effects of Chemical Substances (RTECS) publishes the following endpoints.

Mutagenic:        Human: 240 mg/L (24 h)

Tumorigenic:     Rat Implant TDLo: 400 mg/kg

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## 12. ECOLOGICAL INFORMATION

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### Ecotoxicity Data

No ecotoxicity data listed.

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## 13. DISPOSAL CONSIDERATIONS

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**Waste Disposal:** Dispose of waste in accordance with all applicable federal, state, and local regulations.

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## 14. TRANSPORTATION INFORMATION

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**U.S. DOT and IATA:** Not Regulated by DOT and IATA.

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## 15. REGULATORY INFORMATION

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### U.S. Regulations

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Not regulated.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE HEALTH:        No

CHRONIC HEALTH:     Yes

FIRE:                    No

REACTIVE:            No

PRESSURE:            No

### State Regulations:

California Proposition 65: Not regulated.

### Canadian Regulations:

WHMIS Information: Not provided for this material.

**European Regulations****EC Classification**

Not classified.

**EC Risk Phrase(s)**

Not assigned.

**EC Safety Phrase(s)**

Not assigned

**National Inventory Status**

**U.S. Inventory (TSCA):** Listed.

**TSCA 12(b), Export Notification:** Not Listed.

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**16. OTHER INFORMATION**

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**Sources:** ChemADVISOR, Inc., MSDS, *Silica, Amorphous Fused*, 20 December 2011.

**Disclaimer:** Physical and chemical data contained in this MSDS are provided only for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.