

SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

Product Identifier**SRM Number:** 2206**SRM Name:** Controlled Pore Glass - BET Specific Surface Area (Nominal Pore Diameter 300 nm)**Other Means of Identification:** Not applicable.**Recommended Use of This Material and Restrictions of Use**

This Standard Reference Material (SRM) is intended for the calibration and performance testing of instruments used for the determination of the Brunauer-Emmett-Teller (BET) specific surface area (SSA) by the static volumetric gas sorption technique. A unit of SRM 2206 consists of one bottle containing approximately 5.1 g of high-purity granulated controlled-pore glass with a nominal pore diameter of 300 nm.

Company Information

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2. HAZARDS IDENTIFICATION

Classification**Physical Hazard:** Not classified.**Health Hazard:** Not classified.**Label Elements****Symbol**

No Symbol/No Pictogram

Signal Word

No Signal Word

Hazard Statement(s): Not applicable.**Precautionary Statement(s):** Not applicable.**Hazards Not Otherwise Classified:** Not applicable.**Ingredients(s) with Unknown Acute Toxicity:** Not applicable.

3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Substance: High-purity granulated controlled-pore glass**Other Designations:** Glass oxide, chemicals; oxide glass chemicals; porous glass; glass

Components are listed in compliance with OSHA's 29 CFR 1910.1200; for the actual values see the NIST Certificate of Analysis.

Component(s)	CAS Number	EC Number (EINECS)	Nominal Mass Concentration (%)
Glass	65997-17-3	266-046-0	100

4. FIRST AID MEASURES

Description of First Aid Measures:

Inhalation: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

Skin Contact: Wash skin with soap and water for at least 15 minutes. If necessary, seek medical attention.

Eye Contact: Flush eyes with water for at least 15 minutes. If necessary, seek medical attention.

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

Most Important Symptoms/Effects, Acute and Delayed: Generated dust may cause mechanical irritation.

Indication of any immediate medical attention and special treatment needed, if necessary: If any of the above symptoms are present, seek medical attention if needed.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Negligible fire hazard. Avoid generating dust. See Section 9, "Physical and Chemical Properties" for flammability properties.

Extinguishing Media

Suitable: Use extinguishing media appropriate to surrounding fire.

Unsuitable: None listed.

Specific Hazards Arising from the Chemical: Not applicable.

Special Protective Equipment and Precautions for Fire-Fighters: Move container from fire area if it can be done without personal risk. Avoid inhalation of material or combustion by-products. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

NFPA Ratings (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health = 1

Fire = 0

Reactivity = 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Any accumulated material on surfaces should be removed and properly disposed of. Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

Methods and Materials for Containment and Clean up: Collect spilled material in appropriate container for disposal. Avoid generating dust.

7. HANDLING AND STORAGE

Safe Handling Precautions: Use suitable personal protection equipment (PPE). See Section 8, "Exposure Controls and Personal Protection".

Storage and Incompatible Materials: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances (see Section 10, "Stability and Reactivity").

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: No occupational exposure limits have been established for glass powder. This material is a particulate matter and adequate inhalation/respiratory protection should be used to minimize exposure. The exposure limits for Particulates Not Otherwise Regulated are applicable.

OSHA (PEL): 15 mg/m³ (TWA, total particulates)
5 mg/m³ (TWA, respirable particulates)

NIOSH (REL): 10 mg/m³ (TWA, total particulates)
5 mg/m³ (TWA, respirable particulates)

ACGIH (TLV): No occupational exposure limits established.

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

Personal Protection Measures: In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate PPE to minimize exposure to this material.

Respiratory Protection: If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

Eye/Face Protection: Eye and face protection is required when dust is generated. Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin and Body Protection: Standard PPE is recommended to avoid irritation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Descriptive Properties

Appearance
(physical state, color, etc.)

Molecular Formula

Molar Mass (g/mol)

Odor

Odor threshold

pH

Evaporation rate

Melting point/freezing point

Relative Density as Specific Gravity (water = 1)

Vapor Pressure

Vapor Density (air = 1)

Viscosity

Solubilities

Partition coefficient (n-octanol/water)

Particle Size

Glass Powder

white granular powder

not applicable

not applicable

odorless

not available

5 to 6 (aqueous suspension)

not available

>700 °C (1292 °F)

2.46 to 2.49

not available

not available

not available

insoluble in water

not available

>130 µm

Thermal Stability Properties

Autoignition Temperature

Thermal Decomposition

Initial boiling point and boiling range

Explosive Limits, LEL (Volume %)

Explosive Limits, UEL (Volume %)

Flash Point

Flammability (solid, gas)

not available

not available

not available

not available

not available

not flammable

not applicable

10. STABILITY AND REACTIVITY

Reactivity: Stable at normal temperatures and pressure.

Stability: X Stable Unstable

Possible Hazardous Reactions: Not applicable.

Conditions to Avoid: Avoid generating dust. Avoid moisture.

Incompatible Materials: Alkalines, hydrogen fluorides, acids

Hazardous Decomposition: Miscellaneous decomposition products.

Hazardous Polymerization: Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Exposure: X Inhalation X Skin Ingestion

Symptoms Related to the Physical, Chemical and Toxicological Characteristics: Generated dust may cause mechanical irritation.

Potential Health Effects (Acute, Chronic, and Delayed)

Inhalation: Acute exposure to respirable glass dust may cause coughing and shortness of breath. Chronic exposure may affect breathing capacity.

Skin Contact: Skin exposure may result in mechanical irritation.

Eye Contact: Direct contact may cause mechanical irritation.

Ingestion: Ingestion of this material is unlikely under normal conditions of use.

Numerical Measures of Toxicity

Acute Toxicity: Not classified; no data available.

Skin Corrosion/Irritation: Not classified; no data available.

Serious Eye Damage/Eye Irritation: Not classified; no data available.

Respiratory Sensitization: Not classified; no data available.

Skin Sensitization: Not classified; no data available.

Germ Cell Mutagenicity: No data available.

Carcinogenicity: Not classified.

Listed as a Carcinogen/Potential Carcinogen Yes X No

Glass powder is not listed by NTP, IARC or OSHA as a carcinogen/potential carcinogen.

Reproductive Toxicity: Not classified; no data available.

Specific Target Organ Toxicity, Single Exposure: Not classified; no data available.

Specific Target Organ Toxicity, Repeated Exposure: Not classified; no data available.

Aspiration Hazard: Not applicable.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: No data available.

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other Adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Not regulated by DOT or IATA.

15. REGULATORY INFORMATION

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: No
 FIRE: No
 REACTIVE: No
 PRESSURE: No

State Regulations

California Proposition 65: Not listed.

U.S. TSCA Inventory: Listed.

TSCA 12(b), Export Notification: Not listed.

Canadian Regulations: WHMIS Information is not provided for this material.

16. OTHER INFORMATION

Issue Date: 22 July 2014

Sources: ChemAdvisor, Inc., *SDS Glass*, 21 March 2014.

VitraBio GmbH, Vendor MSDS *Porous Glass, Controlled Pore Glass*, 28 February 2007.

CDC; NIOSH; *NIOSH Pocket Guide to Chemical Hazards*; Department of Health and Human Services (DHHS), Centers for Disease Control and Prevention (CDC), National Institute for Safety and Health; *Particulates Not Otherwise Regulated*, 4 April 2011; available at <http://www.cdc.gov/niosh/npg/npgd0480.html> (accessed July 2014).

Key of Acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists	NRC	Nuclear Regulatory Commission
ALI	Annual Limit on Intake	NTP	National Toxicology Program
CAS	Chemical Abstracts Service	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	REL	Recommended Exposure Limit
EC50	Effective Concentration, 50 %	RM	Reference Material
EINECS	European Inventory of Existing Commercial Chemical Substances	RQ	Reportable Quantity
EPCRA	Emergency Planning and Community Right-to-Know Act	RTECS	Registry of Toxic Effects of Chemical Substances
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
IATA	International Air Transportation Agency	SCBA	Self-Contained Breathing Apparatus
IDLH	Immediately Dangerous to Life and Health	SRM	Standard Reference Material
LC50	Lethal Concentration, 50 %	STEL	Short Term Exposure Limit
LD50	Lethal Dose, 50 %	TLV	Threshold Limit Value
LEL	Lower Explosive Limit	TPQ	Threshold Planning Quantity
MSDS	Material Safety Data Sheet	TSCA	Toxic Substances Control Act
NFPA	National Fire Protection Association	TWA	Time Weighted Average
NIOSH	National Institute for Occupational Safety and Health	UEL	Upper Explosive Limit
NIST	National Institute of Standards and Technology	WHMIS	Workplace Hazardous Materials Information System

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

Users of this SRM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730; e-mail srmmsds@nist.gov; or via the Internet at <http://www.nist.gov/srm>.