

Micromeritics Material Safety Data Sheet

Title : Ref. Material Glass PS
Date of Preparation : 09/02/2020

MSDS No. : 004/16814/00MSDS
Revision : E

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Crystalline Silica (Quartz)

Chemical Formula: Silicon Dioxide SiO₂

CAS Number: 14808-60-7

Other Designations: Silica, Flint, Sand, Crystalline Free Silica, Quartz, Ground Silica, ASTM Testing Sands, F-Series Foundry Sands, Flintshot®, Flintshot® Blasting Sands, Gravel Pack, Hydraulic Fracing Sands, Min-U-Sil®, Mystic White®, Penn Sand®, O-Mix™, O-Rok®, Sil-Co-Sil®, Supersil®

General Use: Not Applicable

Supplier: Micromeritics Instrument Corp.
1 Micromeritics Dr.
Norcross, GA 30093-1877 USA

Contact: Human Resources
Phone: (770) 662-3620
Fax: (770) 662-3696

Manufacturer:

U.S. Silica, P. O. Box 187, Berkeley Springs, WV 25411; Phone: (304) 258-2500

Section 2 – Hazards Identification

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Specific target organ toxicity - repeated exposure, Inhalation (Category 2)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram



Signal word: Warning

Hazard statement(s):

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled.

Potential Health Effects

Primary Entry Routes: Inhalation

Target Organs: Not Applicable

Acute Effects

Inhalation: Undue breathlessness, wheezing, coughing, and sputum production

Eye: Not Applicable

Skin: Not Applicable

Ingestion: Not Applicable

Carcinogenicity: The National Toxicology Program (NTP) published its Sixth Annual Report on Carcinogens which concludes that “silica, crystalline (respirable)” may reasonably be anticipated to be a carcinogen. The NTP conclusion is based on sufficient evidence for the carcinogenicity of respirable crystalline silica in experimental animals and limited evidence in humans.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans (volume 42, 1987) concludes that there is sufficient evidence for the carcinogenicity of crystalline silica to experimental animals, and that there is limited evidence of the carcinogenicity of crystalline silica to humans, IARC Class 2A.

Medical Conditions Aggravated by Long-Term Exposure: Pulmonary function may be reduced by inhalation of respirable crystalline silica. Also lung scarring produced by such inhalation may lead to a progressive massive fibrosis of the lung which may aggravate other pulmonary conditions and diseases and which increases susceptibility to pulmonary tuberculosis. Progressive massive fibrosis may be accompanied by right heart enlargement, heart failure, and pulmonary failure. Smoking aggravates the effects of exposure.

Chronic Effects: Prolonged exposure to respirable crystalline quartz may cause delayed (chronic) lung injury (silicosis). Acute or rapidly developing silicosis may occur in a short period of time in heavy exposure in certain occupations such as sandblasters. Silicosis is a form of disabling pulmonary fibrosis which can be progressive and may lead to death.

Section 3 – Composition/Information on Ingredients

Ingredient Name	CAS Number		% wt or % vol				
Silica, Crystalline Quartz	14808-60-7		100.0				
Trace Impurities:							
	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
Ingredient	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Silica, Crystalline Quartz	0.1 mg/m ³ (respirable)	none estab.	0.1 mg/m ³ (respirable dust)	none estab.	0.05 mg/m ³ (respirable free silica)	none estab.	none estab.

OSHA PEL: Exposure to airborne crystalline silica shall not exceed at 8-hour time-weighted average limit as stated in 29 CFR & 1910.1000 Table Z-1-A, Air Contaminants, specifically.

ACGIH TLV: See Threshold Limit Value and Biological Exposure Indices for 1991-1992, American Conference of Governmental Industrial Hygienists.

Other Limits Recommended: National Institute for Occupational Safety and Health (NIOSH). Recommended standard maximum permissible concentration = 0.05 mg/m³ (respirable free silica) as determined by a full-shift sample up to 10-hour working day, 40-hour work week. See NIOSH Criteria for a Recommended Standard Occupational Exposure to Crystalline Silica.

Section 4 - First Aid Measures

Inhalation: For gross inhalation, remove person immediately to fresh air; give artificial respiration as needed; seek medical attention as needed.

Eye Contact: For sand in eyes, wash immediately with water. If irritation persists, seek medical attention

Skin Contact: Not Applicable

Ingestion: Not Applicable

Note to Physicians: Not Applicable

Special Precautions/Procedures: Not Applicable

Section 5 - Fire-Fighting Measures

Flash Point: Non-flammable

Flash Point Method: Not Applicable

Burning Rate: Not Applicable

Autoignition Temperature: Not Applicable

LEL: None

UEL: None

Flammability Classification: None

Extinguishing Media: None required; sand may be used as extinguishing media

Unusual Fire or Explosion Hazards: Crystalline silica is neither a fire nor an explosion hazard. Crystalline silica may be used to put out Class A and B fires.

Hazardous Combustion Products: Not Applicable

Fire-Fighting Instructions: Not Applicable

Fire-Fighting Equipment: Not Applicable

Section 6 - Accidental Release Measures

Spill /Leak Procedures: Use dustless methods (vacuum), and place into closeable container for disposal, or flush with water. Do not dry sweep. Wear protective equipment specified in Section 8. Avoid breathing dust.

Small Spills: Not Applicable

Large Spills

Containment: Not Applicable

Cleanup: Not Applicable

Regulatory Requirements: Not Applicable

Section 7 - Handling and Storage

Handling Precautions: Avoid breakage of bagged material or spills of bulk material. See control measures in Section 8. Use dustless systems for handling, storage, and clean up so that airborne dust does not exceed the PEL. Use adequate ventilation and dust collection. Practice good housekeeping. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Maintain, clean, and fit test respirators in accordance with OSHA regulations. Maintain and test ventilation and dust collection equipment. Wash or vacuum clothing which has become dusty. See also control measures in Section 8.

We recommend that smoking be prohibited in all areas where respirators must be use. WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS-USERS IN CASE OF RESALE) BY POSTING AND OTHER MEANS OF THE HAZARD AND OSHA PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT THE OSHA PRECAUTIONS.

See also American Society for Testing Materials (ASTM) standard practice E 1132-86, "Standard Practice for Health Requirements Relating to Occupational Exposure to Quartz Dust."

Storage Requirements: Not Applicable

Regulatory Requirements: See OSHA Hazard Communication Rule 29 CFR Sections 1910, 1200, 1915.99, 1917.28, 1918.90, 1926.59, and 1928.21, and state and local worker or community "right to know" laws and regulations.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Not Applicable

Ventilation: Local exhaust; use sufficient local exhaust to reduce the level of respirable dust to the PEL. See the latest edition of ACGIH "Industrial Ventilation, A Manual of Recommended Practice." See also Handling Precautions in Section 7.

Administrative Controls: Not Applicable

Respiratory Protection: The following chart specifies the types of respirators which may provide respiratory protection for crystalline silica.

CONDITION	MINIMUM RESPIRATORY PROTECTION
Particulate Concentration	Only NIOSH-approved or MSHA-approved equipment should be used. (See 29 CFR & 1910.134).
Up to 5 x PEL	Any dust respirator.
Up to 10 x PEL	Any dust respirator, except single-use or quarter-mask respirator. Any fume respirator or high efficiency particulate filter respirator. Any supplied-air respirator. Any self-contained breathing apparatus.
Up to 50 x PEL	A high efficiency particulate filter respirator with a full face-piece. Any supplied-air respirator with a full face-piece, helmet, or hood. Any self-contained breathing apparatus with a full face-piece.
Up to 500 x PEL	A powered air-purifying respirator with a high efficiency particulate filter. A Type C supplied-air respirator operated in pressure-demand or other positive pressure or continuous-flow mode.
Greater than 500 x PEL or entry and escape from unknown concentrations	Self-contained breathing apparatus with a full face-piece operated in pressure-demand or other positive pressure mode. A combination respirator which includes a Type C supplied-air respirator with a full face-piece operated in pressure-demand or other positive pressure continuous-flow mode and an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode.
Abrasive Blasting	Any type CE, supplied-air respirator with a full face-piece, hood, or helmet, operated in a positive-pressure mode. (See 29 CFR & 1910.94 (a)).

See also ANSI standard Z88.2-1980 "Practices for Respiratory Protection," and standard Z9.4-1984 "Ventilation and Safe Practices of Abrasive Blasting Operations."

Protective Clothing/Equipment: Protective gloves and clothing are optional. Wear protective shield (safety glasses) when exposed to dust particles.

Safety Stations: Not Applicable

Contaminated Equipment: Not Applicable

Comments: Avoid creating and breathing dust. See also Handling Precautions in Section 7.

Section 9 - Physical and Chemical Properties

Physical State: Not Applicable

Appearance and Odor: White or tan sand, granular, crushed, or ground; no odor or taste

Odor Threshold: Not Applicable

Vapor Pressure: None

Vapor Density (Air=1): None

Formula Weight: Not Applicable

Density: Not Applicable

Specific Gravity (H₂O=1, at 4 °C): 2.65

pH: Not Applicable

Water Solubility: Insoluble in water

Other Solubilities: Not Applicable

Boiling Point: 4046 °F

Freezing/Melting Point: 3050 °F

Viscosity: Not Applicable

Refractive Index: Not Applicable

Surface Tension: Not Applicable

% Volatile: Not Applicable

Evaporation Rate: None

Section 10 - Stability and Reactivity

Stability: Stable

Polymerization: Will not occur

Chemical Incompatibilities: Contact with powerful oxidizing agents such as flourine, chlorine trifluoride, manganese trioxide, oxygen difluoride, may cause fires.

Conditions to Avoid: None

Hazardous Decomposition Products: Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas - silicon tetrafluoride.

Section 11- Toxicological Information

Toxicity Data:

Eye Effects: Not Applicable

Acute Inhalation Effects: Not Applicable

Acute Oral Effects: Not Applicable

Skin Effects: Not Applicable

Chronic Effects: Not Applicable

Carcinogenicity: Not Applicable

Mutagenicity: Not Applicable

Teratogenicity: Not Applicable

Section 12 - Ecological Information

Ecotoxicity: Not Applicable

Environmental Fate: Not Applicable

Environmental Degradation: Not Applicable

Soil Absorption/Mobility: Not Applicable

Section 13 - Disposal Considerations

Disposal: Dispose in accordance with Federal, State, and Local regulations.

Disposal Regulatory Requirements: Not Applicable

Container Cleaning and Disposal: Not Applicable

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Not Applicable

Packaging Authorizations

Quantity Limitations

Shipping Symbols: Not Applicable

a) **Exceptions:** Not Applicable

a) **Passenger, Aircraft, or Railcar:** Not Applicable

Hazard Class: Not Applicable

b) **Non-bulk Packaging:** Not Applicable

b) **Cargo Aircraft Only:** Not Applicable

ID No.: Not Applicable

c) **Bulk Packaging:** Not Applicable

Packing Group: Not Applicable

Applicable

Vessel Stowage Requirements

Label: Not Applicable

a) **Vessel Stowage:** Not Applicable

Special Provisions (172.102):

b) **Other:** Not Applicable

Not Applicable

Section 15 - Regulatory Information

EPA Regulations: Not Applicable

OSHA Regulations: Not Applicable

State Regulations: Not Applicable

Section 16 - Other Information**Prepared By:** M. Day**Revision Notes:**

Rev. A - Corrected Sect. 2 wt. or vol. to 100.0 (03/20/02)
Rev. B – Revision (04/25/03)
Rev. C – Revision (08/02/04)
Rev. D – Changed Description (02/24/10)
Rev. E – Update to EU REACH requirements (09/02/2020)

HMIS

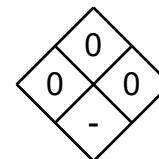
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PPE†

†Sec. 8

**Abbreviations Key:**

CAS: Chemical Abstracts Service
GHS: Globally Harmonized System
OSHA: Occupational Safety and Health Act
PEL: Permissible Exposure Limit
ACGIH: American Conference of Government
Industrial Hygienists
TLV: Threshold Limit Values
NIOSH: National Institute for Occupational Safety and Health
REL: Recommended Exposure Limit
TWA: Time Weighted Average
STEL: Short-Term Exposure Limit
IDLH: Immediately Dangerous to Life or Health

Literature References:

<https://img1.guidechem.com/msdspdf/14808-60-7.pdf>

Additional Hazard Rating Systems: Not Applicable

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