

SOUTHERN FILTER MEDIA

MATERIAL SAFETY DATA SHEET

1. Essentially similar to OSHA 174 (Sept. 1985).
2. Essentially similar to OSHA 20 (May 1972)
3. May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1200. 1910(48 FR 53340) (November 25, 1983). Standards should be consulted for specific requirements.
4. Required under USDL Safety and Health Regulations for ship repairing, ship Building and ship breaking (29 CFR 1915, 1916, 1917)

SECTION I IDENTITY

- A. Product Identity: Filter Sand (**DO NOT USE SOUTHERN FILTER MEDIA MATERIALS FOR SANDBLASTING**)
- B. Manufacturer's Name: Southern Filter Media, Inc.
- C. Address: 37826 Greenwell Springs Road
Greenwell Springs, LA 70739
- D. Emergency Phone Number: (225) 654-3928
- E. Date Prepared: 11/15/00 Name of Preparer: Mark Williams
- F. Distributor (If applicable): _____
- G. Chemical Names and Synonyms: Silica Dioxide
Silicon Dioxide
Silicon Dioxide, Crystalline
Crystalline Silica
Quartz
- H. Trade Names and Synonyms: Sand, Silica Sand
- I. Freight Classification (Truck Load): Item 90220 100J Class 50 + 35

- J. U.F.C. (Rail) Sand Underground (N.O.I.): Item 47460 Class 13 (Bulk), Class 17½ (Bagged)
- K. Standard Commodity Code (Underground Silica Sand): 14-413-10
- L. D.O.T. Classification: Non-Flammable Solid (not listed in 49 CFR 172.101).
- M. H.M.I.S Classification: 4-0-0-E
- N. N.F.P.A.: 2,0,0, Respirator to remove < 10 micron dust.
- O. U.N./NA: Not Listed.
- P. Chemical Family: Natural Rock Forming Mineral
Natural Mineral Extracted from Earth (inorganic)
Silica: Natural Mineral Quartz
- Q. I.M.O. Classification: Not Listed.
- R. Standard Industrial Code (S.I.C.): 1446 Industrial Sand (1442 Sand and Gravel)
- S. C.A.S. Number: 14808-60-7
- T. WHMIS Classification: Class D-2 Materials causing other toxic effects
- U. IARC Classification 2A: Limited evidence of a causal relationship, exposure to crystalline silica and cancer in humans.
- V. ACGIH Classification A2: Suspected human carcinogen
- W. NTP Classification: "Known to be a human carcinogen"

SECTION II
HAZARDOUS INGREDIENTS

Silicon Dioxide/Crystalline Silica/Quartz, 90-99%

Current OSHA PEL 8-Hr. TWA (29 CFR 1910.1000, Table Z-3):

Crystalline Quartz (Respirable) $\frac{10\text{mg/m}^3}{\% \text{SiO}_2 + 2}$

Quartz (Total Dust) $\frac{30\text{mg}/\text{m}^3}{\% \text{SiO}_2 + 2}$

The percent of quartz in the formula is the amount determined from an airborne sample.

Both concentration and percent quartz for the application of this limit are to be determined from fractions passing a size selector as described in 29 CFR 1910.1000, Table Z-3.

Proposed ACGIH 8-Hr. TWA: 0.05 milligram respirable quartz per cubic meter of air ($0.05 \text{ mg}/\text{m}^3$)

PEL = Permissible Exposure Limit
TWA = Time Weighted Average

SECTION III PHYSICAL/CHEMICAL PROPERTIES

- A. Boiling Point: $4046^\circ\text{F}/2230^\circ\text{C}$
- B. Vapor Pressure (mm Hg): Not Applicable
- C. Vapor Density (air = 1): Not Applicable
- D. Solubility in Water: Negligible
- E. Appearance and Odor: White to tan fine granules, odorless
- F. Specific Gravity ($\text{H}_2\text{O} = 1$): 2.65
- G. Melting Point: $3110^\circ\text{F}/1710^\circ\text{C}$
- H. Evaporative Rate (Butyl Acetate = 1); None
- I. PH: 6.0 to 7.5
- J. Percent Solids by Weight: 100%
- K. Molecular Weight (calculated): 60.1

**SECTION IV
FIRE AND EXPLOSION DATA**

- A. Flash Point: No flash point, open or closed cup
- B. Flammable Limits: Not flammable
- C. Extinguishing Media: Use extinguishing media appropriate to the surrounding fire.
- D. Special Fire Fighting Procedure: No fire or explosion danger. Material is not Combustible. Fire fighters should use self-contained breathing apparatus and eye protection in heavy concentrations of dust.
- E. Unusual Fire and Explosion Hazards: None

**SECTION V
REACTIVITY DATA**

- A. Stability: Stable (Inert)
- B. Incompatibility (Materials to avoid): Reacts with hydrofluoric acid to generate volatile, corrosive gas, SiF_4 (silicon tetrafluoride). May be attacked by strong alkalis. Will combine chemically with many metallic oxides upon heating to high temperatures.
- C. Hazardous Decomposition or By-products: None.
- D. Hazardous Polymerization: Will not occur.
- E. SiO_2 (Quartz): When exposed to high temperatures, may change crystalline structure to form tridymite (above 870°C) or Cristobalite (above 1470°C) which pose greater health hazards than quartz.

SECTION VI HEALTH HAZARD DATA

SKIN: Dermal absorption does not occur. To minimize skin contact and skin abrasion, wear appropriate work clothing, wash skin at each shift change.

INGESTION: Ingestion is not normally a problem. Before eating, hands and face should be washed. All food and drink should be kept and eaten in separate lunch rooms. Do not eat, drink or smoke in work areas where exposure to silica dust may be excessive.

EYE CONTACT: Silica sand dust may be an irritant to those with sensitive eyes. Safety glasses or goggles capable of excluding dust should be worn in these cases.

INHALATION: Excessive inhalation of fine silica dust is hazardous. Crystalline silica in the lung can produce a pneumoconiosis commonly known as silicosis, which is a chronic, slowly developing disease; and cancer.

CARCINOGENICITY: Crystalline Silica is listed in the IARC Monographs On The Evaluation of The Carcinogenic Risk of Chemicals To Humans as having "limited evidence" for carcinogenicity to humans. (IARC Monographs Volume 42)

Prolonged overexposure to free crystalline silica dust above the values specified in section II may cause scarring of the lungs with cough and shortness of breath. A delayed lung injury, silicosis, may result from breathing free silica. Silicosis is a disabling, progressive and sometimes fatal pulmonary fibrosis characterized by the presence of typical nodulation in the lungs. (Reference: H.E.W. publication #NIOSH 75-120). Free crystalline silica dust has been classified as having "limited evidence" of carcinogenicity in humans by the International Agency For Research on Cancer. (Reference: IARC Monographs Volumes 42 & 68), is "Known to be a human carcinogen" (Reference: NTP "Ninth Report on Carcinogens") and as a suspected human carcinogen (Reference: ACGIH 2000 TLV[®]s and BEI[®]'s)

REFERENCES

Source	Data
NIOSH- Registry of Toxic Effects of Chemical Substances 1982 – Vol.3	Inhalation TClo: 16mppcf/8hr/ 17.9yrs. LClo: 300µgs/m ³ /10yrs Intravenous Ral: LClo 90mg/kg Aquatic Toxicity Rating: TLM 96:over 1000 ppm. Tumorigenic Data: Listing of data for rats, hamsters
American Conference Governmental Industrial Hygienists, 2000, Page 61	TLV-TWA: 0.05mg/cu meter respirable dust TLV-TWA 10 mg/cu meter-total Dust if quartz limit not exceeded
Dangerous Properties of Industrial Materials: Fourth Edition, SAX Page 1993	Toxic Hazard Rating: Acute Local Inhalation: 2 Acute Systemic: 0 Chronic Local: Inhalation 1 Chronic Systemic: Inhalation 1 Toxicology: From the point of view of the number of men exposed and cases of disability produced, silica is the chief cause of pulmonary dust disease. The prolonged inhalation of dust containing free silica may result in the development of a disabling pulmonary fibrosis known as silicosis
Industrial Hygiene and Toxicology F.A. Patty Vol.1, Page 121 and Vol. 2A, Page 3016	“Silicosis a dust disease (pneumoconiosis) of the lungs resulting from the overexposure to free SiO ₂ dust, usually begins insidiously with symptoms of coughing , dyspnea, wheezing and repeated non-specific chest disease.
International Agency For Research Cancer (IARC) Monographs On On the Evaluation Of The	There is “sufficient evidence” for the carcinogenicity of silica to experimental animals...

**Carcinogenic Risk Of Chemicals to Humans-
Silica and Some Silicates – Volume 42**

There is “limited evidence” for carcinogenicity of crystalline silica to humans.

“Limited Evidence” of carcinogenicity indicates that the causal interpretation is credible , but that alternative explanations, such as chance, bias or confounding could not be adequately excluded.

**National Toxicology Program, Ninth
Report on Carcinogens**

Respirable crystalline silica, primarily quartz, is “known to be a human carcinogen”

**OSHA Hazard Communication Rule 29
CFR Sections 1910.1200, 1915.99
1917.28, 1918.90, 1926.59, 1928.21**

**Right to Know Laws and
Regulations**

ASTM Standard E 1132-86

**Standard Practice for Health
Requirements Relating to
occupational Exposure to
Quartz Dust**

Note: The above-listed information is an incomplete excerpt of the complete information contained in the source documents.

SIGNS OF SYMPTOMS OF EXPOSURE: Silicosis can develop after prolonged overexposure. Symptoms are dyspnea , caused by the many lung scars that develop from the silica dust, pain in the chest, decreased pulmonary function, and cough.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Chronic lung scarring can progress to a progressive massive fibrosis that is often accompanied by increased susceptibility to the risk of impaired health due to a combination of smoking and silica dust exposure.

EMERGENCY AND FIRST AID PROCEDURES:

General: If a known acute exposure or incident occurs, immediately call a physician or the nearest medical facility.

Inhalation: For acute exposure immediately remove person from the contaminated area. For extreme respiratory distress administer oxygen.

Skin: Highly unlikely. Remove affected clothing and wash the affected skin area.

Ingestion: While ingestion is unlikely, if such an incident occurs, refer person to A physician.

Eye: Sand may be irritating to the eyes of sensitive or allergic personnel. In cases of extreme distress, wash eyes carefully and gently with warm water and seek medical attention.

SECTION VII PRECAUTIONS FOR SAFE HANDLING AND USE

DO NOT USE SOUTHERN FILTER MEDIA MATERIALS FOR SANDBLASTING

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Clean up with dustless methods (use vacuum or wet sweeping if possible). Provide ventilation as needed to control dust.

WASTE DISPOSAL METHOD: Follow federal, state and local regulations for solid waste. Consideration must be given to any contaminants introduced into sand during use.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Use a dustless system of storage and handling. Keep area well ventilated.

OTHER PRECAUTIONS: Use good housekeeping techniques.

SECTION VIII CONTROL MEASURES

RESPIRATORY PROTECTION: If dust exposures exceed limits, provide respiratory protection per ANSI Z88.2-1992 criteria listed below or OSHA Standard 29 CFR 1910.134

**ASSIGNED PROTECTION FACTORS
ANSI Z88.2-1992**

Type of Respirator	Protection Factor
<u>Air Purifying</u>	
Single Use, Quarter Mask	10
Half Mask, incl. Disposables	10
Full Facepiece	100
<u>Powered Air Purifying</u>	
Half Mask	50
Full Facepiece	1,000
Helmet/Hood	1,000
Loose-Fitting Facepiece	25
<u>Continuous Flow</u>	
Half Mask	50
Full Facepiece	1,000
Hood/Helmet	1,000
Loose-Fitting Facepiece	25
<u>Pressure Demand</u>	
Half Mask	50
Full Facepiece	1000
<u>Self-Contained Breathing Apparatus</u>	
Pressure Demand	
Open/Closed Circuit	
Full Facepiece	(1)

(1) Normally 10,000, but recent studies indicate that all users may not achieve protection factors of 10,000. For emergency planning purposes where hazardous concentrations can be estimated, an APF of no higher than 10,000 should be used.

VENTILATION: Local or general exhaust as appropriate to control exposures. Engineering control (e.g. mechanical exhaust) should be utilized in order to ensure that employee exposures to respirable dust do not exceed the Permissible Exposure Limit.

HAND PROTECTION: Not required under normal use conditions.

EYE PROTECTION: Not required under normal use conditions.

WORK/HYGIENIC PRACTICES: Use good housekeeping techniques.

SPECIAL PRECAUTIONS: Use dustless systems for handling, storage, and clean up so that airborne dust does not exceed the PEL. Use adequate ventilation and dust collection equipment. Maintain, clean and test respirators in accordance with OSHA regulations. Maintain and test ventilation and dust collection equipment. Wash clothing which has become dusty: do not beat the dust from the clothing. We recommend that smoking be prohibited in all areas where respirators must be used. Warn your employees (and your customers/users in case of resale) by posting and other means of the hazards and precautions to be used. Provide training for your employees about the precautions per OSHA requirements.

SECTION IX

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any other process.

The information and recommendations contained herein are based upon data believed to be correct.

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