



Silica Dust and Silicosis: Reference Sources

1. OVERVIEW

Crystalline silica, or quartz as it is more commonly known, is a basic component of the earth's crust which is also the most prevalent, making up some 28% of the earth's crust in its various forms. Existing as crystalline or non-crystalline (amorphous), silica naturally occurs in granite, clay, beach sand, most types of rock and soil, limestone and sandstone, amongst others, in either or both states. It is used in the manufacture of concrete, masonry, ceramics, glass, finishing compounds and more. Although considered chemically inert, it will react with hydrofluoric acid. Crystalline silica becomes a significant health hazard when it is fractured, as in sandblasting with silica, releasing very fine respirable dust. The health hazards or potential for disease from silica exposure are related to the total exposure, factors of which include particle size, concentration, frequency and duration. Most people are exposed to silica on a daily basis throughout their normal lives with no perceptible ill health effects. Conditions such as smoking or pre-existing lung disease may make some people more susceptible to the hazards of respirable silica exposure. It is prudent to use all available measures to reduce exposure while in an environment containing silica. Silicosis, the disease associated with silica exposure, is the formation of fibrous nodules in the lungs. Silicosis is an entirely preventable disease if the proper precautions are taken.

2. CAS INFORMATION

U.S. Department of Labor/Occupational Safety and Health Administration (OSHA) can provide specific information on the following in their publication *Industrial Exposure and Control Technologies for OSHA Regulated Hazardous Substances*, Volume 2, Substances K-Z and Indices:

FORM OF SILICON DIOXIDE (SiO ₂)	CAS No.
Silica, crystalline quartz	14808-60-7
Silica, crystalline-tripoli	1317-95-9
Silica, crystalline-cristobalite	14464-46-1

3. REFERENCE SOURCES

OSHA: 1-202-999-OSHA (1-202-999-6742) or for emergencies call 1-800-321-OSHA (1-800-321-6742)

State Director: 586-8844

Consultation Project Office: 586-9116 or 586-9100

Honolulu Area Office: 541-2685

Regional Office: 1-415-744-6670 or 1-415-975-4310 (Region 9)

NIOSH: 1-800-35-NIOSH (1-800-356-4674), (select Option 2, then Option 5 to obtain complete silicosis prevention package)

American Lung Association: 1-800-LUNG-USA (1-800-5864-872)

4. PUBLICATIONS

OSHA standards, interpretations, directives and additional information are now available on the internet at "<http://www.osha.gov/>" & "<http://www.osha-slc.gov/>". OSHA materials may also be purchased on CD-ROM from the U.S. Government Printing Office, Superintendent of Documents, phone (202) 512-1800. GPO Order #S/N 729-013-00000-5, single copy \$30.00, 1 year \$88.00.

Single copies of the following are available (free with SASE) from U.S. Department of Labor, OSHA/OSHA Publications, P.O. Box 37535, Washington, DC 20013-7535.

OSHA 2056, *All About OSHA*

OSHA 2098, *OSHA Inspections*

OSHA 3021, *Employee Workplace Rights*

OSHA 3047, *Consultation Services for the Employer*

OSHA 3077, *Personal Protective Equipment*



OSHA 3079, *Respiratory Protection*

OSHA 3084, *Chemical Hazard Communication*

OSHA 3088, *How to Prepare for Workplace Emergencies*

59(27):6126-6184, Feb. 9, 1994, Hazard Communication; Final Rule in Federal Register

NIOSH, in conjunction with the Department of Health and Human Services (DHHS) and the Center for Disease Control (CDC) have produced three alerts on silicosis, which can be obtained by calling 1-800-35-NIOSH, or NIOSHTIC® may be used to search the NIOSH electronic database for reference sources (over 80 were available when last accessed).

Alert No. 92-102, *Preventing Silicosis and Deaths from Sandblasting*

Alert No. 92-107, *Preventing Silicosis and Deaths from Rock Drillers*

Alert No. 96-112, *Preventing Silicosis and Deaths in Construction Workers*

Pub. No. 86-102, *Occupational Respiratory Diseases*

Copies of the following are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, phone (202) 512-1800. Include GPO Order Number. Make payments payable to Superintendent of Documents. OSHA 2254, *Training Requirements in OSHA Standards and Training Guidelines*, #029-016-00137-9, \$4.25 ea.

OSHA 3071, *Job Hazard Analysis*, #029-016-00142-5, \$1.00 ea.

OSHA 3104, *Hazard Communication — A Compliance Kit*, #029-016-00147-6, \$18.00 ea.

OSHA 3111, *Hazard Communication Guidelines for Compliance*, #029-016-00127-1, \$1.00 ea.

The American Thoracic Society, medical section of the American Lung Association, has issued several publications and reprinted articles regarding silicosis, its effects and prevention, including the following:

Adverse Effects of Crystalline Silica Exposure, reprinted from the American Journal of Respiratory and Critical Care Medicine, Vol. 155, No. 2, February 1997, pp. 761-768.

Audio/Visual Materials: Training and audio/visual materials may be purchased from either the OSHA Training Institute, 1555 Times Drive, Des Moines, IL 60018, phone (312) 297-4810 or National Technical Information Services, U.S. Commerce, Springfield, VA 21161, phone (703) 487-4650.

AVA 14624, SSOO/LL, *Eye injuries and Eye Protective Equipment*, \$90.00 ea.

AVA 14626, SSOO/LL, *Safety and Health Factors with Temperature Stress*, \$90.00 ea.

AVA 18055, SSOO/LL, *Hazard Communication Standard*, includes slides, script, handouts and booklet, \$60.00 ea.

AVA 18265, VNB1/LL, *Safety and Health Factors for Working with Silica*, \$90.00 ea.

AVA 18463, VNB1/LL, *Safety and Health Factors in Welding and Cutting*, \$90.00 ea.

5. INTERNET SOURCES

There are numerous sources available on-line. Conduct your search using relative keywords or combinations of the following: silica, crystalline, silicosis, etc. Some starting points for information are listed below.

http://www.asosh.org/Programmes/SORDSA/Crystalline_silica.htm

http://www.asosh.org/WorldLinks/best_sites.htm

<http://www.osha.gov/SLTC/silicacrystalline/index.html>

<http://www.osha.gov/SLTC/index.html>

<http://www.osha.gov/SLTC/constructionsilica/>

<http://www.cdc.gov/Niosh/W99cont.html#CONTENTS>

<http://www.cdc.gov/niosh/02-129A.html>

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