

SILICA and SILICOSIS

Probable Use of Silica

If you can answer YES to any of these, then it is likely that Silica is used at your work and that it is airborne.

Industry Do you work in any of these?

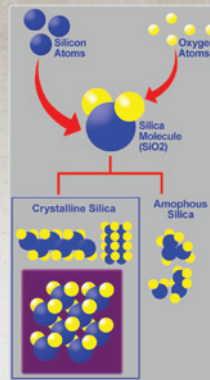
- Abrasive blasting
- Asphalt pavement manufacturing
- Blast furnaces
- Cement manufacturing
- Ceramics, clay, and pottery
- Concrete mixing
- Concrete tunneling
- Construction (mainly cement, concrete work)
- Demolition
- Electronics industry
- Foundry industry: grinding, molding, shakeout, core room (High Risk)
- Hand molding, casting, and forming
- Jack hammer operations
- Manufacturing abrasives, paints, soaps, and glass
- Mining
- Repair or replacement of linings of rotary kilns and cupola furnaces
- Rolling and finishing mills
- Sandblasting (High Risk)
- Setting, laying, and repairing railroad track
- Steelwork
- Stone, brick, and concrete block cutting, blasting, chipping, grinding, and sawing
- Tunneling operations

Occupations Are you one of these?

- Brickmason/stonemason
- Construction laborer
- Crane and tower operator
- Crushing and grinding machine operator
- Furnace, kiln, non-food oven operator
- Grinding, abrading, buffing, and polishing machine operator
- Hand molder/shaper (not jeweler)
- Heavy-equipment mechanic
- Janitor or cleaner
- Machinist
- Metals/plastics machine operator
- Miscellaneous material moving equipment operator
- Millwright
- Operating engineer
- Painter who sandblasts (High Risk)
- Production supervisor
- Rock driller (High Risk)
- Roof bolter (High Risk)
- Sandblaster (High Risk)
- Steelworker
- Welder/cutter

Materials Are any of these involved?

- Abrasives
- Coal Dust
- Concrete
- Dirt
- Filter Aids
- Graphite, natural
- Mica
- Mineral Products
- Paints
- Pavement
- Perlite
- Plant Materials
- Plastic Fillers
- Polishing Compounds
- Portland Cement
- Sands
- Silicates
- Slag
- Soapstone
- Soil



The Basics on Silica

Silica is a mineral compound made up of one silicon atom and two oxygen atoms.

Oxygen is the most abundant element in the earth's crust. Silicon is the second most abundant. Due to such abundance, the formation of the compound silica in nature is very common.

There are other compounds that contain silicon whose names are quite similar, such as silicate and silicone. Do not mistake these for silica. They are not the same thing.

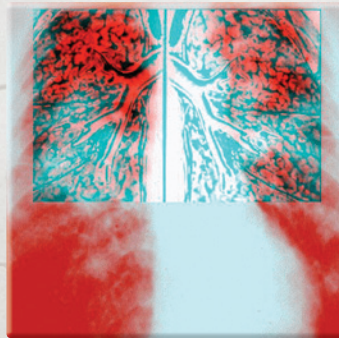
If the individual silica molecules are lined up in order and create a repeatable pattern then the silica is in crystal form. We call it "crystalline" silica.

There can be more than one repeatable pattern in silica. The various crystal patterns are given their own name. There are quartz, cristobalite, tridymite, and other rare forms of crystalline silica. Quartz is so common that the term quartz is often used to refer to crystalline silica. And sand is often used to refer to quartz.

Persons working with silica can develop a disease called silicosis. This disease is 100% preventable if appropriate steps are taken. Individuals are at risk in the workplace if: 1) the silica can become airborne, 2) the airborne particles are a certain size, 3) the worker breathes in the silica.

The Basics on Silicosis

Silicosis is a disease where scar tissue forms in the lungs and reduces the ability to extract oxygen from the air.



Symptoms include:

- shortness of breath while exercising
- fever
- occasional bluish skin at ear lobes or lips
- fatigue
- loss of appetite

There are three kinds of silicosis, based on amount of exposure and length of time.

1. Chronic

- occurs after 10 or more years of mild overexposure to silica
- the most common of all types
- may go undetected for years

2. Accelerated

- develops between 5 and 10 years of moderate overexposure

3. Acute

- develops within weeks up to five years due to breathing very large amounts of silica

Silicosis renders the victim more susceptible to infection and diseases such as tuberculosis and lung cancer.

Smoking increases the damage. Silicosis and smoking are deadly together.



FACTS:

EACH YEAR 300 People die from a disease called silicosis. There is no cure, prevention is the only answer.



EMSIL ANALYTICAL, INC.
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For Additional Information
Call EMSIL Toll-Free:

West Coast 888.455.3675 **East Coast** 800.220.3675



Westmont, NJ Laboratory

Resource: <http://www.osha.gov/SITC/etools/silica/silicosis/silicosis.html>

This poster is for illustrative purposes only. The information contained herein is general in nature and is not intended as a substitute for professional advice or remediation technique. If you have concerns, consult a specialist in your area or your local health department.