

1. What is crystalline silica?

Crystalline silica is ubiquitous (everywhere). It is a basic component of soil, sand, granite, and many other minerals. Quartz is the most common form of crystalline silica. Since quartz is also the most common mineral in the earth's crust, it is associated with many types of rock. All forms of silica may become respirable sized particles when workers chip, cut, drill, or grind objects that contain crystalline silica.

2. What is “respirable” silica?

Dust as a whole is described as solid particles, which may become airborne depending on their origin, physical characteristics and environmental conditions. Dust particles that are less than 10µm are considered respirable. Silica particles larger than that are not considered respirable. As a point of reference, the diameter of a strand of human hair is between 17 and 180µm.

3. Is silica found in any setting or products used outside of industrial settings?

Quartz products are also found in common everyday items such as cleansers, cosmetics, art clay and glaze, pet litter, talcum powder, caulk, putty, paint, and mortar. Of course, it is also found at the beach or in children's sand boxes.

4. What are the hazards of crystalline silica?

Exposure to significant quantities of respirable crystalline silica dust can eventually lead to serious or fatal respiratory disease, such as silicosis. The primary route of exposure to respirable crystalline silica is through inhalation while using commercial products and during activities such as farming, mining, construction and quarrying. Exposure to non-respirable silica dust is not considered a respiratory hazard.

5. What is silicosis?

There are three types of silicosis:

- *Chronic/classic silicosis*, the most common, occurs after 15–20 years of moderate to low exposures to respirable crystalline silica. Symptoms associated with chronic silicosis may or may not be obvious; therefore, workers need to have a chest x-ray to determine if there is lung damage. As the disease progresses the worker may experience shortness of breath upon exercising and have clinical signs of poor oxygen/carbon dioxide exchange. In the later stages, the worker may experience fatigue, extreme shortness of breath, chest pain, or respiratory failure.

- *Accelerated silicosis* can occur after 5–10 years of high exposures to respirable crystalline silica. Symptoms include severe shortness of breath, weakness, and weight loss. The onset of symptoms takes longer than in acute silicosis.
- *Acute silicosis* occurs after a few months or as long as 2 years following exposures to extremely high concentrations of respirable crystalline silica. Symptoms of acute silicosis include severe disabling shortness of breath, weakness, and weight loss, which often leads to death.

6. What tests are there to see if I have been exposed to silica?

There are no valid tests for personal exposure to silica, whether by chest X-rays or by blood testing. However, a pulmonary function test (PFT) can be done to measure any changes in lung function. OSHA surveillance examinations are required when workers are exposed to the “action level” of silica at the workplace. Further testing or evaluation can be determined by a specialist with experience in evaluating silica exposed individuals.

7. How do I know if anyone in my organization is at risk for silica exposure?

An exposure assessment should be conducted to determine if anyone in your organization is at risk for silica exposure. A team of medical professionals and environmental specialists will be able to determine who could have been exposed, how the exposure could occur (inhalation, ingestion, through the skin or another route), how much and often the exposure could occur, as well as address any concerns regarding current or future related health issues. In addition, it is important to create a preventative exposure plan to mitigate risks and amounts of exposure, and medical surveillance and environmental monitoring programs to help ensure compliance with OSHA regulatory issues or inspections.

For more information related to silica exposures please contact us at solutions@cogencyteam.com.