

The Basics of a Silica Control Plan

- 1. Control the Source** – Eliminate silica dust through wet methods, or substitute the activity creating the dust
- 2. Control the Dust** – isolate the dust through ventilation or HEPA filtering
- 3. Control at the Employee Level** –Train and educate on exposure, proper PPE, housekeeping and hygiene measures, and monitor exposure levels
- 4. Control the Environment** – housekeeping, labeling, warning signs, appropriate atmospheric monitoring, routine preventative measures

NOTE: You MUST use the exact control method specified in the OSHA Silica Control tables. If you do not follow these methods, or your activity is not listed, a silica exposure assesment has to be completed and appropriate controls put in place.

DID YOU KNOW

- The longest word in the English language is the medical diagnosis of silicosis, or pneumonoultramicroscopic-silicovolcanoconiosis (yes, that is all one word!)
- Silicosis can lead to lung cancer, kidney disease, arthritis, lupus, and tuberculosis
- There is no cure for silicosis because it is not a traditional illness that can be reversed; there is nothing that can be done to repair the damaged lung tissue

Respirable crystalline silica is approximately 100 times smaller than beach sand

Silica is 4 microns in size – 20 times smaller than a human hair



Crystalline Silica

It's NOT Just Dust

“Approximately 1,500 men died due to acute exposure...”

In 1930, a project was started in West Virginia to divert the New River to a hydro-electric plant built for Union Carbide. This required tunneling through Gauley Mountain, which contains very high amounts of quartz. The dust produced from the quartz caused over half of the 5,000 workers to become sick within a year of exposure, and almost 1,000 died within months of becoming sick. The cause? Extremely high, acute exposure to crystalline silica.

So, what is crystalline silica? Basically, quartz dust, and that is why it is so dangerous. Think of what quartz looks like. It's very jagged, angular, and sharp. When ground to a fine a dust or powder, it can be inhaled deeply into the lungs. Once in the lungs, it wreaks havoc by causing tissue damage and clogging the blood vessels that carry oxygen to the body. This process causes scarring, and ultimately fibrosis, which means the lungs become less elastic making it increasingly difficult for the body to get oxygen. Unfortunately, there is no cure for silicosis.

Crystalline silica can be found on the job site anywhere there is cutting, grinding, drilling, sanding, mixing, or demolishing of materials containing silica. 99% of the time, that material is concrete.

Thankfully, exposure to crystalline silica is very easy to control.

How to Control Exposure – Like any dust, the last thing we want to do is increase the amount that is airborne. Always use wet methods for cutting when available. When drilling, use vacuums with the appropriate HEPA filter to keep dust contained. If the work is being done inside and is producing large amounts of dust, isolate the area from other workers as best as possible.

Respiratory PPE for Crystalline Silica – Each job that has the possibility for silica exposure must have a silica exposure control plan. In this plan, the steps to limit the exposure are outlined. If the exposure can't be reduced to below the limits set by OSHA (50 µg/m³), then a respirator must be used. This can be something as simple as a N95 rated dust mask. Additionally, if you can reasonably expect to be exposed to the action level amount of 25 µg/m³, then the OSHA Silica Control Tables must be followed.

However, using a respirator requires a medical evaluation to make sure your lungs are strong enough to function properly. Additionally, you must be fitted, trained on the use, and instructed on how to maintain the respirator by a competent person.

Never use a respirator unless you have been trained and authorized to do so.

Contact Safe Workforce today for your safety and training needs!

