OSHA’S CRYSTALLINE SILICA RULE:
What does it mean for you?
Crystalline silica is an abundant natural material found in soil, stone and sand. It is also present in many construction materials such as brick, mortar and concrete. It becomes respirable when any of the afore-mentioned materials are cut or broken down by any other method. Typical activities that can create silica dust or respirable crystalline silica include blasting, chipping, cutting, grinding and drilling.

More than 85% of workers exposed to respirable crystalline silica work in the construction industry. Other industries where workers are exposed include: asphalt roofing materials, concrete products, cut stone, dental laboratories, foundries, jewelry, porcelain enameling, pottery, railroads, ready-mix concrete, shipyards, structural clay products, and support activities for oil and gas operations.
Inhaling Crystalline Silica can have debilitating and fatal effects.

It is important to note that the effects of inhaling crystalline silica are cumulative and can go unnoticed for up to 10 years. Below are some of the illnesses that can be caused by excessive inhalation of crystalline silica:

- Silicosis – a disease where the lungs react to trapped particles of silica by scarring and forming hard nodules. When these nodules become large, it becomes difficult to breathe and can result in death. Silicosis is irreversible and continues to worsen even after exposure has ceased.
- Lung Cancer
- Tuberculosis (for those with silicosis)
- Chronic Obstructive Pulmonary Disease

Lung with silicosis and tuberculosis
WHAT HAS CHANGED IN THE STANDARD?

Changes for Employers

OSHA has reduced the Permissible Exposure Limit (PEL) of Crystalline Silica for workers to 50µg/m³ averaged over an 8hr day.

With the reduction in the PEL, employers now must:

- Measure how much silica their employees are exposed to if it is likely to be above the action limit of 25 µg/m³ averaged over an 8 hour day
- Provide their employees with protection from crystalline silica if over 50µg/m³
- Limit worker access to areas where silica levels are above the PEL
- Take measures to control the dust where silica levels are above the PEL
- Provide respiratory protection where dust control measures fail to reduce the silica levels to below the PEL
- Offer alternative housekeeping practices to those that expose workers to silica whenever feasible
- Develop and execute a written “exposure control plan” that details work that involves exposure to silica and protection measures
- Offer regular medical examinations for workers exposed to the action level for over 30 days per year.

How much is 50 µg/m³? One gram of respirable silica sand (equivalent to an artificial sweetener packet) would generate an exposure level above the new PEL in a space the size of a football field, 13 feet high.
WHAT HAS CHANGED IN THE STANDARD?

Changes for Employees

OSHA has reduced the Permissible Exposure Limit (PEL) of Crystalline Silica for workers to 50µg/m3 averaged over an 8hr day.

Changes for employees will differ significantly between activities and environments, but here are some examples of what to expect:

1. The company you work for will have a written Silica Exposure Control Plan that you should be aware of and comply with.
2. You may be required to use dust control equipment more often.
3. You may be required to wear a respirator more often.
4. You may be required to, or given the option to, take regular medical examinations.

Our advice to employees is to understand the risk of exposure to crystalline silica and comply with any measures your employer takes to minimize these risks. Ultimately it is the employee that is affected by respirable crystalline silica and ignorance of the risks is harmful to your life. We also recommend minimizing exposure, not just ensuring it is below the PEL, as any exposure can have a cumulative effect and you may not become aware of the effects until up to a decade later.
HOW TO PROTECT YOU AND YOUR EMPLOYEES FROM RESPIRABLE CRYSTALLINE SILICA

Below are various methods of how you can limit exposure to respirable crystalline silica:

Use water to control dust – two examples of this are concrete saws with integrated water delivery and slurry blasting. This reduces the amount of airborne crystalline silica, but does not eliminate it.

Use dust extraction systems – this removes most of the airborne crystalline silica from the air, however depending on the setup, it does not eliminate exposure.

Use a respirator. When choosing your respirator pay attention to the following:

- **Tight or loose-fitting.** Tight fitting respirators only provide adequate respiratory protection if fitted correctly. Even if fit-tested regularly, the seal can be jeopardized by facial hair (as little as half a day’s growth). Loose-fitting respirators don’t require a seal to provide respiratory protection (only applicable to air supplied respirators).
- **Negative pressure or supplied air.** Negative pressure respirators rely on the wearer’s breathing to provide filtered air. Supplied air respirators use a fan, compressed air, or a pump to provide filtered air, making it easier for the wearer.
- **There are a host of other features** that make all respirators unique. Choose a respirator that suits your personal requirements.
The following sources were used to produce this document:


