Silicosis: Crystalline Silica Exposure

Silicosis or better known as Silica is an occupational disease caused by exposure to dust from crystalline silica, one of the most common minerals on the planet. Silicosis is a progressive, disabling lung disease caused by breathing dust containing particles of crystalline silica so small you can see them only with a microscope. Silicosis isn’t curable — sadly, workers still die from the disease, but it is preventable. The keys to prevention are straightforward: Identify workplace activities that produce crystalline silica dust and then eliminate the dust or control it so that workers aren’t exposed.

Identifying Hazardous Activities: You may be using products or materials that contain crystalline silica and not even know it. If your workplace is dusty, or if you work with materials that produce dust, you should be concerned about silicosis and crystalline silica hazards.

Activities that could put workers at risk:

Manufacturing:

- Metal casting
- Working with glass products
- Ceramics, clay and pottery
- Asphalt paving material
- Cut stone and stone products
- Abrasives
- Paint and rubber products
- Filtered foods and beverages

Construction:

- Chipping, hammering, and drilling rock
- Abrasive blasting
- Crushing, loading, hauling, and dumping rock
- Sawing, hammering, drilling, grinding, and chipping masonry or concrete
- Demolition of concrete or masonry structures
- Dry sweeping or using pressurized air to blow concrete, rock or sand dust
How to eliminate or control crystalline silica dust hazards: Once you’ve identified activities that expose workers to hazardous levels of crystalline silica, you need to eliminate the exposure or control it so that it isn’t hazardous. Here are some suggestions:

- **Use substitutes:** The best way to eliminate exposure is to use materials that don’t contain crystalline silica. This is an example of the “engineering” approach to hazard control. Examples of materials that eliminate crystalline-silica exposure include the following: aluminum oxide - aluminum shot - ambient polycarbonate - apricot pits - corn cobs - cryogenic polycarbonate - emery - garnet - glass beads - melamine plastic - novaculite - polycarbonate - silicon carbide - stainless cut wire - steel grit - steel shot - urea plastic - walnut shells - wheat grain - white aluminum oxide – zircon

- **Use dust-containment systems.** Other ways to eliminate exposure include installing dust-collection systems on machines that generate dust or using enclosed cabinets with gloved armholes to do hazardous tasks.

- **Work wet:** Use wet drilling or sawing methods to control dust. Remove dust and debris with a wet vacuum or hose it down rather than blowing it around with compressed air or dry sweeping it.

- **Ventilate:** Use local-exhaust ventilation systems to keep work areas dust free.

- **Use personal protective equipment (respirators and dust masks):** Personal protective equipment can protect workers from hazards, but it doesn’t eliminate hazards. If the equipment fails, or it’s not appropriate for a particular task, a worker can still be exposed.

- **Practice good personal hygiene:** Those who work with materials containing crystalline silica should wash their hands before eating, drinking, or smoking. They should shower, if possible, and change into clean clothes before leaving the worksite. They should never eat, drink, or use tobacco in abrasive blasting areas.

**Conclusion:** Though silicosis shows no symptoms at first, the victim eventually has trouble breathing and develops a severe cough. Other symptoms include fatigue, loss of appetite, chest pains, and fever. Only a complete work history, chest X-ray, and a lung-function test will determine whether or not a worker has the disease. Those who think they may have silicosis should see a medical doctor who specializes in occupational medicine.

**REMINDER TO USE WATER**

Water can keep silica dust out of the air – and out of your lungs. Use tools with water attachments to control dust at the source. Water can also keep dust down during activities like sweeping and demolition.

**USE A VACUUM**

Use tools with vacuum attachments to capture the dust right where it starts. Dust is drawn into a hood or cover attached to the tool, through a hose, and into a HEPA-filter vacuum. The dust doesn’t get into the air – or your lungs.

**WEAR A RESPIRATOR**

When other controls don’t work well enough and your work creates more silica dust than OSHA allows, your employer is required to have a full, written respiratory protection program. Respirators can protect your lungs from dangerous dust.

Visit us on the web:

[ehsinternational.org](http://ehsinternational.org)