

The *BSO Plus Safety Topic* is a review designed from the BSO Plus agenda. This safety topic is your way to stay current on the safety information over the 3 years between BSO Plus and BSR.

## SILICA

### What is silica?

Silica is the most abundant mineral on earth. The crystalline particles are very small and cannot be seen. The most common route of entry is inhalation of airborne particles. Silica is listed as a Designated Substance under O. Reg. 490/09.

### What are the health effects of exposure to silica?

Long term exposure to this crystalline silica dust can result in silicosis - a lung disease caused by inflammation and scarring in the upper lobes of the lungs, for which there is no cure.

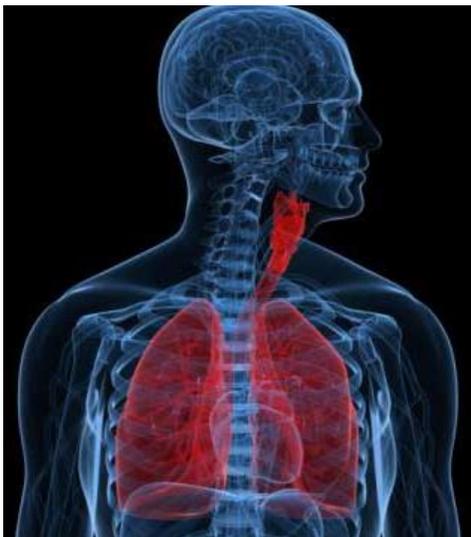
Breathable crystalline silica also causes lung cancer.

In addition, exposure to breathable crystalline silica has been associated with other respiratory diseases, such as chronic obstructive pulmonary disease (including bronchitis and emphysema), as well as kidney and immune system diseases.

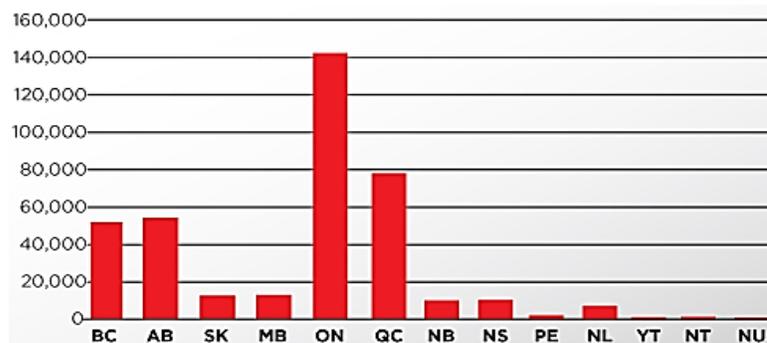


### DID YOU KNOW ?

CAREX Canada estimates that since 1981 over 380,000 workers in Canada have been exposed to crystalline silica - with a vast majority of those exposures being in Ontario.



### WORKERS EXPOSED TO CRYSTALLINE SILICA BY REGION



**380,000**  
WORKERS (EST.)

CRYSTALLINE SILICA  
EXPOSURE **IN CANADA**

SOURCE: CAREX Canada, CCOHS, OHSA Reg. 490/09

## How are workers exposed to silica?



Silica is the basic component in sand and rock. Crystalline silica is found in many materials common on construction sites, and is a primary component of the following material:

- Brick and refractory brick
- Concrete, concrete blocks, cement, mortar, cementitious grout
- Rock and stone
- Sand, dirt fill and top soil
- Filter media for water filtration systems
- Ceramic molecular sieve and support balls



Exposure to respirable silica can occur whenever workers are working with silica containing products where dust is generated. As workers breathe in the dust the silica settles in their lungs. Airborne respirable crystalline silica particulate, or dust, may be generated by the following tasks:

- Abrasive blasting of concrete
- Crushing loading, jack hammering, drilling, sawing of rock, concrete or masonry
- Dry sweeping or pressurized air-blowing of concrete or dust
- Removal of after-service Refractory Ceramic Fibre and Calcium Magnesium Silicate Insulation

## How to reduce the risk of silica exposure?

- Attend education and training sessions provided by the employer.
- Use administrative controls including washing facilities on site.
- Use available PPE (respirators, eyewear, protective clothing).
- Use water to prevent dust from becoming airborne, and if possible, enclose areas that create a lot of dust.
- Know how to report exposure incidents.
- Know the control plan for silica in your workplace and recognize that you may still come into contact with silica. Being aware of where you may encounter it can help to keep you safe.

### DID YOU KNOW ?

When exposure is examined by occupation, the largest exposed groups for both men and women are construction trade labourers (105,000 people exposed), heavy equipment operators (41,000 people exposed), and plasterers and drywallers (34,000 people exposed).