

## **SAFE WORK PROCEDURE**

### **REDUCING EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA**

#### **What is respirable crystalline silica (RCS)?**

- Respirable crystalline silica (RCS) or silica dust is generated when materials containing crystalline silica are processed (such as when they are crushed, cut, drilled, quarried, or polished). The particles generated are so tiny (100 times smaller than a grain of sand) they can be breathed in and can penetrate deep into the lungs where they can cause irreversible damage.
- The most common form of crystalline silica is quartz

#### **What diseases can silica dust cause?**

- Acute silicosis - after a short exposure to very high levels of silica dust, within a few weeks or years. This causes severe inflammation and build-up of protein in the lung.
- Accelerated silicosis - after exposures of 3 to 10 years to moderate to high levels of silica dust. This causes inflammation, protein in the lung and scarring of the lung (fibrotic nodules).
- Chronic silicosis - after long term exposure to lower levels of silica dust. This can lead to fibrotic nodules, shortness of breath, and progressive massive fibrosis.
- Chronic bronchitis
- Emphysema
- Lung cancer
- Kidney damage
- Scleroderma - a disease of the connective tissue of the body

#### **What is the exposure limit?**

- The workplace exposure standard (WES) for silica dust is 0.05mg/m<sup>3</sup> (eight-hour time weighted average). The WES must not be exceeded.

### What can be done to reduce exposure?

Task	Controls
Plant prestart	<p>Prestart checks conducted when machinery is not operational</p> <p>In dry dusty conditions use supplied dust mask when outside of vehicle – ensure mask clean, maintained and stored appropriately</p>
Plant startup/shut down	<p>Where possible mobile crushing plant to be washed down to reduce dust</p> <p>Remove yourself from the crushing area as soon as is possible</p> <p>Monitor plant start up from vehicle where possible</p> <p>Use of supplied dust mask when outside of vehicle – ensure clean, maintained and stored appropriately</p>
Operation	<p>Monitor weather conditions</p> <p>Use water where possible to reduce dust from operations</p> <p>Always operate excavators, loaders, trucks and light vehicles with doors and windows closed – ensure seals remain clean and well maintained</p> <p>Use UHF to communicate, do not open windows/doors to converse</p> <p>Limit speed of vehicles moving around</p> <p>Do not allow product to fall from unnecessary height into crushers</p> <p>Use of supplied dust mask when outside of vehicle – ensure clean, maintained and stored appropriately</p>
Maintenance	<p>Move plant away from active crushing operations – if this can not be achieved, stop any movement in the area</p> <p>If possible, wet down plant before any maintenance/repairs</p> <p>Use of supplied dust mask if plant can't be moved from crushing zone – use of disposable dust masks only permitted when a full or half face mask will restrict movement or impede ability to complete the task</p>
Cleaning interior	<p>Use vacuum – do not sweep or use compressed air</p> <p>Wet wipe surfaces regularly to eliminate dust build up</p>
General	<p>Wait until dust settles before exiting vehicles/plant</p> <p>Wash hands and face before eating or leaving site</p>

**[Remember if you are unsure, ask for advice](#)**