

Proposed changes to silica exposure standards

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WorkSafe has proposed a reduction of silica crystalline Workplace Exposure Standards, noting the currently-acceptable limits are “inadequate to protect workers”.

The review, launched Wednesday by WorkSafe, considers that the current standard of 0.1 mg / cubic metre of crystalline silica respirable dust, over an eight hour shift, be changed.

Instead, it is proposing that industry adopt a standard of 0.05 mg / cubic metre.

Crystalline silica is one of 34 substances currently under WES review.

WorkSafe noted that Safe Work Australia has also recently commenced consultation in relation to their WES for respirable crystalline silica and respirable coal dust.

MinEx chief executive Wayne Scott told *Inside Resources* he would review the proposed reductions in WES, “particularly for respirable crystalline silica, carbon disulphide and sulphur dioxide, as each may impact on the extractives sector”.

MinEx is planning to make a submission on the proposed changes, with details on this to be released in the coming weeks.

Crystalline silica

WorkSafe describes crystalline silica as a naturally occurring substance, found in most rock, granite, sand and soil. It is one of the most common minerals in the Earth’s crust, and igneous rocks.

Occupational exposure to crystalline silica can occur during production, storage, transportation and end-use of the aforementioned materials.

Additionally, WorkSafe notes, occupational exposure can also occur when earth is moved, for example in mining, quarrying, construction and farming, or, by the disturbance of silica-containing products, such as the demolition of concrete.

Workers can be exposed to crystalline silica dusts by inhalation, eye and dermal (skin) contact.

A threat to NZ?

The number of workers exposed or potentially exposed to crystalline silica in New Zealand workplaces is unknown, WorkSafe said. However, products containing the substance are widespread in the country.

In a 2017 article in the *New Zealand Medical Journal*, David McLean and his team reported that workers involved in the Christchurch rebuild were exposed to respirable crystalline silica levels of up to 4.8 mg / cubic metre – significantly above the currently-accepted WES of 0.1 mg / cubic metre.

The monitored workers were involved in a range of tasks on construction sites including: driving diggers; jackhammering; grinding, drilling or crushing concrete; cutting concrete of Linea board; and general labouring.

Statistics New Zealand 2018 data indicated that 246,460 people work within: agriculture; oil and gas extraction; metal ore mining; non-metallic mineral mining and quarrying; and construction – and are therefore exposed regularly to the substance.

A threat to health?

WorkSafe says that [numerous studies](#) have investigated the health consequences of exposure to crystalline silica.

There are conflicting reports as to whether crystalline silica is carcinogenic, though WorkSafe noted occupational exposure to the substance, as respirable-sized particles of 10 µm or smaller, “is conclusively linked with silicosis”.

Silicosis is a fibrotic lung disease “that is irreversible and progressive where healthy lung is replaced by areas of fibrosis”.

Acute silicosis is associated with inhaling high concentrations of crystalline silica over seven months to five years, “which may lead rapidly to respiratory failure within months”.

In addition, WorkSafe suggests that there is “sufficient evidence in humans for the carcinogenicity of crystalline silica in the form of quartz; and limited evidence in experimental animals for the carcinogenicity of dust”.

Non-workers

In January 2018 MinEx dismissed fears of people living near quarries being exposed to dust that can cause silicosis.

Scott said that testing near Canterbury quarries, which had been at the centre of silicosis claims, had shown no evidence that respirable crystalline silica would cause harm to residents.

“We’ve seen a toxicology professor being at pains to emphasise the low chances of developing silicosis from quarry dust, and medical authorities saying testing at those Canterbury quarries shows no RCS level which is remotely likely to cause silicosis,” [he said at the time](#).

