

Respirable Dust & Crystalline Silica Analysis

Exposure of workers to respirable crystalline silica (RCS) is associated with elevated rates of lung cancer. The strongest link between human lung cancer and exposure to respirable crystalline silica has been seen in studies of quarry and granite workers and workers involved in ceramic, pottery, refractory brick, and certain earth industries.



Overview

Crystalline silica is found in numerous materials including sand, stone, rock, concrete, brick, glass and ceramics. Exposure to crystalline silica occurs across a range of industries and operations including; excavation and earth moving, mining, mineral processing, construction, fracking, abrasive blasting, foundry casting and during the fabrication and installation of stone countertops,

Crystalline silica dust can be generated when cutting, crushing, blasting, grinding, sawing or drilling materials that contain silica. When this dust becomes airborne and is inhaled it has the potential to be very harmful to human health.

When a person is exposed to crystalline silica dust and it is inhaled they can develop; emphysema, chronic bronchitis or kidney damage. Acute silicosis can develop within only a few weeks or years of exposure to high levels of silica dust.

Laboratory Analysis

AS 2965 and NIOSH 7500 (mod) –Crystalline Silica by X-Ray Diffraction – XRD (Quartz, Cristobalite)

Samples are collected by drawing a known volume of workplace air through 5-µm pore size low ash polyvinyl chloride (PVC) filters preceded by a suitable cyclone in accordance with AS-2985. The Respirable Dust can be analysed gravimetrically, comparing the weight of the filter paper before and after sampling.

For the analysis of crystalline silica, Eurofins has commissioned the latest Bruker D8 ENDEAVOR X-Ray Diffractometer (XRD) in its Perth laboratory. The instrument is fully automated for high sample throughput and has a 3 kW generator, giving enhanced performance to achieve the lowest detection and quantification limits.

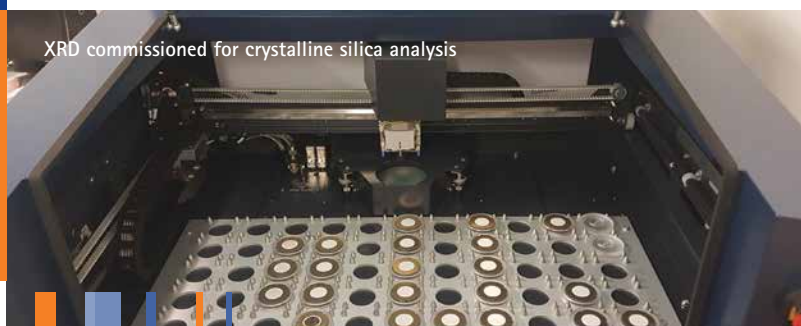
Investment in the XRD ensures Eurofins can offer industry leading limits of reporting for quartz and cristobalite and industry leading turnaround times.

Accreditation

Eurofins are currently accredited for respirable dust in accordance with AS 2985, and seeking accreditation for crystalline silica (quartz and cristobalite) by XRD.



XRD commissioned for crystalline silica analysis



With XRD technology, samples that used to take hours can now be completed within minutes resulting in industry leading turnaround times.