



## Respirable Dust and Silica

Silica (silicon dioxide) is a naturally occurring mineral composed of silicon and oxygen. Silica and silicate compounds make up nearly 90% of the earth's crust and are very stable and durable minerals.

The correct term for potentially hazardous silica is "Crystalline Silica". It may also be known as crystalline quartz or free silica.

In most rocks, crystalline silica makes up only a fraction of the total silica containing materials. Other forms of silica are silica combined with other elements (silicates) and amorphous silica. In general, these forms of silica are much less likely to cause disease, apart from the fibrous silicates, such as asbestos.

### Risks in Exposure

Exposure to potentially harmful levels of silica is a hazard for many occupations, including those associated with mining, quarrying, foundries, sandblasting, the construction of roads and tunnels, and manufacturing of stone, clay and glass products.

Exposure of the general community to respirable crystalline silica is typically very low.



Envirolab is a leading laboratory of airborne CONTAM monitoring and analysis.

We are **NATA Accredited** for Respirable Dust and Crystalline Silica (Quartz and Cristobalite) analysis in accordance with Australian Standard, AS2985-2009, "Workplace Atmospheres – Methods, Sampling and Gravimetric Determination of Respirable Dust" and NIOSH 7603, "Quartz in Coal Mine Dust, by IR (redeposition)"

## NATA Accredited for Respirable Dust and Crystalline Silica



Accreditation Number 2901

The National Association of Testing Authorities (NATA) is the authority that provides independent assurance of technical competence through a proven network of best practice industry experts for customers who require confidence in the delivery of their products and services.

As a leading laboratory, we are fully accredited and qualified to perform testing for respirable dust and crystalline silica according to national standards.

With **NATA Accreditation**, you have the confidence that you are teaming with a partner that will provide you with absolute results. Contact us today to find out more.

# Why Test for Respirable Dust and Silica with Envirolab?

Results from our testing are used by experts to manage and improve workplace safety and generally ensure the health of staff.

That's why we continue to remain as a first choice for our clients that include work health testing inspectors, mining operators, engineering contractors and various government agencies.

Occurrences of silica dust particles that are small enough to enter the alveolar region of the lungs are common. This fine dust is called respirable dust. The component of respirable dust that is crystalline silica is called "respirable silica".

A single short-term exposure to dust containing a high concentration of silica can irritate the eyes, nose, throat and lungs. Essentially all dusts can have this effect. However, such exposure typically does not cause permanent injury and the effects are usually temporary.

Repeated and prolonged exposure over many years to relatively high concentrations of crystalline silica in air is known to cause a lung disease called silicosis. Such exposure may occur for instance when rocks containing crystalline silica are ground up during mining or quarrying operations. The disease may also occur following short-term exposure to extremely high concentrations. Such exposures are extremely unlikely to occur today given modern work practices.

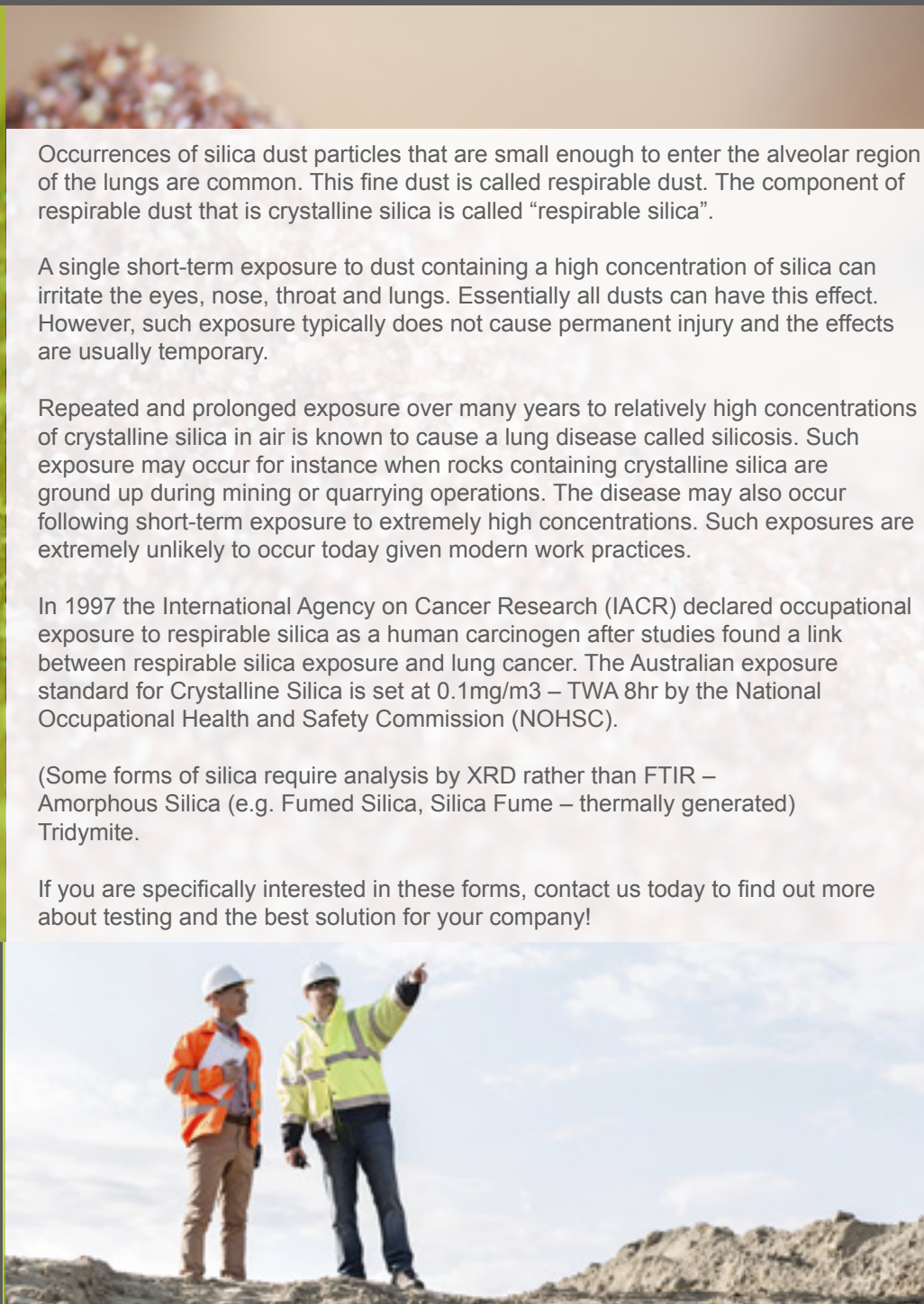
In 1997 the International Agency on Cancer Research (IACR) declared occupational exposure to respirable silica as a human carcinogen after studies found a link between respirable silica exposure and lung cancer. The Australian exposure standard for Crystalline Silica is set at 0.1mg/m<sup>3</sup> – TWA 8hr by the National Occupational Health and Safety Commission (NOHSC).

(Some forms of silica require analysis by XRD rather than FTIR – Amorphous Silica (e.g. Fumed Silica, Silica Fume – thermally generated) Tridymite.

If you are specifically interested in these forms, contact us today to find out more about testing and the best solution for your company!

Our experience and state-of-the-art facilities ensure a fast turnaround of absolute results.

Our variety of expert services can also be tailored to your needs as an individual enquiry or as a full project.



For further information contact our laboratories



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