

What is silica?

Silica is a naturally occurring mineral found in most rocks, sand, clay; and in products such as bricks, concrete, tile and manufactured stone (engineered or composite stone).

What is respirable crystalline silica?

Respirable crystalline silica refers to silica particles that can penetrate deep into the lung because of their small size.

How does silica get into the lungs?

Dusts can easily be breathed into the lungs but are then normally removed by the lung's natural defence mechanisms. These defence mechanisms may not be able to remove dusts such as silica completely, especially following a lot of exposure. This can result in inflammation and scarring of the lung and serious diseases may develop later.

What harm can silica cause?

Depending on factors such as how much dust a worker breathes in and for how long, exposure to silica can result in:

- Silicosis - a scarring of the lung which can result in a severe shortness of breath and is not reversible. Severe cases can result in complications leading to death.
- Lung cancer
- Rheumatological diseases: e.g. rheumatoid arthritis, scleroderma
- Chronic kidney disease
- Chronic obstructive pulmonary diseases (COPD) e.g. emphysema and chronic bronchitis

These diseases are completely preventable. Minimisation or elimination of exposure and then early detection through health monitoring can minimise the impacts of these diseases on the worker's health.

How much exposure does it take to cause disease?

Development of these diseases, including how long it may take to develop, depends on a number of factors such as the amount, how often and for how long a worker is exposed to silica-containing dust. It is thought that freshly fractured silica can do more harm than weathered silica particles. Some people are more susceptible than others to developing disease even though they may have had similar patterns of workplace exposure.

Typically, silica related diseases progress slowly and cause minimal symptoms or disability at first. However, regular and heavy silica exposure can cause disease development and progression at a more rapid pace.

What sort of work activities involving silica require health monitoring?

Some examples of work activities you might be doing that require health monitoring are:

- Cutting, sanding or drilling materials containing silica, such as manufactured stone (engineered or composite stone) used to fabricate kitchen benches and countertops
- Excavation, earth moving and drilling plant operators
- Stone and clay processing machine operations
- Paving and surfacing
- Construction labouring activities
- Brick, concrete or stone cutting (particularly dry methods)
- Abrasive blasting

Crystalline silica is a very common mineral used in manufacturing building products and construction materials. Airborne dust is most likely to occur when materials or products containing silica in the workplace are cut, sanded, drilled or through any other job which creates fine dust.

What is the purpose of health monitoring for exposure to silica?

For the individual, health monitoring will detect any abnormalities or changes in the lungs as a result of work-related silica exposure. Health monitoring for silica exposed workers is mandatory under the current Work, Health and Safety Regulation 2017 and should be organised and provided by your employer.

Health monitoring is performed to determine if there are cases of silica-related diseases occurring in the workplace, to ensure that workplace control measures are effective, and to provide opportunities to reinforce safe work practices. However, health monitoring is not a substitute for effective dust control.

What does health monitoring involve?

Health monitoring for silica typically involves a medical examination with a focus on the respiratory system. It may include one or more of the following components to look for changes in the lungs and their function over time:

- Exposure history
- Respiratory symptom questionnaire
- Physical examination by a doctor
- Chest x-ray
- Spirometry test (i.e. testing lung function)
- Referral for follow up as required

Why do I need to have health monitoring so often?

Baseline health monitoring is performed to detect any abnormalities or concerns prior to starting work in a silica process, with annual medical examinations, including lung function testing, to detect any changes whilst you are working. Although cases of acute silicosis are rarely reported, heavy silica exposure can cause rapid changes to lung function.

Health monitoring is also performed when you leave your current work to ensure no disease has developed. These health monitoring requirements are mandatory under the WHS legislation.

How do all my health monitoring examinations link together?

It is the responsibility of your employer to maintain your records of health monitoring and to provide past results, if available, to the doctor conducting the physical examination.

If Dust Diseases Care is your health monitoring provider, they will maintain your records on behalf of your employer. Dust Diseases Care can provide you with copies of your results at any time upon request. Also, health monitoring data collected from groups of workers can help identify where excessive exposures may be occurring.

What can I do to protect myself against a silica-related disease at work?

The most effective way to protect yourself at work is to avoid or minimise your exposure to silica. If your role requires you to work in close contact with silica-containing dust, you should be using safe work practices including exhaust ventilation systems and water suppression systems that minimise the creation of dust. For most workers, respiratory protection will be the most important first line of defence. Ensure that your respirator is the correct type, has been fitted correctly and is stored and maintained properly.

For more information about working safely with crystalline silica, please go to www.safework.nsw.gov.au

What are the signs and symptoms I should be aware of?

If you know you have been exposed to silica, symptoms could include cough, breathlessness and tiredness.

If you have early signs of silicosis on your chest x-ray but no symptoms and you subsequently cease to be exposed to silica dust, you are far less likely to suffer progressive silicosis in the future and may never develop symptoms of the disease. That is the reason why screening and early detection is so critical for anyone with potential exposure to silica dust.

What happens if I develop a work-related silica disease?

If your medical results show that you have contracted a silica-related disease from exposure to silica at work, the doctor performing the health monitoring will guide you on the next steps.

This will include actions that can be taken to improve your health, whether ongoing monitoring or treatment is required, whether you can continue to work with silica or if you need to be reassigned to a different area where you won't be exposed. You should discuss any concerns you have about your ongoing health with the examining doctor.

Your examining doctor, if not an icare Dust Diseases Care doctor, can notify Dust Diseases Care directly or provide you with contact information for Dust Diseases Care who will be able to assist you with ongoing medical examinations and any eligibility for compensation.

It is important to note that not all silica-related disease is compensable under workers compensation legislation. Entitlements will depend on the level of impairment the dust disease is assessed to have caused.

Find out more about screening for dust diseases www.icare.nsw.gov.au/lung-screening