

What is known about silica dust and health effects?

Silica has been known to cause lung fibrosis (silicosis) for over 100 years. In recent years exposure to silica dust has been linked with lung cancer and other disorders including scleroderma and kidney disease. The following is a brief summary of the recent medical literature relating to Silica and lung cancer. If you have questions about this information and what it means, you may wish to ask your own doctor.

Lung cancer risk from Silica has been reported in several studies. One such study is by the National Institute for Occupational Health and Safety (NIOHS) who have published a report stating "In addition to the risk of silicosis, epidemiologic studies indicate that workers exposed to respirable crystalline silica have an increased risk of developing lung cancer, pulmonary tuberculosis, and air-ways diseases." *Health Effects of Occupational Exposure to Respirable Crystalline Silica*, NIOSH Hazard Review p. iii, April 2002

Another study supporting this view is from the American Thoracic Society who have found that "the available data support the conclusion that silicosis produces increased risk for bronchogenic carcinoma." American Thoracic Society, *Adverse Effects of Crystalline Silica Exposure*, Medical Section of the American Lung Association, p4, June 1996. Yet another study has concluded that "...findings support a causal relationship between lung cancer and quartz exposure after allowance for cigarette smoking, in the absence of cristobolite or other known occupational carcinogens", J. M. Hughs et al, *Cohort Mortality Study of North American Industrial Sand Workers. II. Case-Referent Analysis of Lung Cancer and Silicosis Deaths*, Elsevier Science Ltd, p 201, 2001

Other studies have **not** shown this risk. Hessel et al conclude that there is insufficient evidence supporting carcinogenicity of silica (*Silica, Silicosis and Lung Cancer: A Response to a Recent Working Group Report*, Journal of Environmental Medicine, Vol 42 No.7, p 704, July 2000. Another study states "Studies of subjects on silicosis case registers consistently show an excess of lung cancer, but it is not clear to what extent these increased risks represent a direct effect of silica exposure, a secondary effect of the silicosis, preferential inclusion of subjects suffering from the effects of smoking or bias in diagnostic accuracy" C. A. Soutar et al, *Epidemiological Evidence on the Carcinogenicity of Silica: Factors in Scientific Judgement*, Annals Occupational Hygiene, Vol 44, p 3-14, 2000.

A recent Australian study concludes that "There is evidence that the risk of lung cancer in silica exposed people resides mainly in those who have established silicosis, however the current evidence does not support with any certainty a determination of whether or not silicosis is a necessary precursor to silica-induced lung cancer." N. H. De Klerk et al, *A Review of the Australian Occupational Exposure Standard For Crystalline Silica*, The University of Western Australia, p ii, December 2002

If you need an explanation of the above information, we suggest that you take this leaflet to your family doctor, who can discuss the issues with you.

Silica and You

Information for Users

Silica dust may be present in your work areas where some Unimin Australia Limited products are being used. Silica is a natural component of many sands, aggregates, concrete, grouts and mineral products. Read the label to see if the product you are using contains Silica. Read the MSDS for more health and safety information.

The logo for Unimin Australia Limited, featuring the word "Unimin" in a bold, red, sans-serif font.

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Read the Label ↔ Read the MSDS

What you should know about silica....

- silica dust can be very fine particles which are respirable - they can get into the deep parts of your lungs as you breathe
- exposure is preventable
- your work will be safe if the correct equipment and ventilation are used
- if in doubt, ask your supervisor.

What are the hazards of silica?

- silica dust is dangerous
- breathing in silica dust can cause long-term illness
- it may cause fibrosis (thickening and stiffening) of the lungs; those most affected will suffer shortness of breath
- breathing in excessive silica dust may increase the risk of getting lung cancer
- fine dust is worst for causing lung damage
- long-term exposures are the most important
- there is risk to your health if precautions are not followed.

What do you need to do to keep healthy?

- follow the rules laid down for your job. If you are told to wear a respirator for your job, you **MUST** do so, and make sure it is working correctly
- report any problems or worries to your supervisor.

How is your health protected?

Exposure to silica dust **can** be prevented by:

- proper workplace procedures
- equipment maintenance
- personal protection
- workplace risk assessment.

The following objectives should be considered:

- design equipment to avoid **releasing dust into the air**
- try to **contain** dust
- **clean up** spills and dust with a water hose or vacuum or by wet sweeping rather than dry sweeping.
- **ventilate** machines and areas to extract dust
- use a **respirator** if it is needed.

If you work with silica products regularly, you may have to have a regular medical check-up....

- your employer will advise on whether you need a medical examination every 4 years to check your lungs
- the doctor will give you a questionnaire about you and your history and a lung function (breathing) test
- you may have a chest x-ray of your lungs
- the check up is done by a doctor with special experience.

Read the Label ↔ Read the MSDS

a Material Safety Data Sheet is available for any Unimin product