

# RESPIRABLE CRYSTALLINE SILICA (RCS)

MANAGEMENT OF  
RESPIRABLE  
CRYSTALLINE SILICA  
RISKS SHOULD BE  
PROACTIVE, WITH  
AN INDUSTRY  
FOCUS IN  
REDUCING THE  
WORKER EXPOSURE  
TO AS LOW AS  
REASONABLY  
PRACTICABLE

## EXPERT SERVICES ONLINE SOLUTIONS TRAINING

Asbestos & Hazardous Materials  
Occupational Hygiene  
Property Risk  
Health & Safety  
Environmental Management  
Contaminated Land  
Emergency Management

Respirable Crystalline Silica (RCS) is a Category A1 carcinogen<sup>1</sup> and is found in many different materials such as bricks, tiles, aggregates, mortar, concrete, shale, engineered & natural stone products, sandstone, and fibre cement sheeting. Silica-containing materials are commonly used in industries such as construction, manufacturing, stone benchtop fabrication and tunnelling.

The respiratory issues related to silica dust have been recognised for well over a century, however occupational lung disease has only come to the forefront of Australian safety management recently due to a huge surge in diagnosed cases of silicosis, mainly related to the fabrication of engineered stone. Worker exposure over time may cause the development of diseases including silicosis (either acute, accelerated or chronic conditions), chronic bronchitis, emphysema, lung cancer and kidney damage.

Persons Conducting a Business or Undertaking (PCBU) and other duty of care holders have specific legislative duties to manage health and safety risks associated with hazardous chemicals, including RCS, ensuring compliance with workplace exposure standards (WES), which has recently been adjusted from 0.1mg/m<sup>3</sup> to 0.05mg/m<sup>3</sup>. These changes will have a significant impact to how PCBUs control their activities.

## Identification

RCS (Quartz) is the most hazardous type of silica, with non-crystalline types of silica (e.g. amorphous silica) being significantly less hazardous to humans. The percentage of silica within the rock or product is relevant to its risk potential as there may be around 5% silica with marble, but up to 95% silica within engineered stone. Specific workplace activities need to be reviewed to confirm if they are high, medium or low risk processes for generating silica dust. High-risk activities include, stone fabrication, tunnelling, excavation, drilling, abrasive blasting and jack hammering.

A Certified Occupational Hygienist (COH®) can develop an exposure assessment strategy and assist in implementing regulatory requirements for occupational health and hygiene. Any occupational exposure assessment should start with a workplace characterisation process where workers are organised into similar exposure groups (SEGs) based on work activities.



Company Management should be preparing their workforce for the current and pending increased legislation rigour & statutory guidelines.

Greencap's team of occupational hygiene professionals assist clients in the development of hygiene management plans, identifying hazards, monitoring exposure levels, and implementing controls for Respirable Crystalline Silica.

## Control Measures

Control measures need to be in line with the Hierarchy of Controls which, in order of most to least effective, are Elimination, Substitution, Isolation, Engineering, Administrative & Personal Protective Equipment. A combination of these controls may be required to achieve the best outcome for your workers.

Health monitoring for worker exposure to silica is a key control measure for workers carrying out ongoing work with silica<sup>2</sup>.

## How Greencap Can Help

### Risk-Based Hygiene Management Plans

Within Greencap's Health & Safety consulting team are Certified Occupational Hygienists (COH®) and occupational hygienists that are full members of the Australian Institute of Occupational Hygienists (AIOH), who assist clients with the development of scientific risk-based hygiene assessment and management plans in Australia and New Zealand.

### Hazard Identification

Greencap's experienced occupational hygiene team undertake the identification of RCS hazards through a five-step process:

1. Basic characterisation
2. Workplace information gathering & investigation
3. Exposure assessment & mitigation
4. Hazard control & risk mitigation
5. Reassessments

### Workplace Monitoring

Greencap can conduct risk assessments and also develop and conduct workplace personal exposure monitoring for respirable crystalline silica and other workplace hazards.

### Exposure Mitigation

Greencap has experience in identifying and mitigating potential occupational exposures and assisting workplaces in ensuring that current controls are, or continue to be, effective and recommend new or control improvements.

In addition to other controls, Greencap's Occupational Hygienists can assist with personal protective equipment (PPE) including selection and fit-testing of appropriate respiratory protection equipment (RPE).

For further information on these services go to:

[greencap.com.au/services/hygiene](https://www.greencap.com.au/services/hygiene)

or email:

[enquiries@greencap.com.au](mailto:enquiries@greencap.com.au)

1 [https://www.safeworkaustralia.gov.au/system/files/documents/1810/classification\\_of\\_hazardous\\_chemicals\\_under\\_the\\_work\\_health\\_and\\_safety\\_regulations.pdf](https://www.safeworkaustralia.gov.au/system/files/documents/1810/classification_of_hazardous_chemicals_under_the_work_health_and_safety_regulations.pdf)

2 <https://www.safeworkaustralia.gov.au/book/health-monitoring-persons-conducting-business-or-undertaking-guide>

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