

# QYO

## COSHH essentials in quarries: Silica



The Control of Substances Hazardous to Health Regulations 2002 (COSHH) require employers to ensure that exposure is prevented or, where this is not reasonably practicable, adequately controlled. This guidance gives practical advice on how this can be achieved by applying the principles of good practice for the control of exposure to substances hazardous to health, as required by COSHH.

It is aimed at people whose responsibilities include the management of substances hazardous to health at work (eg occupational health specialists, anyone undertaking COSHH assessments, supervisors and is also useful for trade union and employee safety representatives). It will help you carry out COSHH assessments, review existing assessments, deliver training and supervise activities involving substances hazardous to health.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

See Essential information near the end of the sheet.

# Advice for managers

## Introduction

HSE have produced these advice sheets to help employers assess and control risks from hazardous substances in the workplace.

For some common tasks the sheets take into account the health hazards (and exposure potential) of substances used or produced to identify an approach appropriate to control the risks.

## What is silica, where is it found?

Many minerals contain silica, and produce silica dust known as respirable crystalline silica (RCS). RCS is also known as respirable  $\alpha$ -quartz, cristobalite, or 'free silica', and can be wrongly labelled as 'amorphous silica'.

Crystalline silica concentrations in common materials

silica flour, cristobalite flour	100%
sandstone, gritstone, quartzite	more than 70%
sand, gravel, flint	more than 70%
calcined diatomite	25% to 65%
shale	40% to 60%
marl	up to 60%
china stone	up to 50%
slate	up to 40%
granite	up to 30%
industrial grade talc	up to 30% (some are silica-free)
ball clay	15% to 30%
pumice	up to 25%
ironstone	up to 15%
basalt, dolerite	up to 5%
kaolinite	less than 5%
limestone, chalk, marble	up to 2% (but these can contain silica layers)

The QY series of sheets (listed below) describes good practice for the control of exposure to silica in the quarry industry.

QY1	Rock drilling
QY2	Excavating and haulage
QY3	Crushing
QY4	Drying and cooling
QY5	Dry screening
QY6	Dry grinding
QY7	Jumbo bag filling: 500–1500 kg
QY8	Silica flour: Small bag (15–50 kg) filling and transfer
QY9	Withdrawn
QY10	Withdrawn
QY11	Withdrawn

### Hazards

RCS is also known as alpha-quartz, cristobalite or 'free silica', and can be wrongly labelled as 'amorphous silica'. All RCS is hazardous by inhalation as the 'respirable' dust, which is very fine and invisible under normal lighting, can get deep into the lungs. The workplace exposure limit (WEL) for RCS is 0.1 mg/m<sup>3</sup> (8-hour time weighted average).

Inhaling RCS can lead to:

- Silicosis which is a serious and irreversible lung disease that can cause permanent disablement and early death. There is an increased risk of lung cancer in workers who have silicosis.
- Chronic obstructive pulmonary disease (COPD) which is a group of lung diseases, including bronchitis and emphysema, that results in severe breathlessness, prolonged coughing, chronic disability and can lead to death. The risk of COPD is increased by smoking.

RCS dust is also abrasive and drying when in contact with skin, and can lead to contact dermatitis.

### What the sheets cover

Reducing exposure to an adequate level always involves a mixture of equipment and ways of working. This means employers should:

- choose the most effective and reliable control measures;
- make sure they are used properly by instructing, training and supervising workers;
- use regular maintenance to make sure control measures keep on working;
- check and review all elements of control measures regularly for their continued effectiveness. Each sheet gives advice on how to achieve this for a particular task.

### How to use the sheets

- Consider the processes/tasks and hazardous substances in your workplace.
- Look for opportunities to substitute with less hazardous materials.
- Examine the advice sheets for each of the tasks.
- Examine the essential information sheets listed on each advice sheet.
- Compare operations in your workplace with recommendations in the advice sheets for all of the relevant tasks.

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- Record your findings (this forms part of your risk assessment).
  - Record any actions you need to take covering: issues identified, planned actions, target completion date, person responsible, status of any issues, and a review of effectiveness.
  - Keep a record of your actions to prevent exposure of workers to hazardous materials.

You may have to change old working practices or spend money on new controls. Decide how best to make any changes required 'across the board'. If you are in doubt, seek expert help, don't give up! Ask your trade association, trade union or contact a consultant (see Further information).

### Essential information

You can find the full COSHH essentials series at [www.hse.gov.uk/coshh/essentials/](http://www.hse.gov.uk/coshh/essentials/)

Health surveillance, monitoring and sampling sheets are available at [www.hse.gov.uk/pubns/guidance/gseries.htm](http://www.hse.gov.uk/pubns/guidance/gseries.htm)

### Further information

*Respiratory protective equipment at work: A practical guide* HSG53 (Fourth edition) HSE Books 2013  
[www.hse.gov.uk/pubns/books/HSG53.htm](http://www.hse.gov.uk/pubns/books/HSG53.htm)

*Controlling airborne contaminants at work: A guide to local exhaust ventilation (LEV)* HSG258 HSE Books 2011  
[www.hse.gov.uk/pubns/books/hsg258.htm](http://www.hse.gov.uk/pubns/books/hsg258.htm)

Occupational Safety and Health Consultants Register [www.oshcr.org/](http://www.oshcr.org/)

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit [www.hse.gov.uk/](http://www.hse.gov.uk/). You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This document contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

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