ASSESSING WORKING MATERIALS

TO DETERMINE THE PRESENCE OF SILICA IN YOUR WORKPLACE
HOW TO DETERMINE IF SILICA IS PRESENT IN THE WORKPLACE?

Industry  Occupation  Material
If you work in an industry where:

- abrasive blasting
- asphalt pavement manufacturing
- cement manufacturing
- concrete mixing
- concrete tunneling
- construction
- road construction
- demolition
- tunneling operations
- jack hammer operations
- Masonry
- And many more...

(Respirable Silica exposure may be present).
COMMON WORK PRACTICES THAT OCCUR IN ROAD CONSTRUCTION THAT CAN LEAD TO SILICA EXPOSURE

- Drilling, cutting, grinding, chipping or hammering concrete, stone or masonry.
- Abrasive sandblasting.
- Crushing rock and concrete; mixing concrete.
- Loading, dumping and hauling rock and concrete.
- Tunneling operations.
- Milling concrete and asphalt.
- Dry sweeping or using compressed air to move dust, sand or rock.
Workers that have these occupations are at risk of silica exposure.

- Brick mason
- Construction laborer (Road construction, transportation, homes, etc)
- Crushing and grinding machine operator
- Mining machine operator
- Rock driller
- Sandblaster
- Material moving equipment operator
- Etc.
THE MATERIALS LISTED BELOW CONTAIN SILICA

Asphalt  Brick  Cement  Concrete  Concrete block  Rock

Sand  Soil  Stone  Tile  Drywall  Fiber Cement products

Grout  Mortar  Plaster  Stucco  Gunite  Refractory Mortar
WAYS TO DETERMINE IF A MATERIAL CONTAINS SILICA

1. Check the label
2. Check the Safety Data Sheet
3. Review the published data
4. Analyze a sample of the material
IMPORTANT TO NOTE

- There may be materials that contain silica but if the operations on those materials do not generate dust, there is little chance of inhaling the silica.
- There is potential for danger when crystalline silica particles are in the air.
- (It is important to note that there may be silica particles in the air even though you don’t see any dust).
A product that contains silica should have a label on it.

The machines used in the operations may also be labeled with warning signs indicating that silica is being used.

Manufacturer's responsibility: attach a label to all products that contain more than 0.1% silica that may be hazardous when used.

Employer's responsibility: ensure that the label is not removed or defaced.

This label should identify:

- The hazardous material
- The type of hazard and impacts on health.
- The manufacturer, producer, or importer’s name and address.
- The label must be in English and may also be in another language.
SAFETY DATA SHEET

- Must contain data for all materials or products containing hazardous substances.
- If a material or product contains crystalline silica in quantities greater than 0.1%, there must be a safety data sheet for it.
- The manufacturer must develop a safety data sheet for each hazardous chemical they produce or import.
- It is the employer's responsibility to provide safety data sheets for all hazardous materials at the workplace.
SAFETY DATA SHEET (KEY SECTIONS FOR DETERMINING SILICA CONTENT)

- **Section 1** - Identification - the chemical, contact information for the manufacturer, importer or other responsible party, and recommended use of the chemical.
- **Section 2** - Hazard(s) identification - the hazards the chemical presents and warning information.
- **Section 3** - Composition/information on ingredients - includes the “chemical name and concentration (i.e., the exact percentage) of all ingredients which are classified as health hazards and are present above their cut-off/concentration limits or present a health risk below the cut-off/concentration limits.”
- **Section 8** - Exposure controls/personal protection
- **Section 9** - Physical and chemical properties
- **Section 15** - Regulatory information (non-mandatory)
Source: Great Britain’s Health and Safety Executive, which is responsible for “securing the health, safety and welfare of people at work” and protecting “others from risks to health and safety from work activity,” compiled the figures for silica-containing materials.

Source: Workplace Health and Safety Queensland, Department of Justice and Attorney-General Silicosis and the lung.
ANALYZE A SAMPLE OF THE MATERIAL

Finding a laboratory with the qualifications to analyze a bulk sample for silica content.

The following are two on-line sources:

The American Industrial Hygiene Accreditation Laboratory Program’s website includes a list of accredited laboratories.

MiningUSA.com’s - this website includes a list of consultants and the type of testing services provided by each company.
TYPES OF QUESTIONS TO ASK A LABORATORY BASED ON RECOMMENDATIONS BY CPWR

- Does your company participate in the American Industrial Hygiene Association’s Industrial Hygiene Laboratory Accreditation Program?
- Does your company have experience working with construction contractors?
- Who will collect the samples? If the laboratory expects the contractor to collect the sample: Will your company provide guidance on how to make the collections?
- What is the cost for conducting a sample and what does it cover?

Are you equipped to analyze bulk samples of materials for their silica content? If yes:
- How much experience does your staff have analyzing crystalline silica?
- What sampling method does your laboratory use?
- Does this method comply with accepted government requirements? If yes, which ones?
- Will I receive a written report? Will there be a non-technical explanation?
The Create-A-Plan to Control the Dust is a great tool to help identify materials and work tasks that produce respirable crystalline silica.

https://plan.silica-safe.org/
SOURCES

- The American Industrial Hygiene Accreditation Laboratory Program’s website includes a list of accredited laboratories. [https://www.aihaaccreditedlabs.org/Pages/default.aspx](https://www.aihaaccreditedlabs.org/Pages/default.aspx)
- CPWR Create-A-Plan to Control the Dust [https://plan.silica-safe.org/](https://plan.silica-safe.org/)
- CPWR Check Label [https://www.silica-safe.org/plan/option-1-check-the-label](https://www.silica-safe.org/plan/option-1-check-the-label)
- CPWR Review the published data [https://www.silica-safe.org/plan/option-3-review-the-published-data](https://www.silica-safe.org/plan/option-3-review-the-published-data)
- CPWR Analyze a sample of the material [https://www.silica-safe.org/plan/option-4-analyze-a-sample-of-the-material](https://www.silica-safe.org/plan/option-4-analyze-a-sample-of-the-material)
- MiningUSA.com’s - this website includes a list of consultants and the type of testing services provided by each company [http://www.miningusa.com/consult/laboratory.html](http://www.miningusa.com/consult/laboratory.html)