

Beyond the cutting and crushing

Keeping you safe from Crystalline Silica

Every time you set foot on a new construction or renovation site, you take stock of the different risks and dangers to avoid. You spot the small pieces of concrete flying up into the air as your colleagues drill into the ground. You notice the sharp power-tools slicing through slabs of rock and quartz. You keep an eye on the massive cement mixer kicking up dust as it crushes and mixes its heavy concoction. But what about the dangers you can't see? Can you detect the fumes, smoke and dust that rush through your respiratory system and cling dangerously to your lungs?

We can.

That's why we've spent decades keeping you informed on potential risks and improving respiratory protection products that help keep your lungs out of harm's way. For many, minuscule particles of airborne Crystalline Silica pose a serious risk. Here's an overview of what you need to know in order to avoid the serious long-term harm Silica could do to your lungs.



Magnification of Silica

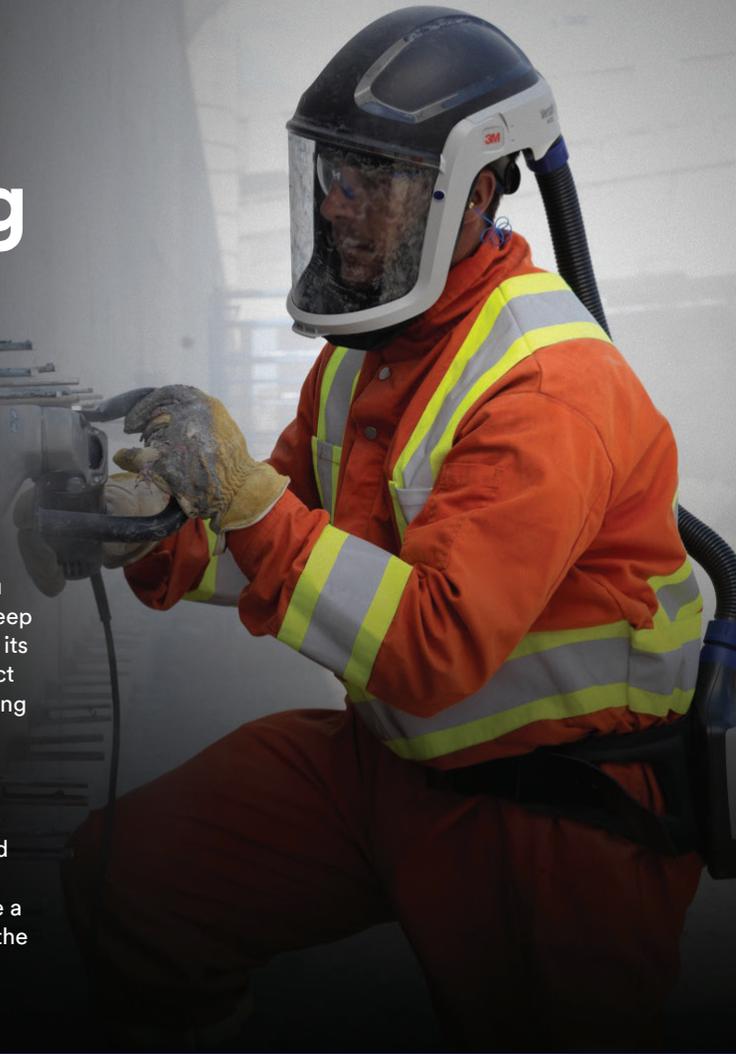
What is Crystalline Silica?

As a basic component of soil, sand and rock, Silica is one of the most widespread minerals on earth. It's most commonly found in quartz, which in turn is used in products like concrete, brick, ceramic tiles, dental filings, jewelry, tombstones and more. Though it exists in many forms, it becomes crystalline and airborne when exposed to high heat or intense pressure like abrasive cutting, crushing and sawing. That's when you need to beware.

How could it affect me?

When Crystalline Silica particles are inhaled, they make their way deep into your lungs which, in turn, begin to develop scar tissue nodules around the particles. Though it can take years for full symptoms to appear, Silica exposure has been directly linked to lung cancer, kidney disease and chronic obstructive pulmonary diseases.

One of the highest risks for workers repeatedly exposed to Silica is Silicosis, a non-reversible lung disease with symptoms that can range from shortness of breath and chest pains, to an eventual inability to breathe that could turn fatal. For people with a smoking habit or existing lung conditions such as asthma, exposure to Silica can seriously compound debilitating lung and breathing problems.



When am I at risk?

Crystalline Silica is more likely to be present in the air when you're cutting, sawing, drilling or crushing concrete, brick, ceramic tiles, rocks or stones. It also shows up whenever you're working with sand products like glass and pottery. Some of the more dangerous workplaces include mines and foundries and tasks like include abrasive blasting.

Provincial and federal authorities have established occupational exposure limits and guidelines to help manage the risks posed by airborne Silica, but research has shown that long-term contact with even small quantities of the mineral may have a serious impact on your breathing and overall health over time. So if you're unsure of the different products and processes being used around your site, we recommend wearing [protective gear](#) to reduce the potential risk.

What can I do to protect myself?

Keep dust levels down

There are a few different ways of keeping dust levels down on your construction site, which in turn will keep Silica particles from becoming airborne. Many workers will opt for methods like wet cutting, vacuum dust collection systems, intense ventilation or hosing down work sites to keep Silica dust from forming. Ask your employer about the different measures available to your team to reduce exposure risks.

Stay informed

As every province has different rules and regulations around managing Silica exposure, it's important to stay up to date with legal limits, testing methods and the latest data on how you can minimize risk.

Get the equipment you need

Once you have a sense of your exposure level, you'll want to take a look at 3M's [full range of respiratory protection products](#) to find the right product for your risk level. Whether it be a lightweight disposable respirator, a half-face respirator, full-face protection or a heavy-duty powered headtop; all of our products use advanced electrostatic media technology to let you breathe comfortably while keeping dangerous dust and particles out of your lungs.

At any time, you can [get in touch](#) with one of our respiratory experts for personalized guidance on the kind of protection you need. Their job is to evaluate risk, put your mind at ease and help keep your lungs safe so you can focus on what matters: doing your job properly and staying healthy for your loved ones and family.

Did you know?

Approximately 900,000 Canadians are occupationally exposed to Silica on a regular basis. Amongst the most at risk are construction workers, heavy equipment operators and plasterers or drywallers.

900,000  **CRYSTALLINE SILICA**
Workers (Est.) Exposure in
CANADA

Six Largest Exposure Groups By Industry	Number Exposed
Construction	573,000
Longshoremen	164,000
Oil & Gas	59,000
Mining	47,000
Manufacturing	43,000
Foundry	30,000

References

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