

# HAZARD ALERT



## To: Employees and employers in the granite counter top fabrication industry

Fabricating granite counter tops and other silica-containing materials may expose workers to levels of respirable crystalline silica above state limits, as was found recently by the California Division of Occupational Safety and Health. Workers who inhale excessive amounts of crystalline silica can develop silicosis, a serious and potentially fatal lung disease.



Silicosis is a progressive and irreversible condition of the lung that can lead to serious disability or death. Additionally, the International Agency for Research on Cancer (IARC) considers inhaled crystalline silica to be a known human carcinogen. Crystalline silica is a natural component of the earth's crust and is a basic component of sand, quartz, and granite rock. Workers with impaired lung function due to silica exposure are more susceptible to other respiratory diseases such as tuberculosis.

The health hazards of silica are not new. Silicosis is one of the world's oldest known occupational diseases, with reports dating back to ancient Greece. Although very high short-term exposures to silica (as experienced by many workers in past times) can pose a serious health hazard, long-term exposures to silica levels exceeding the state limits also pose serious health hazards.

Activities such as grinding, cutting, routing, drilling, chipping, or polishing on granite and other stone materials containing crystalline silica can create airborne dust and the potential for a health hazard to workers. The granite itself or the finished counter top does not present a health hazard. Silica exposures above the permissible exposure limit were found during recent inspections by the California Division of Occupational Safety and Health at granite counter top fabrication facilities. High silica exposures have also been found in other businesses performing similar tasks on stone products, e.g., making tombstones. Worker exposure to silica-containing dust is dependent on a number of factors, including the amount of crystalline silica in the material, the specific tools being used, the amount of dust being generated by the tasks being performed with the material, and the use of measures, such as wet methods or ventilation, to control the amount of dust reaching the breathing zone of the worker.



The California permissible exposure limit (PEL) for exposure to respirable crystalline silica is 0.05 milligrams silica per cubic meter of air (0.05 mg/M<sup>3</sup>), averaged over an 8-hour workshift. This limit can be exceeded in less than one hour of "dry" work on silica-containing granite/stone products. Employers with workers exposed to silica dust above the PEL must take steps to reduce exposure to permissible levels.



Several methods for reducing exposure to silica dust are available. Using water to suppress dust is perhaps the most effective and often-used control method. Using water-fed tools or finding other ways to apply water at the point of operation (e.g. a directed water spray or trickling water on the working surface) should always be considered. Grinders can produce the most dust and have been successfully been adapted for use with a water-feed system. Local exhaust ventilation systems can also be used to reduce exposure levels in the area where the dust or silica containing mist is generated. When engineering and work practice control measures like these are not useable for a particular industrial process or are insufficient to keep employee exposure below the PEL, respirators must be used as necessary to make up the

difference. Where respirators are used (in most cases a half-face respirator equipped with HEPA type filters), a complete respirator program must be put in place. Such a program includes proper selection, fit-testing, cleaning and maintenance, supervision, training, and written procedures.

Regulations and resources for respirable crystalline silica can be found at:

<https://www.dir.ca.gov/dosh/respiratory-silica-FAQ.html>

<https://www.dir.ca.gov/dosh/etools/08-019/index.htm>

## Do Your Part – Be Safe