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## **New England Area OSHA Emphasis Program – Occupational Exposure to Silica Dust**

The Occupational Safety and Health Administration (OSHA) has announced that a new Regional Emphasis Program (REP) is underway in OSHA's New England Region to minimize employee exposures to crystalline silica hazards associated with commercial and residential construction. The goal of this REP is to help reduce the overall rate of workplace injuries, illnesses and fatalities through outreach activities and targeted inspections. Agency REPs address hazards or industries that pose particular risks to employees within an OSHA regional jurisdiction.

Inhalation of free silica particulates can cause a lung disease known as silicosis. Only the crystalline (free silica) material found in quartz, tridymite and cristobalite and a few other nonsilicate materials causes silicosis. Silicosis is a disabling, nonreversible and sometimes fatal lung disease. In addition to silicosis exposure to respirable silica can cause lung cancer, pulmonary tuberculosis, and airways diseases. Silica exposures may also be related to the development of autoimmune disorders, chronic renal disease, and other adverse health effects.

The National Institute for Occupational Safety and Health (NIOSH) reports that each year more than 250 die from silicosis and hundreds more are disabled. Silicosis causes shortness of breath and a persistent cough.

Industries where workers are exposed to crystalline silica include construction (concrete and rock), foundries, glass manufacturing, granite cutting operations, sandblasting and mining. In the past silicosis had many names such as miner's asthma, potter's rot, grinder's consumption, miners phthisis, and stonemason's disease. All of these names were describing the same disease – silicosis.

Currently the 8 Hour time weighted average (TWA) OSHA Permissible Exposure Limit (PEL) for silica (quartz) is determined by the following formula:

$$\text{PEL} = 10 \text{ mg/m}^3 / \% \text{SiO}_2 + 2$$

Many of our clients find this confusing because an individual exposure limit is determined for each air sample collected. The formula is essentially based upon a TWA exposure of  $0.1 \text{ mg/m}^3$  of quartz. This formula must be adjusted if cristobalite is detected in the sample. OSHA is in the process of revising the silica standard. Information regarding a proposed standard is scheduled to be released sometime in 2009. Cashins & Associates, Inc. will provide updates as more information becomes available.

The American Conference of Governmental Industrial Hygienists (ACGIH) has established an 8 Hour TWA Threshold Limit Value (TLV) of  $0.025 \text{ mg/m}^3$  for quartz and cristobalite. This is significantly lower than the OSHA PEL. ACGIH recently lowered the TLV based upon recent medical studies that showed exposure to concentrations of crystalline silica above this limit significantly increases the chance of lung damage.

If you have any questions or concerns about your employees exposure to silica please give us a call. Our staff can assist you with ensuring your employees are protected from the hazards associated with silica.