

Docket: MSHA-2016-0013
Respirable Crystalline Silica

Comment On: MSHA-2016-0013-0001
Respirable Silica (Quartz) - Request for Information

Document: MSHA-2016-0013-0041
Comment from: Coal Miner / Safety Analyst

During my 43 years coal mining experience, with 26 years working as a safety analyst, there has been significant changes in regulations as well as mining technology. I am respectfully submitting the following comments concerning Silica Dust for consideration:

The epidemic of black lung disease justifies dynamic engineering controls. The current real time dust monitoring technology should be combined with the proximity detection systems, which is required for continuous mining machine operation and is available for other mining equipment. A continuous dust monitoring system provided for the machine operator that interacts with the PDS would allow for the machine to de-energize when dust exposure limits are exceeded.

Although improvements in dust sampling technology and more stringent dust sampling requirements are significant improvements, the idea that current sampling practices produce dust samples that are representative of the dust exposure that is experienced daily by the miner is unrealistic. It is common knowledge that a miner undergoing dust sampling is always in a controlled environment. Controls i.e. providing maximum air flow in the working place, careful operator position, maintaining water sprays / water pressure / cutter bits are followed to achieve compliant samples. The miner understands that compliant samples will not only prevent the company from receiving a citation but will also help hold his or her job.

Immediate Responses:

- MSHA immediately needs to adopt and enforce a separate silica dust standard in addition to the existing respirable crystalline silica standards. The standard should be $50 \mu\text{g}/\text{m}^3$, or lower, which is OSHA's permissible exposure limit for silica dust. Since 1974, NIOSH has recommended an exposure limit for

respirable crystalline silica (quartz) of $50 \mu\text{g}/\text{m}^3$). The confines of underground mine environments further supports the need for reduced standards.

- Each operator of an underground coal mine is required to develop and follow a ventilation plan that is designed to control methane and respirable dust in the mine. Although ventilation plans must be designed to control respirable dust, there is no requirement that the plan's effectiveness be verified. There is only minor differences in plans from mine to mine, particularly in small mine operations. Plan effectiveness should be assessed by field analysis.
- The dust control measures required by the dust control plan need to be expanded to include more specific action with respect to engineering controls and administrative controls. For example:
 - Belt / coal transfer points should be required to be enclosed to contain dust using curtain or fabric and be equipped with effective water spray systems i.e. water mist systems. Most dust plans require two water sprays with 20 psi water pressure be installed at transfer points and section feeders but only one of the two sprays are required to be operable at all times. There is no specific requirement for the type of water sprays to be used at these locations. It is well known that transfer points consistently generate airborne dust.
 - Belt maintenance is also an important engineering control. Keeping belt conveyors clean by using water wash systems with quality belt scrapers to clean dust build-up from belts and using water sprays on belt surfaces to reduce dust generated from dry belt surfaces.
 - Dust sampling conducted by MSHA and the mine operator should include other designated occupations including rock construction work i.e. shaft / slope sinking, overcast, belt trenches, etc. Dust sampling requirements currently are limited to coal production activities conducted on mining sections, Part 90 miners, and for designated area sampling points along conveyor belts.
 - Abatement for excessive quartz levels detected in dust samples should require the mine operator to limit exposure for the affected occupation by worker rotation until effective controls are established and proven to reduce the quartz exposure.
- Engineering or environmental controls reduce dust generation at the source and should remain as the primary means to limit respirable dust levels, and

worker exposures. Respiratory protection equipment should not be used as a substitute for engineering or environmental controls in dust control plans.

- A more stringent risk assessment program associated with respirable dust should be implemented. The program should include increased dust inspections and sampling requirements when mining conditions that are likely to produce more respirable silica dust are identified. This includes mines with low coal recovery rates and/or thick in seam rock partings, which requires greater amounts of rock to be mined with the coal, shaft sinking / slope excavation, overcast construction, and other rock construction projects. Lung disease injuries reported by the mine operator should require an investigation to assess the effectiveness of the operator's dust control plan to limit exposure.

Best Practices:

- Cumulative dust exposure can be controlled by limiting exposure. Rotation of miners to areas having lower dust concentration exposure. However, effective administrative controls requires oversight to ensure that miners adhere to the controls.
- Clean work clothes keep respirable dust exposures lower and also limits dust in change rooms. Workers should avoid the practice of wearing dusty work clothes that are kept at the mine for several days before the clothes are washed.
- Canopy Air Curtain Technology should be used to protect roof bolter operators from respirable dust exposure. The CAC delivers filtered fresh air to the equipment operator while stationed underneath the overhead canopy during roof bolting operations. The technology is available for shuttle car and other haulage equipment.

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Comment On: MSHA-2016-0013-0001
Respirable Silica (Quartz) - Request for Information

Document: MSHA-2016-0013-0048
Comment from Terry Ratliff,

Submitter Information

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General Comment

See attached file(s)

Attachments

Silica Dust Comments