ACC CRYSTALLINE SILICA PANEL[1]
Benefit-Cost Analysis of OSHA's Proposed Crystalline Silica Standard for General Industry
February 2016

> The prevention of adverse health effects associated with the inhalation of excessive amounts of respirable crystalline silica can best be accomplished by ensuring that all General Industry employers comply fully with the existing PEL of 100 µg/m^3.

OSHA's proposal to reduce the PEL to 50 µg/m^3 is unnecessary and problematic because:
1) The best available science and data gathered over more than four decades show that the current General Industry PEL of 100 µg/m^3 is an appropriate limit to protect against silica-related disease, provided it is adhered to strictly;
2) Available data indicates that exposures conforming to a PEL of 50 µg/m^3 cannot be reliably measured with an acceptable degree of accuracy and precision; and
3) Compliance with a never-to-be-exceeded PEL of 50 µg/m^3 is not *economically* feasible in most General Industry sectors; nor is it *technologically* feasible in a variety of industries – including foundries, oil and gas production, and many aspects of construction.

Achieving full compliance with the current General Industry PEL for quartz of 100 µg/m^3 is the best and most cost-efficient way to protect silica-exposed workers.
- The U.S. Centers for Disease Control (CDC) reports that the silicosis mortality rate fell by more than 90 percent from 1968 to 2010, despite the fact that actual exposures still exceed the current PEL in more than 30 percent of the samples taken by OSHA inspectors. This shows that if all employers are brought into full compliance with the current PEL, any risk of silica-related disease will be negligible.
- As a recent benefit-cost analysis commissioned by the Panel and prepared by Environomics demonstrates, reducing the PEL below 100 µg/m^3 will provide little, if any, additional health protection for American workers, while imposing enormous costs on American businesses and our economy.

Benefit-Cost Analysis of the Proposed Standard for General Industry
- Environomics estimates that the annualized cost to General Industry of achieving full compliance with the *existing* PEL would be $1.4 billion/year compared against monetized benefits of $287.7 million/year.
- Environomics then estimates the *incremental* costs and benefits attributable to the various requirements of the proposed standard, including the proposed reduction in the General Industry PEL from 100 to 50 µg/m^3. These incremental annualized costs are estimated to be $4.7 billion/year compared to incremental monetized benefits of $71.7 million/year, a ratio of costs to benefits of more than 65 to1.

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[1] The Crystalline Silica Panel at the American Chemistry Council (ACC) is comprised of American Foundry Society; American Petroleum Institute; Badger Mining; Concrete & Masonry Silica Coalition; Fairmount Santrol; International Diatomite Producers Association; Lehigh Hanson; National Industrial Sand Association; National Stone Sand and Gravel Association; The Refractories Institute; Specialty Granules; Unimin Corp; US Silica; and Vulcan Materials Company.

> Environomics findings highlight that the vast majority of the monetized health benefits of the proposed standard would be realized by bringing all employers into compliance with the current PEL, while the vast bulk of the costs would be incurred as a result of actions taken to move from full compliance with the current standard to compliance with the proposed standard. Thus, it would be far more cost-efficient and effective to bring all General Industry employers into compliance with the existing PEL rather than mandating that they attempt to comply with the proposed standard.

Environomics' analysis concluded that there were critical shortcomings in OSHA's methodology and assumptions, including:

- OSHA underestimates costs for the engineering controls needed for compliance with the proposed standard because it applied an inappropriate "cost-per-overexposed-employee" approach rather than estimating costs on a facility-by-facility basis.
- OSHA greatly underestimates the *incremental* engineering control costs that would be needed to comply with the proposed PEL, because the Agency wrongly assumes employers would incur no such costs in the case of workers who are now exposed above the current PEL of 100 ug/m^3.
- OSHA fails to estimate the costs for the proposed change in monitoring protocol from the current ACGIH to ISO/CEN.
- OSHA estimates benefits involving several illnesses that have not been adequately demonstrated to be caused by silica exposures, particularly for today's workers at the low levels of cumulative exposure at issue under the existing and proposed PELs.
- OSHA ignores the fundamental differences between a significant risk determination and a benefit-cost analysis (*e.g.*, by applying risk relationships derived at high historical exposure levels and by assuming all workers are exposed to silica for a full 45-year working lifetime rather than for the median duration of exposure in the real world, which is less than 10 years).
- OSHA estimates that the monetary value of avoiding the morbidity associated with any silica-related illness is within a range of $62,000 to $5.1 million per case. The upper end of this range and the $2.5 million midpoint value that the Agency uses as a point estimate for its benefits analysis are far too high. A more accurate estimate of $317,000 per case of silicosis avoided was developed by the Agency's own contractor (Miller, 2005).

> **The great majority of the potential health benefits for General Industry workers from OSHA's proposed silica standard can be realized if all General Industry employers are brought into compliance with the existing PEL of 100 µg/m^3. OSHA could accelerate this result by providing compliance assistance and effective enforcement. Any potential further health benefits from reducing the PEL below 100 µg/m^3 and/or by switching to the ISO/CEN monitoring protocol would be relatively small or non-existent and would come at an excessively high cost.**