

*With 12 months remaining until the enforcement date, a large majority of foundries appear to have made no progress toward compliance – but there is a workable strategy.*

# Mitigating the Effect of OSHA's Silica Rule

By Trent Blake

Sand casting foundries face a particular environmental health risk concerning airborne silica: the sand that is their medium for forming parts is the source of a dangerous toxin, one that the U.S. Occupational Health and Safety Administration (OSHA) asserts may cause lung cancer, silicosis, chronic obstructive pulmonary disease and kidney disease in workers. After decades of consideration and discussion, in March 2016 OSHA issued a final rule to minimize workers' exposure to respirable crystalline silica.

The rule became effective on June 23, 2016, but most of its components will not be enforced until June 23, 2018. That means sand-casting foundries have 12 months to achieve compliance. Achieving that compliance requires a strategy, a strategy that properly identifies a foundry's exposure to airborne silica and anticipates how the risk can be properly contained.

The critical insight that will mitigate a foundry's risk is that OSHA's new rule is written as a "performance based standard", meaning that OSHA expects industrial operations to make all feasible efforts to reduce workers' silica exposures. However, the means of compliance are not specifically detailed.

Following that point are two facts that define compliance with the new OSHA standard: The Action Level (the level of airborne silica that requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring) is 25  $\mu\text{g}/\text{m}^3$ ; the Personal Exposure Limit (PEL) is 50  $\mu\text{g}/\text{m}^3$ .

The one-year window now remaining is a critical period for foundries to assess their risks and take steps to achieve compliance with the new OSHA standard.

There are some immediate problems to be addressed. First, they must recog-

nize that the new workplace silica PEL is half that of the previous standard, and many of these operations have struggled to comply with the previous PEL. Next, they must recognize that new standard prohibits most forms of compressed-air cleanup and dry sweeping, activities that are used extensively now to contain airborne silica in metalcasting operations.

Also, the new standard requires metalcasters to prove that they have implemented all feasible engineering and work practice controls to reduce silica exposure to employees.

It is possible to achieve compliance with the new OSHA standard. A comprehensive sampling, mapping and auditing process (such as the approach we have developed and applied) takes about three months to implement, from start to finish. This is just the data-gathering and recommendation phase of compliance.

Next, the foundry must implement the recommendations developed in that process. Many of these recommendations typically will be in-house projects, — housekeeping and maintenance — with very quick implementation times.

However, the study may determine that engineering solutions are feasible or that there is a need for additional make-up air or additional dust collection. In cases that call for adopting new equipment to contain airborne silica, the lead-time could be six or more months for procurement and installation.

Keramida Inc. has developed a spe-

