



<<[Stakeholder Meetings](#)

**QUESTIONS FOR STAKEHOLDERS ON THE DEVELOPMENT OF A
COMPREHENSIVE CRYSTALLINE SILICA STANDARD -- CHICAGO JUNE 2, 3 AND
SAN FRANCISCO JUNE 30, 1999**

I. WHY IS OSHA CONSIDERING A COMPREHENSIVE CRYSTALLINE SILICA STANDARD?

Crystalline silica is a term for the chemical compound silicon dioxide when it occurs as a crystalline structure. Crystalline silica occurs naturally in many forms, but the three main forms are quartz (which is the most abundant), cristobalite, and tridymite. Crystalline silica is found in many mineral deposits and is used in a variety of processes and industries.

Occupational exposure to crystalline silica dust causes or contributes to the development of silicosis, lung cancer, pulmonary tuberculosis, and chronic bronchitis. Increased incidences of extrapulmonary diseases such as autoimmune disease are also believed to be attributable to occupational exposure to crystalline silica dust.

OSHA has enforced its Permissible Exposure Limits (PELs) for crystalline silica (29 CFR §1910.1000; 29 CFR §1915.1000; 29 CFR §1926.55) for over 25 years and, in 1996, initiated a Special Emphasis Program for crystalline silica that involves extensive public outreach to encourage the implementation of silicosis prevention programs and inspections that are designed to reduce the incidence of silicosis. Yet OSHA continues to find evidence of significant overexposures to crystalline silica, a lack of effective workplace controls in many facilities, and inadequate medical evaluations of employees.

According to the National Center for Health Statistics, from 1968-1992 there were at least 14,313 deaths in the United States for which silicosis was either a causal or contributing factor. NIOSH has just completed a report from a surveillance study designed to identify confirmed cases of silicosis. Looking for new cases between 1993-95, NIOSH found 604 known cases of silicosis in just seven states (Ohio, Illinois, Michigan, New Jersey, North Carolina, Texas, and Wisconsin). The cases of silicosis were linked to employment in a wide range of industries, including: construction; transportation; retail trade; primary metal industries; production of stone, clay, glass, and concrete products;

fabricated metal products; and others. The primary occupations of the victims included precision hand molders and shapers, brick and stone masons, laborers and construction trades, supervisors, specialty trades, service occupations, and others. The Centers for Disease Control estimate that there are about 300 deaths annually due to silicosis, three-fourths of which are estimated to occur among workers in general industry, construction, and maritime. OSHA's Office of Occupational Medicine recently examined 300 workers at a foundry where significant overexposures to silica were found. At least 50 of these workers were found to have clinical findings indicating a diagnosis of silicosis.

All of the diseases attributable to occupational exposure to crystalline silica are preventable. OSHA believes that establishing a comprehensive health standard on crystalline silica may be necessary to adequately protect workers from these diseases. Although OSHA currently has PELs for crystalline silica, the Agency has no minimum requirements for medical screening, exposure assessment, or other protections for employees exposed to crystalline silica.

OSHA believes that its current PELs for crystalline silica deserve reexamination. Recent scientific evidence indicates that the current PELs may not be adequate to protect workers from a significant risk of silicosis, lung cancer, and other diseases. Epidemiological studies suggest that exposure to crystalline silica at the current PEL may be associated with a lifetime silicosis risk of 35 to 47 percent, assuming exposure over a 45-year working life. Additionally, the International Agency for Research on Cancer, after evaluating much scientific evidence, recently classified crystalline silica as a known human carcinogen. Therefore, OSHA is conducting quantitative risk assessments to better characterize the risks of silicosis and lung cancer.

II. PUBLIC PROCESS

As part of the pre-proposal public outreach process, OSHA is scheduling meetings with stakeholders to discuss issues that will help us develop a proposal. OSHA has identified stakeholders who represent employers and employees, State and local governments, other federal agencies, and the safety and health professions.

OSHA is also gathering information in other ways, including:

- visiting workplaces to gather exposure data and control information;
- preparing quantitative risk assessments on the major health effects of silica exposure;
- evaluating the relevant scientific literature; and
- attending and participating in scientific workshops on key scientific and technical issues.

In addition, before publishing a proposal, OSHA will:

- continue dialogue with stakeholders and the Agency's advisory committees;
- conduct economic and risk analyses;

- continue to review the extensive research on silica-related diseases;
- develop the regulatory text;
- develop the preamble and other supplementary analyses;
- assess the impact of a draft proposed rule on small businesses and, depending on the results of that assessment, convene a small business panel under the Small Business Regulatory Enforcement Fairness Act (SBREFA);
- submit the draft proposed rule for Department of Labor review and clearance; and
- submit the draft proposed rule to the Office of Management and Budget for Executive Order 12866 review.

Each of these activities take time. OSHA will not begin the SBREFA process until it has at least developed a preliminary draft regulatory text and identified industries where there may be impacts on small businesses. The SBREFA process takes a minimum of two months, after which OSHA must respond to the comments of the SBREFA panel. After this is done, OSHA must submit the draft proposed rule to OMB for an additional review that lasts three months. Only after each of these steps has been completed is a proposed rule ready for publication in the **Federal Register**. Our timetable for publishing a proposed crystalline silica standard is ambitious. In the latest regulatory agenda, OSHA indicated that a proposed standard would be published in the year 2000.

Once a proposal has been published, OSHA will undertake another extensive effort to obtain public input through public comment and the agency's informal hearing process. Informal public hearings allow for extensive comment and questioning on relevant subjects by the scientists, economists, safety and health professionals, representatives of potentially affected industries, workers and other interested parties who participate. After the hearings end, participants are given additional time to submit comments and briefs.

OSHA is meeting with various stakeholders at this time to seek their individual input on key questions that must be addressed in whatever proposed crystalline silica standard OSHA publishes. These discussions are occurring early in the standard development process to give OSHA the benefit of stakeholder experience as the Agency drafts its proposal.

III. KEY ISSUES FOR DISCUSSION

OSHA has identified four broad issues for discussion at the stakeholder meetings. For each of these broad issues, there are specific questions OSHA would like you to consider. At the same time, OSHA welcomes any comments you may have regarding your individual experiences with protecting workers from exposure to crystalline silica.

ISSUE 1 -- SCOPE

OSHA is interested in learning from you which operations involve exposures to crystalline silica in general industry, construction, and maritime; how similar kinds of operations compare in different industries with respect to silica exposures; and how approaches for exposure control and monitoring should be designed to address these differences.

QUESTIONS:

1. What operations involve exposures to crystalline silica in your plant?
2. How do exposures to crystalline silica compare in general industry, construction, and maritime for similar operations (**e.g.**, abrasive blasting in construction vs. general industry, or fixed locations vs. transient locations)? Are control measures similar? How do exposure assessment and medical surveillance practices differ?
3. What kinds of work are performed by contract labor that results in exposures to crystalline silica at either fixed industrial facilities or on construction sites? How do employers protect workers when work involving crystalline silica exposure is contracted out? Do the approaches differ depending on industry? If so, why? What protections are typically provided by the host employer in those situations? What protections are typically provided by the contract employer?

ISSUE 2 -- CONTROLLING EXPOSURES TO CRYSTALLINE SILICA

OSHA is interested in learning of your experiences in controlling exposures to crystalline silica. Some of the control methods that have been used by employers for various work operations include:

- using local exhaust ventilation or equipment with HEPA filter dust collection systems;
- using wet methods or other dust suppression agents when performing certain operations;
- using substitutes for materials that contain crystalline silica; and
- using enclosures or isolation of processes that produce crystalline silica dust.

QUESTIONS:

1. What engineering control methods are you using now? How effective have you found those methods to be in controlling exposures to crystalline silica? In what situations have you found it necessary to use respiratory protection to provide adequate protection?
2. For what operations in general industry, construction, and maritime might there be significant bystander exposures? Do you establish regulated areas for work involving crystalline silica exposures to limit bystander exposures?
3. Are there substitutes for crystalline silica that can be used in your industry? Would using these substitutes be practical in your operations? If so, why? If not, why not? What is your experience with the safety of these substitutes?

4. What training and information do you provide workers to inform them of the hazards of crystalline silica exposures? Do you provide written information? How often do you repeat this training?

ISSUE 3 -- MONITORING AND SAMPLING

OSHA is currently examining such issues as when and how often to require sampling, and who is qualified to conduct sampling. Your experiences with these and other issues will be helpful as OSHA drafts the monitoring and sampling provisions of the standard.

QUESTIONS:

1. How often is exposure monitoring done now?
2. How do you determine which operations/employees will be monitored for exposure to crystalline silica? Do you use the results of monitoring to represent the exposures of other employees who were not monitored?
3. Who conducts monitoring? Are consultants used?
4. How are labs selected for analyzing sampling results? Is it difficult to locate a qualified lab for analyzing sampling results? What analytical method does your lab use (i.e., X-ray crystallography, infrared)?
5. What are the costs of crystalline silica monitoring programs at various kinds of workplaces?

ISSUE 4 -- SCREENING AND SURVEILLANCE OF EXPOSED WORKERS FOR ADVERSE HEALTH EFFECTS

OSHA is interested in learning of existing medical screening and surveillance programs designed to detect early stages of disease among exposed employees and to monitor the incidence of adverse health effects associated with exposure to crystalline silica. OSHA is particularly interested in how employers are currently identifying workers who have adverse health effects, what barriers there are to early identification of the disease, and how employers handle employees who exhibit early signs or symptoms of disease.

QUESTIONS:

1. What kind of screening and surveillance of silica-exposed workers does your company or organization do?
2. How do current screening and surveillance programs follow employees who change jobs? How do these programs deal with contract

employees?

3. From your perspective, do any barriers exist for both employers and employees that discourage participation in conducting screening and surveillance measures related to the adverse health effects from silica? What, if anything, might encourage more screening and surveillance by both employers and greater participation by employees?
 4. What happens to employees who are identified as having early signs or symptoms of silicosis or other diseases? Are they removed or barred from working in jobs with crystalline silica exposures?
 5. From your perspective, what have you found is the most effective screening method for determining the early signs of adverse health effects from silica exposure and what have you found to be the most effective intervals for screening? How did you determine these?
 6. How do you screen and conduct surveillance for acute silicosis?
 7. How are your company's surveillance data collected, interpreted and shared among employees in your industry?
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