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DOL/OSHA

RIN: 1218-AB70

Publication ID: Fall 2010

Title: Occupational Exposure to Crystalline Silica

Abstract: Crystalline silica is a significant component of the earth's crust, and many workers in a wide range of industries are exposed to it, usually in the form of respirable quartz or, less frequently, cristobalite. Chronic silicosis is a uniquely occupational disease resulting from exposure of employees over long periods of time (10 years or more). Exposure to high levels of respirable crystalline silica causes acute or accelerated forms of silicosis that are ultimately fatal. The current OSHA permissible exposure limit (PEL) for general industry is based on a formula proposed by the American Conference of Governmental Industrial Hygienists (ACGIH) in 1968 (PEL=10mg/cubic meter/(% silica + 2), as respirable dust). The current PEL for construction and shipyards (derived from ACGIH's 1970 Threshold Limit Value) is based on particle counting technology, which is considered obsolete. NIOSH and ACGIH recommend 50µg/m3 and 25µg/m3 exposure limits, respectively, for respirable crystalline silica. Both industry and worker groups have recognized that a comprehensive standard for crystalline silica is needed to provide for exposure monitoring, medical surveillance, and worker training. The American Society for Testing and Materials has published recommended standards for addressing the hazards of crystalline silica. The Building Construction Trades Department of the AFL-CIO has also developed a recommended comprehensive program standard. These standards include provisions for methods of compliance, exposure monitoring, training, and medical surveillance. OSHA is currently developing a NPRM.

Agency: Department of Labor(DOL)**Priority:** Economically Significant**RIN Status:** Previously published in the Unified Agenda**Agenda Stage of Rulemaking:** Proposed Rule Stage**Major:** Yes**Unfunded Mandates:** State, local, or tribal governments**CFR Citation:** [29 CFR 1910](#); [29 CFR 1915](#); [29 CFR 1917](#); [29 CFR 1918](#); [29 CFR 1926](#)**Legal Authority:** [29 USC 655\(b\)](#); [29 USC 657](#)**Legal Deadline:** None

Statement of Need: Workers are exposed to crystalline silica dust in general industry, construction, and maritime industries. Industries that could be particularly affected by a standard for crystalline silica include: Foundries, industries that have abrasive blasting operations, paint manufacture, glass and concrete product manufacture, brick making, china and pottery manufacture, manufacture of plumbing fixtures, and many construction activities including highway repair, masonry, concrete work, rock drilling, and tuckpointing. The seriousness of the health hazards associated with silica exposure is demonstrated by the fatalities and disabling illnesses that continue to occur. In 2005, the most recent year for which data is available, silicosis was identified on 161 death certificates as an underlying or contributing cause of death. It is likely that many more cases have occurred where silicosis went undetected. In addition, the International Agency for Research on Cancer has designated crystalline silica as carcinogenic to humans, and the National Toxicology Program has concluded that respirable crystalline silica is a known human carcinogen. Exposure to crystalline silica has also been associated with an increased risk of developing tuberculosis and other nonmalignant respiratory diseases, as well as renal and autoimmune diseases. Exposure studies and OSHA enforcement data indicate that some workers continue to be exposed to levels of crystalline silica far in excess of current exposure limits. Congress has included compensation of silicosis victims on Federal nuclear testing sites in the Energy Employees' Occupational Illness Compensation Program Act of 2000. There is a particular need for the Agency to modernize its exposure limits for construction and shipyard workers, and to address some specific issues that will need to be resolved to propose a comprehensive standard.

Summary of the Legal Basis: The legal basis for the proposed rule is a preliminary determination that workers are exposed to a significant risk of silicosis and other serious disease and that rulemaking is needed to substantially reduce the risk. In addition, the proposed rule will recognize that the PELs for construction and maritime are outdated and need to be revised to reflect current sampling and analytical technologies.

Alternatives: Over the past several years, the Agency has attempted to address this problem through a variety of non-regulatory approaches, including initiation of a Special Emphasis Program on silica in October 1997, sponsorship with NIOSH and MSHA of the National Conference to Eliminate Silicosis, and dissemination of guidance information on its Web site.

Anticipated Costs and Benefits: The scope of the proposed rulemaking and estimates of the costs and benefits are still under development.

Risks: A detailed risk analysis is under way.

Timetable:

Action	Date	FR Cite
Completed SBREFA Report	12/19/2003	
Initiated Peer Review of Health Effects and Risk Assessment	05/22/2009	
Completed Peer Review	01/24/2010	
NPRM	04/00/2011	

Regulatory Flexibility Analysis Required: Yes**Government Levels Affected:** Federal**Small Entities Affected:** Businesses**Federalism:** Yes**Included in the Regulatory Plan:** Yes**RIN Data Printed in the FR:** Yes**Agency Contact:**

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