

<b>Midland Engineering Co., Inc.</b> Safety Management System			Doc No:	SILICA
			Initial Issue Date	12/08/15
			Revision Date:	Initial Version
<b>Chapter 39-Silica</b>			Revision No.	0
			Next Review Date:	12/08/16
Preparation: Safety Mgr	Authority: President	Issuing Dept: Safety	Page:	Page 1 of 4

## PURPOSE

The purpose of this program is to ensure that the hazards of silica are evaluated and the information concerning its hazards is communicated.

## SCOPE

This procedure applies to all operations involving Midland Engineering Co., Inc..

## REFERENCES

1910.1000, 1910.1200, Hazard Communication Safety Program, Personal Protective Equipment Safety Program and Respiratory Protection Safety Program

## INTRODUCTION

Crystalline silica is a common mineral in the earth's crust, and is found in many types of rock including sand, quartz, and granite. Silica is present in both work and non-work environments, and exposure to crystalline silica dust has long been known to cause a disease called silicosis. When you inhale crystalline silica the lung tissue reacts by developing fibrous tissue around trapped silica particles. This condition of the lung is called silicosis.

Due to the extensive use of concrete and masonry products in buildings today, construction workers have a potential exposure to crystalline silica. Operations such as dumping of rock, jack hammering, abrasive blasting, sawing, drilling or demolition of concrete and masonry structures are some of the activities that could produce this exposure.

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## TRAINING, RECORDS, & COMPLIANCE

Midland Engineering Co., Inc. shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area.

Training is required prior to using silica-containing materials or working in an environment known to contain airborne concentrations of Silica. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and safety data sheets.

Periodic refreshers training is required as deemed necessary by the company Safety Director or OSHA directives.

## EXPOSURE

Full shift personal samples shall be representative of the employee's regular, daily exposure to silica. An employee's exposure to silica shall not exceed the 8-hour Time Weighted Average given for that substance any 8-hour work shift of a 40-hour work week.

## ENGINEERING AND WORK PRACTICE CONTROLS:

Engineering controls such as ventilation or wet methods must be used to control silica-containing dusts. Document and evaluate any engineering and work practice controls in place intended to reduce exposure to respirable crystalline silica, such as:

1. Location of employee(s) with respect to dust generation source.
2. Isolation (e.g., control room, enclosures, or barriers).
3. Local exhaust ventilation (LEV) systems.
4. Wet methods for cutting, chipping, drilling, sawing, grinding, etc.
5. Use of HEPA-equipped vacuums or wet sweeping for cleaning.
6. Companies should be advised not to use compressed air for cleaning silica contaminated surfaces.
7. Substitution with non-crystalline silica material.
8. Use of tools with dust collecting systems.

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## PERSONAL PROTECTIVE EQUIPMENT

Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact. The company shall ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

Personal protective equipment such as gloves, coveralls and eye protection should be used to control silica exposures. Reference Midland Engineering Co., Inc. Personal Protective Equipment Safety Program.

Respirators must be selected based upon measured exposure levels and the assigned protection factor of respirators. The company shall identify and evaluate the respiratory hazard(s) in the workplace; this evaluation shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where the company cannot identify or reasonably estimate the employee exposure, the company shall consider the atmosphere to be IDLH.

Reference Midland Engineering Co., Inc. Respiratory Protection Program.

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## HEALTH EFFECTS

Exposure to silica has been shown to cause silicosis, lung cancer, pulmonary tuberculosis and other airway diseases. Inhalation of respirable crystalline silica particles has long been known to cause silicosis, a disabling, non-reversible and sometimes fatal lung disease. Respirable crystalline silica also causes lung cancer. The International Agency for Research on Cancer has designated crystalline silica as carcinogenic to humans, and the U.S. National Toxicology Program has concluded that respirable crystalline silica is known to be a human carcinogen. The National Institute for Occupational Safety and Health (NIOSH) has also recommended that respirable crystalline silica be considered a potential occupational carcinogen. In addition, exposure to respirable crystalline silica has been associated with other respiratory diseases, such as chronic obstructive pulmonary disease (including bronchitis and emphysema), as well as kidney and immune system diseases.