

# Chapter 4

## Air Sampling

### ⇒ ⇒ ⇒ **IF YOUR SHOP USES SILICA SAND, YOU MUST:**

⇒ Evaluate employee exposure to crystalline silica.

⇒ Notify workers of their monitoring results.

⇒ Maintain air monitoring results.

### ⇒ ⇒ ⇒ **TAKE ACTIONS TO DECREASE THE SILICA EXPOSURE HAZARDS**

The results of the air sampling will be your guide for further action. If the results are above the PEL (permissible exposure limit), various safety measures are needed. Identify the source of the exposure to silica dust, and investigate control methodologies. See Chapter 5, Cutting Airborne Silica.

*Please refer to:  
Appendix III for information on Air Contaminants*

### ⇒ ⇒ ⇒ **WHY ARE THESE STEPS IMPORTANT?**

It is not always easy to tell whether you or other shop employees are being exposed simply by looking around the shop. Severe silicosis cases have occurred at companies that look quite clean. Remember, it is the respirable silica dust - the dust you cannot see - that enters the lung. People being affected do not know they are developing chronic silicosis until it is too late. Then the effects can be devastating for both you and the company.

Air sampling is the only way to measure an employee's exposure to respirable crystalline silica. Air sampling results will show whether your working environment must be made safer.

**By itself, air sampling will do nothing to make your shop safer.** If air sampling results show overexposure to silica is occurring (above the PEL), immediately take steps to protect yourself while the exposure is being controlled.

**ALL COMPANIES USING SILICA SAND SHOULD READ THIS CHAPTER.**

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### ⇒ ⇒ ⇒ WHAT ARE THE LEGAL REQUIREMENTS?

#### ⇒ Air Sampling

OSHA and MIOSHA require companies using silica to conduct air sampling at least once. This is called the initial determination. Once the initial determination has been made, further monitoring may be necessary if:

- ⇒ the process or task changes.
- ⇒ materials change.
- ⇒ engineering controls are installed or modified.

If air sampling results show that the amount of silica in the air exceeds the PEL, then the company must determine and implement, when feasible, engineering and administrative controls. When these controls are not feasible, or cannot lower the employee's exposure to below the PEL, protective equipment or any other protective measures must be used.

Employees should be notified of any air monitoring results that are representative of their exposure to a hazardous substance such as silica. Such information must be made available to any employee or their authorized representative (e.g., their physician, union rep, etc.).

Generally, all employee exposure records must be maintained for not less than 30 years.

*Please refer to:*  
*Appendix V for MIOSHA Occupational Health Standard Part*  
*470 - Employee Medical Records and Trade Secrets*

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### ⇒ ⇒ ⇒ AIR SAMPLING

### WHAT TO DO

|   |   |   |
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| 1 | Choose whom you want to conduct the air sampling.   | The basic choices are: private industrial hygiene consultants, MIOSHA Onsite Consultation Division, or your workers' compensation provider. <b>A list of industrial hygiene consultants is provided in Appendix VI.</b> |
| 2 | Meet with the industrial hygienist and your H&S Committee to plan your air sampling strategy.   | Make sure everyone understands what services will be expected and what the cost will be.  |
| 3 | With everyone involved, make a list of the jobs, work areas and people to be included in the air sampling program.  | Include all work areas and a representative number of personnel where silica sand is handled.   |
| 4 | While the air sampling is being performed, help out with any on-site assistance.  | Talk with your fellow shop employees about the importance of cooperating with the industrial hygienist during the air sampling.   |
| 5 | When the test results are received, look them over and discuss them with everyone involved. Do not discuss individual employee exposure results with other employees. | Make sure that the industrial hygienist provides a complete written report. Ask about any information that is unclear to you.   |
| 6 | If the results are higher than the current Permissible Exposure Limit (PEL), additional control measures are required.  | These measures might include alternative blasting medias, engineering controls, revised housekeeping, personal hygiene and work practices.  |
| 7 | Inform employees of air monitoring results representative of their exposure   | MIOSHA and OSHA require that workers be informed in writing if they ask.  |
| 8 | File the sampling results, the industrial hygienist's written report and your notes so you can find them when they are needed.  | OSHA and MIOSHA require that this information be kept on file and available for 30 years.   |

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The American Industrial Hygiene Association (AIHA) is an international organization that serves the needs of occupational and environmental health professionals practicing industrial hygiene in industry, government, labor, academic institutions, and independent organizations.

As described on the AIHA website, “*Industrial Hygiene: Science and art devoted to the anticipation, recognition, evaluation, prevention, and control of those environmental factors or stresses arising in or from the workplace which may cause sickness, impaired health and well being, or significant discomfort among workers or among citizens of the community.*” AIHA further describes an industrial hygienist: Industrial hygienists are scientists and engineers committed to protecting the health and safety of people in the workplace and the community.

**Appendix VI** contains a list of companies, who are AIHA members, who perform air sampling. Michigan Industrial Hygiene Consultants and their contact information can be found in Appendix VI or by accessing the AIHA webpage: [www.aiha.org/Content/AccessInfo/consult/consultantsearch.htm](http://www.aiha.org/Content/AccessInfo/consult/consultantsearch.htm) Select Michigan as the State and USA as the Country.

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### **Notes**