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## Silica—Trouble in the Workplace

From construction workers to jewelry cleaners silica exposure is a serious problem. Of the two million workers routinely exposed 100,000 of them are in high-risk jobs that increase the likelihood of developing serious complications from their exposures. The most common forms of crystalline silica are quartz, cristobalite and tridymite. When cutting, chipping, drilling or blasting particles are introduced into the air and are easily inhaled into the lungs. When the particles enter the respiratory system the lungs react by forming scar tissue. Increased airborne silica exposure increases the amount of scar tissue. As scar tissue continues to develop to encapsulate the invaders the lungs lose vital surface area decreasing their ability to take up oxygen. This disease process is known as silicosis and it is one of the more serious complications from

### Complications from Silica Exposure

Silicosis  
Lung Cancer  
Pulmonary Tuberculosis  
Airway Disease  
Shortness of Breath

routine silica exposure. There are three classifications to this disease depending upon the degree of exposure over time. Chronic / classic silicosis occurs over a fifteen to twenty year time period of low to moderate exposure. Accelerated silicosis can occur after five to ten years of high exposures while Acute silicosis can occur in as little as

a few months to two years following exposure to extremely high concentrations of silica.

The Occupational Health and Safety Administration has established a PEL for silica and currently requires a respirator protection program.

[Click here](#) for a full copy of the OSHA Fact Sheet on Crystalline Silica Exposure.

Additional resources are available through [NIOSH Publications located on the Center for Disease Controls web site.](#)



Nearly 2 million workers are regularly exposed to Silica on the job.

## Exposed Workers

### Construction

- Sand blasting
- Jack hammering
- Rock/well drilling
- Concrete mixing
- Concrete drilling
- Brick/concrete block cutting/sawing
- Tuck pointing
- Tunnel operations

### General Industry

- Abrasive blasting to
  - Jewelry
  - Foundry castings
  - Glass etching/frosting
  - Preparation for repainting
- Manufacturing of
  - Cement/brick
  - Asphalt pavement
  - China/ceramic
- Tool/die industry
- Steel/foundry industry

## Analyses of the Month

### Lead, Asbestos and Silica

For the month of June, DataChem is offering **10% off our Lead, Asbestos and Silica analyses.**

### Solvent Scan

For the month of June, DataChem is offering **2 for the price of 1 on our solvent panel.**

To take advantage of the offer simply refer to the newsletter in your analytical request. Discount is only available at our Salt Lake facility.

For a complete list of our Salt Lake lab services [click here.](#)

## Solvent Panel—Quantitative, Cost Effective Analysis of Airborne Compounds using a Charcoal Tube

DataChem's solvent panel provides quantitative analysis of thirty compounds. It's a great way to monitor for known contaminants or to identify unknowns. The analytes included in the panel are:

Benzene	Cyclohexene	Methyl isobutyl ketone	Tetrachloroethene
n-butyl alcohol	1,3-dichlorobenzene	Naphthalene	Tetrahydrofuran
n-butyl acetate	1,2-dichlorobenzene	n-octane	Toluene
2-ethoxyethanol acetate	1,4-dichlorobenzene	2-pentanone	Trichloroethene
Chlorobenzene	1,2-dichloroethane	n-propyl acetate	Total methyl styrenes
Chloroform	Ethylbenzene	Styrene	Total xylenes
Cumene (isopropyl benzene)	n-hexane	1,1,1-trichloroethane	
Cyclohexane	Methyl ethyl ketone (MEK)	1,1,2-trichloroethane	

Our solvent panel runs \$110. **The Salt Lake lab is currently running a 2 for 1 special on this panel.** Refer to this newsletter when contacting your Project Manager or sending samples.

## Upcoming Tradeshows, Conferences and Course Training

- [AIHce 2007 Meth Lab Symposia, June 3, 2007, Philadelphia, PA](#)
- [AIHce 2007, June 4-6, 2007 Philadelphia, PA](#)—will you be attending this year? Visit us at [www.datachem.com/gift.pdf](http://www.datachem.com/gift.pdf) to claim your free gift!

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