

# Silica

**Problem:** Dusts containing crystalline forms of silica (quartz, cristobalite and tridymite) may cause silicosis. Interferences occur in IR and visible spectrometry methods to give false values.

**Solution:** DataChem Laboratories, Inc. offers analysis for Silica using NIOSH Method 7500 by X-Ray Diffraction.

NIOSH Method 7500 is able to speciate the different crystalline forms of free silica and differentiate from most interferences in bulk or air filter samples.

- ◆ Amorphous silica does not interfere
- ◆ Secondary peaks may allow quantitation if interferences are present
- ◆ Silicate interferences may be removed with acid pre-treatment
- ◆ Total weight and silica analyses may be done on same filter

Limit of Detection:	Filter:	Bulks:
	Quartz—10 µg	0.8%
	Cristobalite—20 µg	1%
	Tridymite—20 µg	1%

Sampling Requirements: Volume: Up to 1000 L  
Flow Rate: Prescribed by type of cyclone

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**For a complete list of our services,  
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DataChem Laboratories, Inc. was previously the Analytical Chemistry Department of the Utah Biomedical Test Laboratory (UBTL). UBTL was founded in 1971 as part of the University of Utah Research Institute to perform artificial heart research. When Federal funding for heart research ended in 1974, UBTL established an analytical chemistry laboratory. In 1983 UBTL became a privately held company, and in 1986 incorporated its Analytical Chemistry Department into a new entity—DataChem Laboratories, Inc.

DataChem was one of the first private laboratories in the U. S. to offer industrial hygiene testing utilizing NIOSH and OSHA methods, and has served NIOSH as a contract laboratory continuously since 1974. In the early 1980's, we entered the expanding environmental analytical chemistry arena to provide support for the growing Environmental Protection Agency (EPA), Department of Defense (DOD), and private industry regulatory compliance needs.

DataChem Laboratories, Inc. is a premier provider of industrial hygiene, environmental, radiochemistry, and mycology/microbiological analytical testing services with laboratories located throughout the United States. DataChem has earned a nationwide reputation for providing high quality and legally defensible data, which aids DataChem's government and private clients in efforts to promote human health and preserve the environment.

### Environmental Project Experience

DataChem is a NELAC accredited laboratory providing environmental analytical services to government and private clientele such as the EPA, Departments of Defense and Energy, and numerous environmental engineering firms. In supporting environmental investigation and monitoring programs, DataChem performs a full range of organic and inorganic analyses using SW-846 and EPA methodologies on a wide range of sample matrices including groundwater, surface water, wastewater, soil, sludge, and hazardous waste.

### Industrial Hygiene Project Experience

DataChem is one of the original laboratories accredited by the American Industrial Hygiene Association (AIHA) and has been the National Institute for Occupational Safety and Health (NIOSH) contract laboratory since 1974. With that experience, DataChem offers a comprehensive array of both NIOSH and OSHA analytical methods, as well as EPA, ASTM, AOAC, and innovative methods developed by DataChem that may be adapted to situation-specific requirements in support of industrial hygiene programs, indoor air quality assessment, odor detection, and other types of air testing.

### Mycology Project Experience

In response to the increase in public awareness of the hazards to human health from mold and other microbiological organisms, DataChem provides analytical services to assist with the detection and removal efforts of site investigators. DataChem is EMPAT accredited by the American Industrial Health Association (AIHA) and offers mycological, endotoxin, and bacterial analyses, including microbial culture techniques, spectrophotometry, microscopy, and GC/MS methodology, on a variety of sample matrices.

### Radiochemistry Project Experience

Paragon Analytics, a division of DataChem, has been a leading provider of radiochemistry, mixed waste, and environmental analytical services for nearly 15 years and is licensed by the State of Colorado to receive and handle radioactively contaminated samples. Paragon has supported numerous Department of Energy decommissioning, remediation, and monitoring projects as well as analyzing potentially hazardous and/or radioactive samples from groundwater monitoring, landfill evaluation, and RCRA closures.

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