Powertech now offers respirable dust and crystalline silica testing to evaluate air filter samples collected from industrial worksites. Test results enable assessment of the exposure levels of silica containing dust so suitable controls can be put in place to protect field workers.

Many workers in construction, mining, and general industry are vulnerable to respirable crystalline silica (RCS) exposure from materials such as concrete, rock, brick and mortar. Quartz is the predominant form of crystalline silica, with cristobalite and tridymite being less common forms. An increasing number of silicosis, lung cancer and kidney disease cases due to silica dust exposure from building demolition and abrasive blasting are being reported by OSHA every year. To ensure the safety of workers and the general public, the concentration of respirable dust and crystalline silica in the air must be monitored and evaluated at worksites. In British Columbia, the occupational exposure limit (OEL) for crystalline silica during an eight-hour work shift is 0.025 mg/m³.

**What is Silicosis?**

Silicosis is caused by inhalation of free crystalline silica dust. Thickening and scarring of lung tissue may occur when high concentrations of silica dust accumulate in the lungs. Chronic silicosis is a known cause of lung cancer. Exposure control plans are required by the WorkSafeBC Occupational Health and Safety Regulation to mitigate exposure to silica dust.

**Methodology**

Powertech Labs provides state-of-the-art RCS analysis according to the National Institute for Occupational Safety and Health (NIOSH) method 7602 (Infrared Spectroscopy) and particulate matter according to NIOSH 600. The combination of these two methods enables determination of the percentage of silica in the particulate captured during sampling. Powertech is also expanding its RCS analysis capabilities to include NIOSH 7500 (X-Ray Diffraction).

**Quality Assurance**

Powertech Labs regularly participates in the Industrial Hygiene Proficiency Analytical Testing Program (IHPAT) administered by the American Industrial Hygiene Association (AIHA). Powertech is an ISO 9001 accredited facility. For every batch of field samples, multiple blanks and quality control (QC) samples from the National Institute of Standards and Technology (NIST) are analyzed and reported. These measures provide our clients with complete confidence and trust.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Method</th>
<th>Technique</th>
<th>Limit of Detection (µg)</th>
<th>Reporting Limit * (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respirable Particulates</td>
<td>NIOSH 0600</td>
<td>Gravimetric</td>
<td>30</td>
<td>0.060</td>
</tr>
<tr>
<td>Respirable Crystalline Silica</td>
<td>NIOSH 7602</td>
<td>FT-IR</td>
<td>5 (quartz)</td>
<td>0.010</td>
</tr>
</tbody>
</table>

*Based on typical sampling volume of 500 L

**FOR MORE INFORMATION CONTACT:**

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**ABOUT POWERTECH LABS:**

Powertech Labs Inc. is one of the largest testing and research laboratories in North America, situated in beautiful British Columbia, Canada. Our 11-acre facility offers 15 different testing labs for a one-stop-shop approach to managing electrical utilities, and testing gas components, pressure vessels and systems.

Outside of the utilities industry, Powertech provides routine testing capabilities, product development, research and consulting services to support an array of industrial-type operations, electrical equipment manufacturers and automotive original equipment manufacturers.

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