CRYSTALLINE SILICA: ASSESSMENT & COMPLIANCE

Engineering Client Success

Overview

Crystalline silica is a naturally occurring mineral found in materials like sand, stone, concrete, and mortar. When these materials are cut, ground, or drilled, fine silica dust particles become airborne and can pose serious health risks to workers in construction, mining, manufacturing, and other industries.

Health Hazards

Exposure to respirable crystalline silica can lead to:

- **Silicosis**: An incurable, often fatal lung disease
- **Lung Cancer**
- **Chronic Obstructive Pulmonary Disease (COPD)**
- **Kidney Disease**

These conditions often develop after years of exposure, even at low levels. Early detection and prevention are critical.

Detection Methods

1. Air Monitoring

- **Personal Sampling Pumps**: Collect air samples in the worker's breathing zone.
- **Gravimetric Analysis**: Laboratory analysis of air samples for crystalline silica.
- **Real-Time Dust Monitors**: Can provide real-time exposure data if validated against laboratory sample results.

2. Site Assessments

- **Workplace Surveys**: Identify silica-generating tasks and assess controls.
- **Visual Inspections**: Evaluate housekeeping and material handling practices.

Engineering Controls to Reduce Exposures

- **Wet Cutting/Drilling**: Reduces dust at the point of generation.
- **Local Exhaust Ventilation**: Captures dust before it spreads.
- **Enclosed Cabins**: Separates machine operators from the contaminated environment

Administrative Controls

- **Training & Signage**: Ensure workers understand risks and protocols.
- **Exposure Time Limits**: Rotate tasks to minimize exposure durations.
- **Housekeeping**: Use HEPA-filtered vacuums. No dry sweeping or compressed air.

Personal Protective Equipment (PPE)

- **NIOSH-Approved Respirators**: Required when exposure exceeds limits.
- **Protective Clothing**: Prevents take-home exposure.

Why It Matters

Compliance with OSHA's **Respirable Crystalline Silica Standard (29 CFR 1926.1153)** is mandatory. Failing to detect and control silica exposure can result in:

- Severe health consequences
- Costly OSH A violations
- Increased legal liability

Your Partner in Silica Safety

TEC offers:

- Workplace Assessments
- Exposure Monitoring
- PPE Recommendations
- Silica Compliance Training

Ensure your team breathes safely. Contact us today to schedule a silica hazard consultation.

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