Our File #:1420-0005.00

October 8, 2024

Attention: USA Customers

Dear: Valued Client **Re: Mine Safety and Health Administration (MSHA)**

Allowable Limits for Airborne Respirable Crystalline Silica

The Mine Safety and Health Administration in the USA has lowered the allowable exposure limits for respirable crystalline silica and published the new rule on April 18, 2024.

Effective dates vary depending on which amendments apply, and enforcement is expected on the following dates:

- June 17, 2024: Final rule into effect
- April 14, 2025: For amendments 21, 22, 25, 26, 27, 30, 31, 34, 35, 36, 38, 39, 42, 43, 46, 47, 50, 51, 54, 55, 59, 60, 63, 64, 68, 69, 73, 74, 77, 78, 81, 82, 83, 86, 87, 90, 91, 94, 95, 98, 99, 102, 103, 106, 107, 110, and 111
- April 8, 2026: For Amendments 4, 5, 8, 9, 13, 14, 17, and 18

The exposure limits of the new MSHA regulations are:

- PEL (permissible exposure limit): 50 micrograms per cubic meter of air (µg/m3) for a full shift, calculated as an 8-hour time-weighted average (TWA) for all miners
- Establishes an action level for respirable crystalline silica at 25 µg/m3 for a full shift, calculated as an 8-hour TWA for all miners

Effectively, the permissible exposure limit has been halved by the latest MSHA standards.

In practice, the latest MSHA standards must be met through a combination of:

1. Effective dust capture/collection at all dust generating processes.
2. Usage of PPE (respirators and PAPRs).
3. Adequate ventilation / dilution.
4. And by controlling conveyor belt carryback.

The above list is considered the four tenets of dust control for typical mining operations.

The BeltWipe product line was developed specifically to address the issue of conveyor belt carryback. Fine dust typically clings to the rubber cover of conveyor belts, and traditional belt scrapers and rotary brushes perform an inadequate job of removing the fine dust before the carryback dust drops off the underside of conveyor belts during the return travel path.

BeltWipe technology is able to clean 87%~96% of the carryback dust from the surface of smooth conveyor belts, while traditional belt scrapers and rotary brushes will typically clean approximately 20%~60% of the carryback dust, if they are brand-new and adjusted properly. The BeltWipe is therefore several orders of magnitude more effective than traditional techniques for controlling conveyor belt carryback.

Without a BeltWipe installed to conveyors on the underside of the return belt just aft of the head pulley, larger particles of carryback will fall by gravity below the entire conveyor beltline and cause anthills that require removal by cleanup staff, and anthills are especially prone to forming below and near any rotating components.

Without a BeltWipe installed to control the conveyor's carryback, smaller particles of dust are spun free from the conveyor belt through contact with the rotating components of the conveyor belt during

the return loop, and smaller dust particles are released and become airborne, and because of their small size and low density can remain suspended and airborne for significant periods of time.

In some cases, airborne small particles of dust are visible to the naked eye as a thin or thick cloud, however in many cases airborne particles are not visible to the naked eye, and it is the finest/smallest particles that are the most dangerous to human lungs because small particulate will lodge in the lungs and cannot be expelled.

Air sampling and air monitoring technologies can determine the levels of airborne respirable crystalline silica dust, however pocket-type point and shoot cameras equipped with a flash also provide at least an indication of the presence of fine dust particles. When utilizing a pocket camera to check for airborne dust, ensure the lens is clean, and take a photo with the flash enabled – airborne fine particles will show as strong halos in the near field of view in the photo, in indoor settings.

Our experience in the dust consulting industry is instructive, because we know that a client's airborne dust concerns cannot be solved unless all four tenets of a functional dust control and personnel protection system are tackled, and the BeltWipe is a highly effective device for control of conveyor belt carryback.

The BeltWipe can also eliminate costly and complex belt flips (turnovers) and related flip component space requirements, for applications where available space is limited.

The BeltWipe is a simple device that requires a connection to the plant's dust collection aspiration piping, or the BeltWipe's suction requirements can be satisfied by installation of a small, dedicated local dust collector to create the combination of suction/air volume for one or more BeltWipes.

The BeltWipe is also effective at cleaning up the entire beltline – removal of carryback dust prevents buildup of sticky materials on rotating components and can eliminate belt tracking issues and return-path vibrations due to ovalization and buildup on return path rotating components.

The BeltWipe is a solution to controlling conveyor belt carryback:

- ✓ The BeltWipe can be fitted to conventional open-style conveyors, instead of utilizing costly and problem-prone closed/ventilated conveyors.
- ✓ The BeltWipe requires no power connection, rotary brush motor, or automation system monitoring/connection.
- ✓ The BeltWipe is the highest-efficiency conveyor belt cleaner in the marketplace.
- ✓ The BeltWipe does not require a wetting agent or messy wet cleanup methods.
- ✓ The BeltWipe has no rotating components, for simplicity.

More information on the MSHA respirable crystalline silica regulations can be found at https://www.msha.gov/regulations/rulemaking/silica and https://www.federalregister.gov/documents/2024/04/18/2024-06920/lowering-miners-exposure-to-respirable-crystalline-silica-and-improving-respiratory-protection

Best Regards,

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