



OCCUPATIONAL HEALTH ALERT



Limiting Worker Exposures to Asbestos-Containing Vermiculite Insulation

Vermiculite (pronounced *ver-mik-yuh-lahyt*) is a mineral that expands when rapidly heated. Expanded vermiculite is used in construction materials (loose-fill insulation, spray on insulation, concrete mixes), agricultural products (potting mixes and soil conditioners), and industrial products (brake pads, furnaces, and insulation blocks). Expanded vermiculite granules are shaped like accordions and vary in color from silver/gold to gray/brown.



Source: US Environmental Protection Agency. Actual size of vermiculite granules can vary substantially.

Vermiculite ore mined near Libby, Montana was contaminated with asbestos and asbestos-like fibers. Much of the vermiculite from the Libby mine was used to make loose attic insulation sold under the product name Zonolite™. However, not all loose vermiculite attic insulation contains vermiculite from the Libby mine.

How can I tell if I have vermiculite insulation that contains asbestos?

Because it is estimated that 70% of all vermiculite insulation produced in the US was from the Libby mine, you should assume that any vermiculite insulation you encounter contains asbestos and take precautions. Testing of vermiculite insulation for the presence of asbestos fibers can be performed by specialty laboratories, however testing can be very expensive and may give false results depending on the methods used. We also do not recommend opening walls, ceilings, or floors to look for vermiculite insulation.

If vermiculite is present in any of these spaces, it is best left undisturbed.

How are workers exposed to vermiculite and what are the possible health effects?



Source: US Environmental Protection Agency. Vermiculite Insulation between attic joists.

The most likely place workers would encounter vermiculite is in the attic insulation of an older home (pre-1990's).

Vermiculite insulation may be contained between attic joists, either under a plywood floor or exposed to the open air.

Workers can be exposed to vermiculite insulation when they perform work in attic spaces, such as running wires, installing or repairing duct work, or installing new or additional insulation.

When this insulation is disturbed, asbestos fibers can be released into the air and inhaled by workers. Inhaling asbestos fibers increases a person's risk of developing a specific type of lung cancer, called mesothelioma, as well as other lung conditions. These conditions may not develop until decades after exposure.

How can workers protect themselves from asbestos fibers in vermiculite?

If you must work in a space that contains vermiculite insulation, it is best to **disturb the insulation material as little as possible**. Other precautions include:

- ✓ Isolate work areas with temporary plastic barriers to avoid spreading fibers
- ✓ Use wet cleaning methods. Avoid dry sweeping. **Never use compressed air.**
- ✓ Use disposable protective clothing or clothing (including shoes) that remain in the workplace. Do not launder contaminated clothing with other laundry.
- ✓ Dispose of debris in accordance with federal/state/local asbestos regulations.
- ✓ Use appropriately selected and maintained respiratory protection.

Connecticut Department of Public Health
Environmental and Occupational Health Assessment Program
410 Capitol Avenue, MS # 11EOH
P.O. Box 340308
Hartford, CT 06134-0308
(860) 509-7740
<http://www.ct.gov/dph/occupationalhealth>

What is appropriate respiratory protection for working with vermiculite?

Selecting an appropriate respirator always depends on the airborne concentration of the contaminant of concern and the conditions under which the respirator will be used. When working with asbestos, including asbestos-containing vermiculite, the goal at a **minimum** is to reduce asbestos exposure to below the OSHA 8-hour time-weighted average permissible exposure limit of 0.1 fiber/cm³. To ensure this level of protection, workers should be fitted with half-face respirators fitted with high-efficiency (e.g. N100) filters or supplied-air (e.g. air-line or SCBA) respirators. **Disposable respirators or dust masks are not appropriate** for protection against asbestos fibers. In addition, whenever respirator use is required in a workplace, medical clearance, respirator training, and fit testing are also required by OSHA (29 CFR 1910.134). More information about the proper selection and use of respiratory protection can be found on the web through either NIOSH (<http://www.cdc.gov/niosh>) or OSHA (<http://www.osha.gov>).



LEFT: Negative pressure elastomeric or powered-air purifying respirators with changeable N100 (HEPA) filters are appropriate for protecting against asbestos exposure.

RIGHT: Single use disposable respirators and dust masks do not provide appropriate protection against exposure to asbestos fibers and should not be used in these cases.

Source: National Institute for Occupational Safety and Health.



Additional Resources:

National Institute for Occupational Safety and Health (NIOSH)

Fact Sheet: What is Vermiculite?

<http://www.cdc.gov/niosh/docs/2003-141/>

U.S. Environmental Protection Agency (EPA)

Asbestos-Vermiculite Information Page

<http://www.epa.gov/asbestos/pubs/verm.html>

Information in this fact sheet was abstracted in part from the United States Department of Labor, Occupational Safety and Health Administration, the National Institute for Occupational Safety and Health (NIOSH), and the United States Environmental Protection Agency.

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