Asbestos and Vermiculite

Asbestos is the name for several different naturally occurring, fibrous minerals that have been mined for their useful properties such as electrical insulation, fire-proofing, and sound-proofing. Asbestos has been in use for at least 5,000 years, extending back to the ancient Greek civilizations.

Asbestos in air and water

Due to the fact that asbestos-made vehicle brake pads and asbestos cement pipe have been in use for decades, low levels of asbestos readily exist in the air we breathe and in some of the water we drink. Just between the years 1987 to 1993, asbestos releases to water and land totaled nearly 9 million pounds, primarily from asbestos cement, roofing and friction producing industries, with the largest releases occurring in Pennsylvania and Louisiana.

Members of the general public have tens of thousands to hundreds of thousands of asbestos fibers in each gram of dry lung tissue, which translates into millions of fibers and tens of thousands of asbestos bodies in every person's lungs. Low levels of asbestos fibers can be measured in feces, urine, mucus, or lung washings of the general public. Higher-than-average levels of asbestos fibers in tissue samples can confirm exposure but not determine with any certainty whether you will experience any health effects.

Drinking water may contain asbestos from natural sources or from asbestos-containing cement pipes. The United States Environmental Protection Agency has a maximum concentration limit of 26.5 million fibers per gallon of drinking water for long fibers (for fibers whose lengths are greater than or equal to 5 micrometers). Also, the Occupational Safety and Health Administration has set limits of 100,000 fibers with lengths greater than or equal to 5 micrometers per cubic meter of workplace air for 8-hour shifts and 40-hour work weeks.

Asbestos fibers are not able to move through soil. They are not broken down into other compounds and remain virtually unchanged over long periods of time.

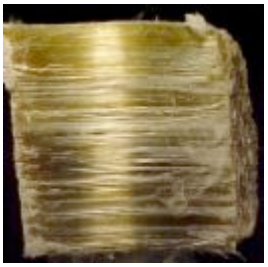
Small diameter asbestos-type fibers and particles may remain suspended in the air for a long time and can be carried long distances by wind or water before settling down.

Damage from asbestos

Where a large quantity of asbestos fibers get into the air, they may be inhaled into the lungs, where they can scar the lung tissue and the pleural membrane (lining) surrounding the lung. Lung tissue scarring is called called asbestosis and is usually found only in workers exposed to asbestos. People with asbestosis have difficulty breathing, often a cough, and in severe cases heart enlargement. Asbestosis is a serious disease and can eventually lead to disability and death.

Workers who have breathed lower levels of asbestos may develop plaques in the pleural membranes surrounding the lungs. Effects on breathing from pleural plaques alone are not usually serious, but higher exposure can lead to a thickening of the pleural membrane that may restrict breathing.

There are two types of cancer caused by exposure to chrysotile, a type of asbestos most often used for commercial purposes: mesothelioma and lung cancer. Mesothelioma is a cancer of the thin lining surrounding the lung (pleural membrane) or abdominal cavity (the peritoneum). Lung cancer from asbestos does not develop immediately, but shows up about 20-40 years after exposure.



Chrysotile

Ban on use of asbestos

In 1989, the EPA attempted to place a ban on all new uses of asbestos. However, there was court action and this resulted in the following products not being subject to a ban:

1) troweled-on surfacing asbestos containing materials,
2) asbestos-cement corrugated sheet,
3) asbestos-cement flat sheet,
4) asbestos clothing,
5) asbestos pipeline wrap,
6) asbestos roofing felt,
7) vinyl-asbestos floor tile,
8) asbestos-cement shingles,
9) asbestos containing millboard,
10) asbestos-cement pipe,
11) automatic transmission components such as clutch facings,
12) automotive disc brake pads, drum brake linings, brake blocks.

please also see the following webpage: http://www.epa.gov/asbestos/pubs/asbbans2.pdf

The USEPA does not track the manufacture, processing, or distribution in commerce of asbestos-containing products. It is recommended that you refer to the product's "Material Safety Data Sheet" (MSDS), or consider having any material that you are concerned about tested by a qualified laboratory for the presence of asbestos. Qualified laboratories are listed at the following webpage:

http://ts.nist.gov/Standards/scopes/plmtm.htm

The USEPA requires school systems to inspect for damaged asbestos and to eliminate or reduce the exposure by removing the asbestos or by encapsulating it or covering it up. The USEPA regulates the release of asbestos from factories and during building demolition or renovation to prevent asbestos from getting into the environment.

Asbestos in your home

If you are concerned about asbestos-containing products in your dwelling, they may be located in the following places, provided the dwelling was built prior to 1977:

1) Millboard, paper and cement sheet used as insulation around old furnaces and old woodburning stoves. Repairing or removing old furnaces and stoves containing these products may release asbestos fibers as might cutting, tearing, sanding, drilling, or sawing into the insulation.
2) The door gaskets in old furnaces, coal and wood stoves. Worn seals can release asbestos fibers during opening and closing.
3) Soundproofing or decorative material sprayed on walls and ceilings. Loose, crumbly, or water-damaged material may release fibers as will sanding, drilling, or scraping this material.
4) Drywall and plaster joint and patching compounds and textured paints for walls and ceilings. Drilling, sanding, and/or scraping may result in the release of asbestos.
5) Asbestos siding/shingles and asbestos cement roofing are not likely to release asbestos fibers unless they are cut, sawed, and/or drilled.
6) Artificial embers sold for use in gas-fired fireplaces.
7) Fireproof gloves, ironing board covers, stove-top heat pads and some hairdryers.
8) Boilers, steam pipes, and furnace ductwork insulated with an asbestos blanket or asbestos paper tape. These materials may release asbestos fibers if damaged, repaired, or removed improperly.

9) Vinyl asbestos, asphalt, and rubber floor tiles, and the adhesives for installing them. Scraping and/or sanding the adhesive and/or tiles can release asbestos fibers.

Should I remove asbestos if it is in my home?

Usually the best course of action is to leave asbestos that is in good condition alone. Generally, if it is in good condition, it will not release asbestos fibers.

Periodically look at the material for signs of wear or damage such as tears, abrasions, or water damage.

If you have concerns over a particular material or are in doubt, consult a licensed asbestos professional using the following website:

http://pubapps.odh.ohio.gov/EnvLicense_Reports/reports/External_Report_Criteria.aspx?Program=Asbestos

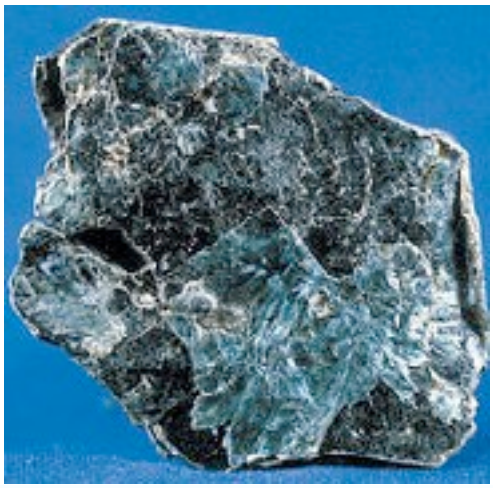
If samples need to be taken, the professional should send them to an accredited asbestos laboratory for analysis located at the following webpage:

http://ts.nist.gov/Standards/scopes/plmtm.htm

When asbestos is properly removed, it should only be sent to an appropriate landfill that accepts asbestos-laden products. Approved landfills are listed at the following website:

http://www.epa.state.oh.us/dapc/atu/asbestos/asb_land.html

Vermiculite



Vermiculite is not asbestos. It is a natural, non-fibrous, non-toxic, flaky crystalline silicate mineral that expands when heat is applied in a commercial-furnace process called “exfoliation.” During the exfoliation process, the mineral expands into accordion-shaped, worm-like pieces which result in an increased bulk volume of 8 to 30 times, becoming a light-weight, fire-resistant, absorbent and odorless material. These properties allow it to be used in the making of numerous agricultural, construction, horticultural, and industrial products.

The mineral was extracted during the 1960s in Libby, Montana, and sold under the name Zonolite. Mining operations in that location ceased in 1990 in response to tremolite asbestos contamination of that vermiculite.

Do I have Zonolite insulation in my attic?

Zonolite vermiculite appears as "accordian-like" nuggets about the size of a pencil eraser. Coloring varies from brown, to silver-gold, to pale gray. The product was sold as a "loose fill" insulation, “easily installed by homeowners.” Zonolite was poured from bags between the joists in attics. It was sold in the Midwest from approximately 1925 to 1985. If you think you have it in your attic, it is advised that you:

1) Do not disturb it. Any disturbance is likely to release asbestos fibers into the air.
2) Do not store boxes or other items in such a way, that, when retrieved, will disturb the insulation.
3) Children should not play in an attic that has this type of insulation.
4) Contract a professional who is trained and certified to handle asbestos to safely remove the material if you want to have it removed or plan to renovate or remodel.
5) Do not attempt to remove the insulation yourself.

World production of uncontaminated vermiculite in 2000 exceeded 551,000 tons. Vermiculite production in the U.S. as of 2002 was 165,000 tons. In addition to the United States, the major producers of vermiculite include Zimbabwe, China, Australia, and South Africa.

Uncontaminated vermiculite dusts, including fibrous fragment forms, have demonstrated very few if any health effects, other than those that could be expected from any low toxicity silicate. There is very little evidence that by breathing vermiculite dust or vermiculite fibers one will be physically harmed.