



Health Risks of Asbestos

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IT'S YOUR HEALTH



Health Risks of Asbestos

THE ISSUE

Asbestos poses health risks only when fibres are present in the air you breathe. There are no significant health risks if asbestos fibres stay enclosed or tightly bound in a product (for example in asbestos siding or asbestos floor tiles).



ASBESTOS FIBRES

Asbestos is the generic name for a variety of fibrous minerals found naturally in rock formations around the world. Asbestos fibres are strong, durable, and do not burn. This is why asbestos was widely used by industry, mainly in construction and friction materials.

Commercial **asbestos fibres** belong in two broad mineralogical groups:

- serpentine (chrysotile)
- amphibole (tremolite, amosite, crocidolite and others)

CHRYSTOLE ASBESTOS

This type of asbestos fibre:

- is the only type of asbestos found in almost all asbestos-based products manufactured today
- is the main form of asbestos still mined
- is different from the amphiboles both structurally and chemically

AMPHIBOLE ASBESTOS

This type of asbestos fibre:

- was used heavily in industrial furnaces and heating systems—it contains more iron and is able to resist acid and extremely high temperatures
- when inhaled, stays longer in the lungs than chrysotile fibres

The commercial use of amphibole asbestos has been almost completely discontinued.

SOURCES OF EXPOSURE TO ASBESTOS

Occupational

One of the main problems with asbestos now comes from sprayed or “friable” (easily broken up) asbestos used in buildings until the 1970s. Construction workers, tradespeople and other building maintenance workers may be exposed to very high concentrations of asbestos fibres during renovations and repairs to older buildings. The environment and work methods of these occupations are more difficult to control than fixed workplaces. However, most tradespeople are trained in the proper handling of materials that contain asbestos.



There are also risks for workers in industries that produce and use asbestos, like mining and milling, and manufacturing of asbestos-containing products. In the past, workers in these industries were exposed to 100–1,000 times more asbestos than today’s workers. Now, strict standards limit workers’ exposure. The ban or discontinuance of most uses of asbestos has reduced the risks.

Environmental

There are very low levels of asbestos fibres in water and air. The fibres come from both natural and man-made sources.

The levels in large cities are hundreds of times lower than levels accepted in today’s asbestos-related jobs. Levels in rural areas are lower than city levels. With such low exposure, environmental risks are not a concern.

Some raw water supplies may contain high levels of chrysotile asbestos fibres. This is a result of natural erosion. Conventional water treatment methods can substantially reduce asbestos levels. There is no clear evidence that chrysotile fibres are a health hazard when swallowed.

Buildings and homes

Because it is a valuable reinforcing, insulating, and fire-proofing material, **asbestos** was used widely in construction materials, like:

- insulation board
- asbestos cement
- floor and ceiling tiles
- drywall joint cement

These products do not release significant amounts of fibres under normal use. However, you can release fibres if you cut or damage these products.

Levels of asbestos fibres in the air in buildings are usually about the same as in the air outside and are not a significant risk. But levels may be higher if you disturb asbestos materials that are friable (easily broken up).

There is also concern about **vermiculite insulation**, which may contain small amounts of amphibole asbestos, primarily tremolite or actinolite. The amphibole fibres may cause health risks if disturbed. But there is currently no evidence of risk to your health if the insulation is:

- sealed behind wallboards and floorboards
- isolated in an attic
- otherwise kept from exposure to the home or interior environment

THE HEALTH RISKS OF ASBESTOS

The amount of asbestos in a product does not indicate its health risk. If the asbestos fibres stay enclosed or tightly bound in a product, there is no significant health risk.

Asbestos poses health risks only when fibres are present in the air you breathe. How exposure to asbestos can affect you depends on:

- the amount of asbestos fibres in the air
- how long your exposure lasts
- how often you were exposed
- the size of the asbestos fibres inhaled
- the amount of time since your first exposure
- the type of asbestos fibre

When inhaled in significant quantities, asbestos fibres can cause:

- asbestosis—a scarring of the lungs that makes breathing difficult
- mesothelioma—an otherwise rare cancer of the lining of the chest or abdominal cavity



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- lung cancer
- cancer of the larynx
- ovarian cancer

There is also evidence that asbestos can cause cancer of the pharynx and stomach. The link between exposure to asbestos and other types of cancers is less clear.

Smoking, combined with inhaled asbestos, greatly increases the risk of lung cancer.

REDUCE YOUR RISK

Construction and maintenance workers should:

- Find out whether asbestos is present before starting work and take appropriate precautionary measures.
- Avoid creating asbestos dust from scraping, brushing, rubbing or cutting damaged insulation.
- Report insulation damage to the right authority, such as the Occupational Health and Safety Manager.



Public and commercial building owners should:

- Keep an inventory of locations and materials that contain asbestos to inform users, authorities and contractors.

Homeowners should:

- Get expert advice before removing materials that may contain asbestos.
- Regularly check for signs of wear and damage if you think your home may contain asbestos.

But remember, you can't always tell just by looking at a material. If in doubt, have it analyzed by a qualified professional. You can find one by looking up experts in "asbestos abatement /removal."

If you must handle small amounts of damaged materials that contain asbestos, follow these steps:

- Keep other people and pets away.
- Seal off the work area.
- Wear the right protective clothing, including a half-mask respirator with a High Efficiency Particulate Arrester (HEPA) filter cartridge approved by the [National Institute for Occupational Safety and Health \(NIOSH\)](#). These filters are designated as either N-100, R-100, or P-100 particulate filters. A common dust mask is not enough to protect you from asbestos fibres.

- Wet the material to reduce dust. Make sure it is not in contact with electricity.
- If possible, do not cut or damage the materials further and do not break them up.
- Clean the work area afterwards using a damp cloth, not a vacuum cleaner.
- Seal the asbestos waste and cloth in a plastic bag. Check with your local municipality on how to dispose of waste that contains asbestos.
- Do not spread dust by shaking out clothing.
- Wash or throw away clothing, and shower after finishing the job.

THE GOVERNMENT OF CANADA'S ROLE

The Government of Canada has put controls on asbestos to help protect the health of Canadians. For example:

- The *Canada Consumer Product Safety Act* controls the sale to the public of pure asbestos and certain high-risk consumer products that contain or are made of asbestos fibres.
- The *Canadian Environmental Protection Act* controls emissions of asbestos into the environment from mining and milling operations.

Also, Health Canada has encouraged provincial occupational health authorities to adopt stringent workplace exposure limits for asbestos.

FOR MORE INFORMATION

- *It's Your Health*—*Vermiculite Insulation Containing Asbestos* at: www.hc-sc.gc.ca/iyh-vsv/prod/insulation-isolant_e.html
- Consumer Product Safety, *Asbestos* at: www.hc-sc.gc.ca/cps-spc/house-domes/decor/construct_asbestos-amiante-eng.php
- Canada Mortgage and Housing Corporation, *Asbestos* at: www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/inaiqu/inaiqu_001.cfm
- Canadian Centre for Occupational Health and Safety, *Respirator Selection* at: www.ccohs.ca/oshanswers/prevention/ppe/respsict.html
- Information for Canadian veterans who may have been exposed to asbestos at: www.veterans.gc.ca/eng/salute/fall2007/health_asbestos
- U.S. Environmental Protection Agency's *Asbestos website* at: www.epa.gov/asbestos/index.html

FOR INDUSTRY AND PROFESSIONALS

- *Occupational Health and Safety* web section at: www.hc-sc.gc.ca/ewh-semt/occup-travail/index-eng.php
- *Workplace Hazardous Materials Information System (WHMIS)* web section at: www.hc-sc.gc.ca/ewh-semt/occup-travail/whmis-simdut/index_e.html/index.htm

RELATED RESOURCES

- Health Canada's *Consumer Product Safety* web section at: www.health.gc.ca/cps
- Health Canada's *Environmental Contaminants* web section at: www.hc-sc.gc.ca/ewh-semt/contaminants/index_e.html
- Natural Resources Canada—*Keeping the Heat In—Health and Safety Considerations* at: <http://oee.nrcan.gc.ca/publications/residential/2366#part4>
- For safety information about food, health and consumer products, visit the *Healthy Canadians* website at: www.healthycanadians.gc.ca
- For more articles on health and safety issues, go to the *It's Your Health* web section at: www.health.gc.ca/iyh

You can also call toll free at 1-866-225-0709 or TTY at 1-800-267-1245*

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