

FAQs About Asbestos in the Home and Workplace

November 2017

This fact sheet provides information to people who are trying to determine whether there is asbestos-containing material in their home or workplace, and what they might do if there is asbestos. It reviews health concerns about asbestos exposures and provides resources to address health concerns.

What is asbestos?

Asbestos is a naturally occurring mineral. It is mined in much the same way that other minerals, such as iron, lead, and copper, are. Asbestos is composed of silicon, oxygen, hydrogen, and various metal cations (positively charged metal ions). There are currently six varieties of regulated asbestos: chrysotile, amosite, crocidolite, tremolite, actinolite, and anthophyllite. The three most common are chrysotile, amosite, and crocidolite.

Chrysotile fibers are pliable and cylindrical, and often arranged in bundles. Amosite and crocidolite fibers resemble tiny needles. The first commercial asbestos mine -- a chrysotile mine -- opened in Quebec, Canada, in the 1870's. Crocidolite asbestos was first mined in South Africa during the 1980's. Amosite asbestos also comes from Africa and was first mined in 1916. Unlike most minerals, which turn into dust particles when crushed, asbestos breaks up into fine fibers that are too small to be seen by the human eye. Often, individual fibers are mixed with a material that binds them together, producing an asbestos containing material (ACM).

Why has asbestos been so widely used?

Asbestos appealed to manufacturers and builders for a variety of reasons. It is strong yet flexible, and will not burn. It is a poor conductor of heat and electricity, and resists corrosion. Asbestos may have been so widely used because few other available substances combine the same qualities.

How can asbestos affect my health?

From studies of people who were exposed to asbestos in factories and shipyards, we know that breathing high levels of asbestos fibers can lead to an increased risk of:

- lung cancer
- mesothelioma, a cancer of the lining of the chest and the abdominal cavity; and
- asbestosis, in which the lungs become scarred with fibrous tissue.

The risk of lung cancer and mesothelioma increases with the number of fibers inhaled. The risk of lung cancer from inhaling asbestos fibers is also greater if you smoke. People who get asbestosis have usually been exposed to high levels of asbestos for a long time. The symptoms of these diseases do not usually appear until about 20 to 30 years after the first exposure to asbestos.

Most people exposed to small amounts of asbestos, as we all are in our daily lives, do not develop these health problems. However, if disturbed, asbestos material may release asbestos fibers, which can be inhaled into the lungs. The fibers can remain there for a long time, increasing the risk of disease. Asbestos material that would crumble easily if handled, or that has been sawed, scraped, or sanded into a powder, is more likely to create a health hazard.

Adapted from US EPA's "Asbestos in Your Home"

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How are people exposed to asbestos?

When asbestos fibers are in the air, people may inhale them. Because asbestos fibers are small and light, they can stay in the air for a long time. People whose work brings them into contact with asbestos — workers who demolish or renovate buildings with asbestos in them, for example — may inhale fibers that are in the air: this is called occupational exposure. Workers' families may inhale asbestos fibers released by clothes that have been in contact with ACM: this is called paraoccupational exposure. People who live or work near asbestos-related operations may inhale asbestos fibers that have been released into the air by the operations: this is called neighborhood exposure.

Does asbestos exposure cause health problems?

Some people exposed to asbestos develop asbestos-related health problems; some do not. Asbestos fibers easily penetrate body tissues after inhalation. They may be deposited and retained in the airways and lung tissue. Because asbestos fibers remain in the body, each exposure increases the risk of developing an asbestos-related disease. Asbestos-related diseases may not appear until years after exposure. Today we are seeing results of exposure among asbestos workers during World War II. A medical examination that includes a medical history, breathing capacity test, and chest x-ray may detect problems early. Scientists have not been able to develop a "safe" or threshold level for exposure to airborne asbestos. Ingesting asbestos may be harmful, but the consequences of this type of exposure have not been clearly documented. People who touch asbestos may get a rash similar to the rash caused by fiberglass.

Where in a home may asbestos hazards be found?

- Some roofing and siding shingles are made of asbestos cement.
- Houses built between 1930 and 1950 may have asbestos as insulation.
- Asbestos may be present in textured paint and patching compounds used on wall and ceiling joints. Their use was banned in 1977.
- Artificial ashes and embers sold for use in gas-fired fireplaces may contain asbestos.
- Older products such as stove-top pads may have some asbestos compounds.
- Walls and floors around wood-burning stoves may be protected with asbestos paper, millboard, or cement sheets.
- Asbestos is found in some vinyl floor tiles and the backing on vinyl sheet flooring and adhesives.
- Hot water and steam pipes in older houses may be coated with an asbestos material or covered with an asbestos blanket or tape.
- Oil and coal furnaces and door gaskets may have asbestos insulation.

How many products contain asbestos?

One study estimated that 3,000 different types of commercial products contained asbestos. The amount of asbestos in each product varied from as little as one percent to as much as 100 percent. Many older plastics, paper products, brake linings, floor tiles, and textile products contain asbestos, as do many heavy industrial products such as sealants, cement pipe, cement sheets, and insulation. It is still legal to manufacture, process, and import most asbestos products.

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Who regulates asbestos?

The U.S. Environmental Protection Agency and the Occupational Safety and Health Administration (OSHA) are responsible for regulating environmental exposure and protecting workers from asbestos exposure.

EPA is responsible for developing and enforcing regulations necessary to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health, according to the National Emission Standard for Asbestos (NESHAP) rules. People who plan to renovate a structure that will result in disturbing a certain amount of asbestos, or who plan to demolish any building, are required to notify the appropriate federal, state, and local agencies, and to follow all federal, state, and local requirements for removal and disposal of regulated asbestos-containing material (RACM). In most cases, the agency responsible for investigating EPA NESHAP-related incidents is your local Air District, but the California Air Resources Board (CARB) is responsible for some locations in the State. Please see our Asbestos Links page for CARB NESHAP resources, including a map and list of local Air District websites.

OSHA is responsible for the health and safety of workers who may be exposed to asbestos in the work place or in connection with their jobs. The EPA's Worker Protection Rule (40 CFR Part 763, Subpart G) extends the OSHA standards to state and local employees who perform asbestos work and who are not covered by the OSHA Asbestos Standards, or by a state OSHA plan. The Rule parallels OSHA requirements and covers medical examinations, air monitoring and reporting, protective equipment, work practices, and record keeping.

In addition, many California state and local agencies have more stringent standards than those required by the Federal government.

What should be done about asbestos in a home?

If asbestos material is more than slightly damaged, or if you are going to make changes in your home that might disturb it, repair or removal by a professional may be needed. In general, EPA's advice on asbestos is neither to rip it all out in a panic nor to ignore the problem under a false presumption that asbestos is "risk free." Rather, EPA recommends a practical approach that protects public health by emphasizing that asbestos material in buildings should be identified, that it should be appropriately managed, and that those workers who may disturb it should be properly trained and protected.

Note that single family homes are legally exempt from US EPA asbestos rules (NESHAPs) in many cases. The NESHAPs exclude residences with four or fewer family units from the definition of a regulated "facility". Despite this statement, exceptions do exist, such as when more than one single family home exists on one property, or when it is demolished as part of a fire training, urban renewal, conversion to commercial space, highway construction project, or ordered demolition. In addition, your local Air District regulations may be more stringent than Federal NESHAPs, and some Air Districts do regulate asbestos in single family homes.

How can asbestos be identified?

While visual appearance may cause one to suspect that a material or product contains asbestos, actual asbestos determinations can only be made using instrumental analysis. Until a suspect product is tested, it is best to assume that the product contains asbestos, unless the label or the manufacturer verifies that it does not.

The EPA requires that the asbestos content of suspect, regulated materials be determined by collecting bulk samples and analyzing them by polarized light microscopy (PLM), with

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transmission electron microscopy (TEM) recommended for some materials. The PLM technique determines both the percent and type of asbestos in the bulk material. EPA Regional Offices can provide information about laboratories that test for asbestos.

What does “friable” asbestos mean? Is transite siding friable?

“Friable,” when applied to an asbestos-containing material, generally means that the material can be reduced to smaller pieces with relatively little effort (sometimes defined as “can be pulverized by hand pressure”), allowing the asbestos fibers to become dislodged into the air. If a substance is not friable, it is generally not considered a regulated asbestos-containing material (RACM.)

The AHERA rule for asbestos in schools excludes “non-friable” materials. US EPA RACM determinations for various specific, asbestos-containing materials under specific conditions can be found in the NESHAP rule.

Transite siding is an encapsulated, tenacious form of asbestos-containing material that does not typically release fibers unless degraded or damaged with extreme amounts of energy. Non-damaged transite siding is one example of a non-friable, non-regulated asbestos-containing material.

Note, however, that non-friable materials can become friable if abused or mechanically disrupted. If enough energy is applied to break the fibers apart, and if the fibers are of a specific size that allows them to become airborne and disperse, then asbestos exposure is possible. All of these factors depend on the condition of the materials and the removal work that is being done. Your local Air District may

decide that an inspection visit may be necessary to determine the relevant details. In addition, Federal OSHA and California Dept. of Industrial Relations (CalOSHA) maintain best-practice rules for various industries for removing non-friable transite and cementitious asbestos-containing siding (keep it wet, avoid abrasion, site monitoring, etc). Note that these rules apply to workers in direct contact with these materials only.

Where am I able to get more information on asbestos?

See “Asbestos Links” for informational websites from other CA and Federal agencies.

In California, you can also obtain more information about the Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP) through the California Air Resource Board (CARB). Depending on where you live, enforcement is either through the local air quality district or, if living in a county in non-delegated air districts, through CARB itself. See the Enforcement map linked below.

You may also call the EPA Toxic Substances Control Act (TSCA) Hotline to ask general questions about asbestos, or to request asbestos guidance documents. The Hotline number is (202) 554-1404. The EPA Public Information Center can send you information on EPA regulations. The Office of the Federal Register (202-382-5475) can send you copies of any regulations published in The Federal Register, including the Asbestos NESHAP. Finally, the EPA has an Asbestos Ombudsman to provide information on the handling and abatement of asbestos in schools, the work place, and the home. Also, the EPA Asbestos Ombudsman can help citizens with asbestos-in-school complaints. The Ombudsman can be reached toll-free at (800) 368-5888.

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Suspect asbestos-containing Materials:

- Cement pipes
- Cement wallboard
- Cement siding
- Asphalt floor tile
- Vinyl floor tile
- Vinyl sheet flooring
- Flooring backing
- Construction mastics (floor tile, carpet, ceiling tile, etc.)
- Acoustical plaster
- Decorative plaster
- Textured paints/coatings
- Ceiling tiles and lay-in panels
- Spray-applied insulation
- Blown-in insulation
- Fireproofing materials
- Taping compounds (thermal)
- Packing materials
- High temperature gaskets
- Laboratory hoods/table tops
- Laboratory gloves
- Fire blankets
- Fire curtains
- Elevator equipment panels
- Elevator brake shoes
- HVAC duct insulation
- Boiler insulation
- Breaching insulation
- Ductwork flexible fabric connections
- Cooling towers
- Pipe insulation (corrugated air-cell, block)
- Heating and electrical ducts
- Electric panel partitions
- Electrical cloth
- Electric wiring insulation
- Chalkboards
- Roofing shingles
- Roofing felt
- Base flashing
- Thermal paper products
- Fire doors
- Caulking/Putties
- Adhesives
- Wallboard
- Joint compounds
- Vinyl wall coverings
- Spackling compounds

DISCLAIMER: This manual was originally prepared by Entropy Environmentalists, Inc., for the Stationary Source Compliance Division of the U.S. Environmental Protection Agency, and later revised by EPA Region 6. This document is intended for informational purposes ONLY, and may not in any way be interpreted to alter or replace the coverage or requirements of the asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61, Subpart M. Any mention of product items names does not constitute endorsement by the U.S. Environmental Protection Agency.

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Additional Resources

US EPA

<https://www.epa.gov/asbestos>

US EPA AHERA Guidelines

<https://www.epa.gov/asbestos/code-federal-regulations-chapter-40-part-763-asbestos>

US EPA NASHEP

<https://www.epa.gov/asbestos/asbestos-national-emissions-standard-hazardous-air-pollutants-neshap>

US EPA Region 9

<https://www.epa.gov/aboutepa/epa-region-9-pacific-southwest>

California Air Resource Board (CARB) Asbestos NESHAP Program

<https://www.arb.ca.gov/enf/asbestos/asbestos.htm>

California Air Resource Board (CARB) Asbestos Enforcement Map

<https://www.arb.ca.gov/enf/asbestos/asbmap.htm>

California Air Resource Board (CARB) Local Air District Directory

<https://www.arb.ca.gov/capcoa/roster.htm>

CAL OSHA - Enforcement of workplace asbestos removal

<http://www.dir.ca.gov/dosh/asbestos.html>

Department of Toxic Substances Control

www.dtsc.ca.gov/

Department of Consumer Affairs Contractors State License Board

www.cslb.ca.gov/

Information on naturally occurring asbestos (US Agency for Toxic Substances and Disease Registry)

<http://www.atsdr.cdc.gov/noa/>

NIOSH

<http://www.cdc.gov/niosh/topics/asbestos/>