



Toxics Information Series

Asbestos

Asbestos was once considered a health risk only for asbestos workers. Now asbestos is known to be a potential hazard to the health of millions of people, on and off the job, who are routinely exposed to asbestos fibers in the air they breathe. Among those whose health may be endangered by asbestos are children, teachers and others in schools where asbestos was sprayed or troweled on ceilings, rafters, beams and other structural building parts for fire-proofing, insulation, sound-deadening or decoration. This Information Bulletin discusses the asbestos hazard and what the U.S. Environmental Protection Agency (EPA) is doing to help safeguard public health from the risks of asbestos.

Asbestos --
What Is It?

Asbestos is the common name for a group of natural minerals -- silicates -- that separate into thin but strong fibers. The fibers are chemically inert and heat resistant, and they cannot be destroyed or degraded easily. These characteristics have made asbestos very useful commercially. Asbestos is widely used for fire-proofing and insulating homes and all kinds of public and private buildings. Asbestos products include reinforced asbestos cement sheets and pipes, pipe insulation, roofing felt and shingles, floor tiles, patching and taping compounds, brake linings, clutch facings, insulating paper, and protective clothing. Some 800,000 tons of asbestos are mined or processed in the U.S. each year to make about 3,000 different products, two-thirds of which are used in the construction industry.

Why Is Asbestos
A Problem?

Unless it is completely sealed into a product, as in asbestos floor tile, asbestos can easily break into a dust of tiny fibers. These fibers, much smaller and more buoyant than ordinary dust particles, float almost indefinitely in the air and can easily be inhaled or swallowed. Once the fibers enter the body, they can cause a number of serious diseases:

Asbestosis, a chronic disease of the lungs which makes breathing more and more difficult and can cause death.

Cancer. Breathing asbestos fibers definitely can cause lung cancer. Also, since some of the asbestos fibers are rejected by the lungs, move up to the throat, and are swallowed, breathing asbestos can also cause cancer of the esophagus, stomach, intestines, and rectum.

Mesothelioma, a cancer of the membranes that line the chest and abdomen. Mesothelioma almost never occurs in people who have not been exposed to asbestos. It is always fatal.

Once asbestos gets into the body, it remains there indefinitely. It can move from the lungs to almost all other parts of the body, including the brain and the sex organs. Cancers can occur anywhere from 15 to 40 years after the first exposure. No safe limit or "threshold" of exposure is known. Any exposure to asbestos carries some risk to health, and people exposed to low levels of asbestos for a very brief period have later contracted mesothelioma. Finally, anyone exposed to asbestos who also smokes cigarettes has five times the chance of contracting lung cancer than a cigarette smoker who has not been exposed to asbestos.

What's The Government Doing About This Health Hazard?

The Occupational Safety and Health Administration has established limits for worker exposure to asbestos on the job. The Food and Drug Administration is responsible for making sure that foods, drugs and cosmetics are not contaminated with asbestos. And the Consumer Products Safety Commission (CPSC) regulates asbestos in consumer products; it has already banned the use of asbestos in ceramic logs in gas-fired fireplaces, in consumer clothing and in dry-wall patching compounds. CPSC is studying the extent of asbestos use in all consumer products and is considering banning all non-essential uses of asbestos in consumer products that can release asbestos fibers.

EPA, which among other authorities can regulate air and water contamination by asbestos, prohibited the spraying of asbestos materials for fire-proofing and insulation in 1973, banned the use of asbestos that can crumble in pipe and boiler coverings in 1975, and prohibited virtually all uses of sprayed asbestos materials in 1978.

In addition, EPA is investigating the cumulative effects on public health of exposure to asbestos -- from the time it is mined and milled, through processing and product manufacturing, use and disposal. And EPA is also considering banning all non-essential uses of asbestos and asbestos products. The prohibitions being considered would be phased in over a period of time and would exempt certain essential uses for which reasonable substitutes do not exist and which do not pose an unreasonable risk to health. One example of the possible exemption from the ban: fire-protection suits for firemen if the asbestos is totally enclosed, sealed, or

Not All Asbestos Products Are Hazardous!

Asbestos becomes a health hazard only when fibers are released into the air. This usually happens when the asbestos materials can be crumbled in the hand -- in technical language, when the asbestos material is "friable," as is asbestos insulation sprayed on a ceiling. In contrast, vinyl asbestos floor tile is not generally "friable." The asbestos fibers are firmly bound or sealed into the tile and can be released into the air only if the tile is cut, ground or sanded.

bonded into the suit so that no asbestos fibers can be released into the air.

Under the Toxic Substances Control Act, EPA is required to ban or limit the use and disposal of any chemical substance that poses an unreasonable risk of injury to human health or the environment. Preliminary studies show that millions of people may indeed be facing the danger of unreasonable risk to their health from asbestos particles from an increasing number of sources. Thus the contemplated regulations to prevent and reduce unreasonable risks from asbestos.

What About Asbestos In Schools?

Between 1940 and 1973, hundreds of thousands of tons of asbestos were sprayed or applied on ceilings and other parts of many schools -- and other buildings, public and private -- for fire-proofing, sound-deadening, insulation, or decoration. Surveys indicate that 5-15 percent of the nation's public schools contain some asbestos materials.

Some of the asbestos material is now known to be damaged or deteriorating -- and releasing asbestos fibers into the air in the buildings.

The fibers can remain suspended in the air for hours. And fibers that settle to the floor can be stirred up into the air again as children walk or run through halls, classrooms, the gymnasium, the cafeteria. Thus, while the asbestos fibers may be released only sporadically from damaged insulation on a ceiling or pipe, there can be virtually continuous exposure to asbestos. Indeed, in some schools, asbestos levels in the air have occasionally exceeded the Federal safety standard for asbestos workers.

It seems likely that the dangers of asbestos exposure are particularly grave for children. Since they are exposed early in their lives, asbestos-induced cancers will have plenty of time to develop.

To safeguard the health of school children, teachers and others who work in schools, EPA has launched a school asbestos program. The purposes of this program are: to identify school buildings that contain asbestos materials, to inspect those buildings to see if asbestos fibers are being released into the air within the building, to remove or repair the damaged asbestos material, and periodically to inspect the asbestos materials left in the schools.

NOT For Schools Alone!

EPA's Asbestos Guidance Package is not just for public schools. Asbestos materials have been used in the construction or renovation of many private schools, colleges, universities, and office, commercial and residential buildings. The package can help any building owner identify and eliminate asbestos hazards. It's available, free, by calling, toll-free, 800-424-9065. In the Washington, D.C. area, the number is 554-1404.

EPA has prepared and made available to State and local governments and schools two manuals that explain, step by step, how asbestos problems can be identified and corrected.

The manuals -- called the Asbestos School Guidance Package -- are available, free, from EPA.

A videotape outlining the procedures explained in the manuals is available from EPA's 10 regional offices. And a specially trained EPA asbestos coordinator in each regional office can provide additional technical assistance.

EPA's school asbestos technical assistance program has been voluntary, and many State and local governments have participated in the program. However, to make sure that the necessary steps are taken to reduce the risk of asbestos exposure, EPA plans to issue regulations requiring that elementary and secondary schools be inspected for the presence of asbestos and requiring that asbestos exposure problems be corrected.

In sum, EPA's school asbestos program has already helped some schools identify and reduce asbestos hazards and, when the regulations are issued, will require other schools to do so too.

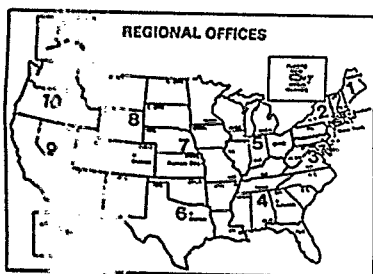
Meanwhile, students, parents, teachers and other concerned citizens can help rid the nation's schools of asbestos hazards by urging their school officials to take the necessary actions if they have not already done so.

Want More
Information?

Additional information on EPA's asbestos program is available from EPA headquarters in Washington, D.C. -- 800-424-9065 (554-1404 in the Washington area) -- or from EPA regional offices.

Additional information on the effects of asbestos on health is available from Asbestos, National Cancer Institute, Bethesda, Md. 20205. (Call 800-638-6694; in Maryland, 800-492-6600).

Additional information on asbestos in consumer products is available from the Consumer Products Safety Commission. Call 800-638-8326; 800-492-8363 in Maryland; 800-638-8333 in Alaska, Hawaii, Puerto Rico, Virgin Islands.



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