1. What is asbestos?

"Asbestos" is the name given to a group of minerals that occur naturally as masses of strong, flexible fibers that can be separated into thin threads and woven. These fibers are not affected by heat or chemicals and do not conduct electricity. For these reasons, asbestos has been widely used in many industries. Four types of asbestos have been commonly used:

- **Chrysotile**, or white asbestos (curly, flexible white fibers), which accounts for about 90 percent of the asbestos currently used in industry;
- **Amosite** (straight, brittle fibers that are light gray to pale brown in color);
- **Crocidolite**, or blue asbestos (straight blue fibers); and
- **Anthophyllite** (brittle white fibers).

Asbestos fiber masses tend to break easily into a dust composed of tiny particles that can float in the air and stick to clothes. The fibers may be easily inhaled or swallowed and can cause serious health problems.

2. How is asbestos used?

Asbestos has been mined and used commercially in North America since the late 1800s, but its use increased greatly during World War II. Since then, it has been used in many industries. For example, the building and construction industry uses it for strengthening cement and plastics as well as for insulation, fireproofing, and sound absorption. The shipbuilding industry has used asbestos to insulate boilers, steam pipes, hot water pipes, and nuclear reactors in ships. The automotive industry uses asbestos in vehicle brake shoes and clutch pads. More than 5,000 products contain or have contained asbestos, prominently:

- **Asbestos cement sheet and pipe products** used for water supply and sewage piping, roofing and siding, casings for electrical wires, fire protection material, chemical tanks, electrical switchboards and components, and residential and industrial building materials;
- **Friction products**, such as clutch facings; brake linings for automobiles, railroad cars, and airplanes; and industrial friction materials;
- Products containing **asbestos paper**, such as table pads and heat-protective mats, heat and electrical wire insulation, industrial filters for beverages, small appliance components, and underlying material for sheet flooring;
- **Asbestos textile products**, such as packing components, roofing materials, heat- and fire-resistant clothing, and fireproof draperies; and
- Other products, including ceiling and floor tile; gaskets and packings; paints, coatings, and sealants; caulking and patching tape; and plastics.
In the late 1970s, the U.S. Consumer Product Safety Commission banned the use of asbestos in wallboard patching compounds and gas fireplaces because these products released excessive amounts of asbestos fibers into the environment. In addition, asbestos was voluntarily withdrawn by manufacturers of electric hair dryers. These and other regulatory actions, coupled with widespread public concern about the hazards of asbestos, have resulted in a significant annual decline in U.S. use of asbestos: Domestic use of asbestos amounted to about 560,000 metric tons in 1979, but by 1989 it had dropped to about one-tenth that amount.

3. What are the health hazards of asbestos?

Exposure to asbestos increases the risk of several serious diseases:

- **Asbestosis**—a chronic lung ailment that can produce shortness of breath and permanent lung damage and increase the risk of dangerous lung infections;
- **Lung cancer**;
- **Mesothelioma**—a relatively rare cancer of the thin membranes that line the chest and abdomen; and
- Other cancers, such as those of the larynx and of the gastrointestinal tract.

4. Who is at risk from asbestos?

Since the early 1940s, millions of Americans have been exposed to asbestos dust, including many of the 4.5 million people who worked in shipyards during World War II. Illness from asbestos dust has been recognized in workers exposed in shipbuilding trades, asbestos mining and milling, manufacturing of asbestos products, insulation work in the construction and building trades, brake repair, and a variety of other trades. Demolition workers, drywall removers, and firefighters also may be exposed to asbestos dust.

The risk to workers increases with heavier exposure and longer exposure time. But asbestos-related diseases have struck some workers exposed to asbestos fibers for only one or two months. Even workers who have not worked directly with asbestos but whose jobs were located near contaminated areas have developed asbestos injuries.

Generally, there are no signs of asbestos-illness until many years after first exposure. For example, the time between first exposure to asbestos and the appearance of lung cancer is generally 15 years or more; a lag of 30 to 35 years is not unusual. The lag period for development of mesothelioma and asbestosis is even greater, often as long as 40 to 45 years.

Family members of asbestos workers face an increased risk of developing mesothelioma and perhaps other asbestos-related diseases, as a result of asbestos dust brought into the home on the shoes, clothing, skin, and hair of workers.

Not all people exposed to asbestos will develop diseases related to their exposure; many will experience no ill effects. Asbestos that is bonded into finished products such as walls, tiles, and pipes poses little risk to health as long as it is not damaged or disturbed (for example, by sawing or drilling) in such a way as to
release fibers into the air. When asbestos particles are set free and inhaled, however, exposed individuals are at risk of developing an asbestos-related disease. Once these nearly indestructible fibers work their way into body tissues, they tend to stay there indefinitely. REF

In the past 30 years, 171,500 workers in the United States have died of asbestos-related cancers, the worst occupational health disaster of the century. An additional 119,000 U.S. deaths are expected before the epidemic winds down in 2025. REF

5. Why are Americans still plagued by killer asbestos?

A quarter-century ago, three U.S. government worker-safety agencies--OSHA, NIOSH and EPA--and the World Health Organization declared asbestos a killer. Twelve countries have outlawed asbestos and more nations are heading to do the same. But it still remains legal to mine, import and sell asbestos in the United States.

The reasons for this are well-documented. According to the Seattle Post-Intelligencer (11 February 2000):

The asbestos industry has been relentless--and successful--in efforts to cajole Congress into blocking controls on its deadly product. And the Canadian government, with pit-bull intensity, has fought all efforts to ban or control the use of asbestos. Canada, the world's second-largest exporter of asbestos, has sued the Environmental Protection Agency, challenged its European allies and financed questionable science to try to prove that asbestos, especially Canadian asbestos, really isn't dangerous.

President Reagan and J. Peter Grace, then chairman of the W.R. Grace Co., a leader in the asbestos industry, had a close association. In February 1982, Reagan named Grace to head a private-sector survey on government cost control, known thereafter as the Grace Commission.

The administration of President Bush refused to defend a ban instituted by its own environmental agency. In July 1989, the EPA issued regulations that banned the manufacture, importation, processing and selling of almost all products containing asbestos. The ban was to be implemented in three stages over nine years. This, the agency said, would permit industries using asbestos to find safe alternatives.

Almost instantly, U.S. asbestos manufacturers, supported by the governments of Canada and Quebec province, sued the EPA.

On Oct. 18, 1991, the 5th Circuit Court of Appeals in New Orleans overturned the ban. The three-judge appellate court did not take issue with the EPA's science or medical opinions on asbestos' health hazards. Rather, the judges faulted the agency for technical errors in the cost-benefit analysis required by the Toxic Substance Control Act.

In the United States, the asbestos lobby continues to be enormous and powerful. In the last decade five leading asbestos-product companies alone and their political action committees have contributed $2.2 million to federal campaigns, led by the W.R. Grace Co. at $764,618. REF
The result is that asbestos still threatens many lives.