PLAINTIFF'S EXHIBIT

DOW-1177

Questions and Answers On Asbestos and Health

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WHAT IS ASBESTOS?

Asbestos is the name used to describe a group of fibrous minerals that occur naturally in rock formations around the world. This mineral can be separated from the host rock by milling, yielding millions of very fine fibers—often soft and silky to the touch but of great strength. There are seven varieties of asbestos, but only four are of commercial significance, and one, **chrysotile** asbestos, accounts for about 95% of the world's production. The three other commercially significant varieties of asbestos are **crocidolite, amosite** and **anthophyllite.**

WHO USES ASBESTOS?

Practically everyone in a sense. There are about 3,000 different products in daily use worldwide that utilize in some way the properties of asbestos, either alone or in combination with other materials. The unique properties of asbestos make it desirable as a fireproofing, insulation and soundproofing material, and it is typically used wherever fire or excessive heat is a threat to safety. Because of its strength and durability, asbestos is used as a reinforcement for other materials, particularly cement and plastics.

Asbestos has scores of applications in homes, apartments, offices, plants, and hospitals. Fresh water flows through asbestos-cement pipes in many communities, and the mineral is an important component of sewerage systems because of its resistance to corrosion. Asbestos is used in floor tile, electrical insulation, fire-retardant clothing, lubricants and caulking materials, highway asphalt, acoustical tile, and it is a component of steam, gas turbine, and rocket engines as well as space vehicles. Asbestos is almost indispensable in all these applications.

DOES ASBESTOS FIBER POSE A HEALTH HAZARD?

With only a few reported exceptions, asbestos health hazards are confined to the occupational setting, and occur then only under certain conditions. It is generally recognized that prolonged and heavy inhalation of asbestos fibers can cause asbestosis and generally increases the risk of two other diseases — bronchogenic (lung) cancer, and mesothelioma. Since all these diseases are time-dose related, scientific evidence suggests there are levels of exposure that will not result in any increased risk of disease. Therefore, *these health risks are completely preventable by modern dust-control equipment and procedures.*

It should be noted that in case of *asbestosis*, the average latent period is 17 years, and, as far as can be determined, this form of lung fibrosis *has never been found in the general public.* In studies of *bronchogenic cancer,* there has been only one recorded case of this disease in an asbestos worker who did not smoke cigarettes — all the other cases *were among workers who also smoked cigarettes.* In studies of *mesothelioma*—a rare cancer of the lining of the chest or abdominal cavities—scientific *evidence suggests that materials other than asbestos also can be a factor* in causing this disease.

WHY ARE ASBESTOS-RELATED DISEASES STILL APPEARING TODAY?

Because there is a long latent period for asbestos-related diseases—up to 40 years from first excessive exposure in some cases. Therefore, some cases still are developing among long-time employees whose exposure began many years ago, when, because of the lack of knowledge about health risks on the part of the medical-scientific community as well as industry, the dust control equipment was not as effective as it is today. With expanding medical know-how and today's improved dust-control techniques, equipment and surveillance programs, *there is every reason to believe these cases will decrease in the future* and that asbestos-related disease will cease to be an occupational problem.

DOES ASBESTOS USE POSE ANY HEALTH RISK TO THE GENERAL PUBLIC?

No. Numerous scientific studies have been conducted, and, at present, there is no evidence that

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anyone in the general public has ever contracted any disease from exposure to the minute amounts of asbestos released into community air through the application, use, wearing, or weathering of finished asbestos products. In 1972, a majority of scientists from all over the world who were actively studying the biological effects of asbestos met in Lyon, France. In a report on their collective studies, these noted researchers stated:

> **"There is at present no evidence of lung damage by asbestos to the general public. The amount of asbestos in the lungs of members of the general public is very small, compared to those occupationally exposed."**

These worldwide studies are continuing, and there still is no evidence of any health risk to the general public.

IS ASBESTOS DUST POLLUTING OUR AIR?

Not to any significant degree. Continuing studies in the laboratory and in the field have not shown, to date, that any significant amount of asbestos fiber is released into community air through the wearing of brake linings, asbestos-cement water pipe, roofing tile, paving materials, or similar products containing asbestos. Dust counts taken in New York City and other urban areas show that asbestos dust levels in community air are many times lower than levels considered safe in the occupational environment.

In addition, recent research indicates that small quantities of asbestos fiber from natural sources probably have existed in the natural air surrounding our planet for thousands of years. In fact, man probably evolved to his present form in an atmosphere containing asbestos. And, since *asbestos exists naturally in rock formations all over the world* and is constantly being released into the atmosphere through erosion by wind and water, even if we wanted to, it would be impossible to eliminate asbestos from our natural environment.

ONCE ASBESTOS IS INHALED, DOES ALL OF IT REMAIN IN THE LUNGS?

No. The normal cleansing mechanism of the lung quickly removes more than 90% of the inhaled fibers.

DO BRAKE LININGS RELEASE HARMFUL AMOUNTS OF ASBESTOS DUST INTO THE AIR?

No. Brake linings used in transportation vehicles contain up to 55% asbestos fiber, but *this fiber is locked into the linings* with various resins and polymers. When brakes are applied, enormous amounts of heat are generated, which change the chemical nature of the asbestos into a nonfibrous, nontoxic material. Studies conducted in the U.S. and Great Britain have shown that brake lining dust contains only traces (1% to 3%) of free asbestos fibers.

In addition, tests conducted in New York City at specially selected locations where traffic is heavy and braking frequent have shown that asbestos dust levels are only marginally higher than normal background levels, and many thousands of times lower than levels considered potentially hazardous in the occupational environment.

WHAT IS THE ASBESTOS INDUSTRY DOING TO PROTECT ITS WORKERS?

Every precaution is being taken to prevent any hazard to workers. Today, Johns-Manville and many other companies use the most advanced environmental control equipment and the latest techniques to prevent inhalation of asbestos dust by workers in mining and milling operations, and in the manufacture of products containing asbestos.

Industry has cooperated with labor and government in defining possible health risks and in establishing exposure standards and work safety practices. Constant monitoring of workplaces and evaluation of dust control equipment is carried out in mines, mills and plants throughout the U.S.

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HOW MUCH ASBESTOS HEALTH RESEARCH IS BEING DONE TODAY?

A lot..It's hard to say exactly how much is being spent in both time and dollars, but it is generally recognized that the asbestos health problem is the focus of some of the most widespread research in the world today. The asbestos industry has been active in such research since the first indications of an asbestos health problem were reported.

In the early 1920s, *the asbestos industry sponsored the first studies of asbestos-related disease* ever undertaken in the United States. The industry has sponsored or co-sponsored numerous health studies over the years to determine the health hazards related to asbestos and how to eliminate or control them.

Through the Institute of Occupational and Environmental Health in Montreal, the Industrial Health Foundation in Pittsburgh, and selected hospitals and universities in the U.S. and Canada, *the industry is sponsoring or cooperating today in major epidemiological and medical research projects* designed to identify and eliminate asbestos-related health risks within the industry and in the workplaces of fabricators and applicators of finished products containing asbestos.

IS ASBESTOS USED IN THE MANUFACTURE OF CLOTHING WORN BY THE PUBLIC?

No, not by the general public. In 1971, a clothing manufacturer did import cloth from Italy that contained 8% asbestos fiber and used it to make 200,000 women's overcoats. Although Food and Drug Administration tests showed that the amount of asbestos dust that could be generated from such a coat—even under extreme conditions—would not pose a health problem, the federal agency did decide to ban the manufacture of such "general use" garments. The FDA felt this constituted an "inappropriate use of asbestos fiber, one in which none of the special properties of the fiber that contribute to the welfare of the public are utilized." The asbestos industry concurred in this decision. Garments in which the special properties of asbestos are utilized are fireproof suits, barbecue mitts, aprons, etc. These are not banned by the FDA because they are essential uses of asbestos; because there is no effective substitute for the asbestos in these uses; and because in most of these products the fibers are "locked in" the garments by chemical agents or other means, and therefore pose no health risk.

DO FILTER MATERIALS CONTAINING ASBESTOS RELEASE POTENTIALLY HAZARDOUS QUANTITIES OF FIBERS INTO BEVERAGES?

No. While it is possible that tiny amounts of microscopic asbestos fibrils are released into some beverages from the use of filters containing asbestos, *there is no evidence whatever that their size and quantity constitute any hazard to human health.* On the contrary, asbestos-cellulose filter pads play an important role in clarifying and improving the taste of certain beverages as well as removing potentially toxic substances from the finished product. The mass production of many important injectable drugs would be virtually impossible without the use of asbestos-containing filters.

In 1972, a concensus report from an international meeting on asbestos and health, sponsored by the World Health Organization, found *there was no evidence of an increased risk of cancer* resulting from asbestos fibers present in water, beverages, food, or in the fluids used for the administration of drugs.

IS THE ATMOSPHERE BEING POLLUTED BY ASBESTOS SPRAYS USED TO FIREPROOF THE SUPERSTRUCTURE OF BUILDINGS UNDER CONSTRUCTION?

The use of fireproofing compounds containing asbestos in high-rise building construction has been banned in the United States by the Federal Environmental Protection Agency (EPA) because the

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