Chemical Fact Sheet* October 1981

ASBESTOS

The information in this sheet applies to workplace exposure resulting from processing, manufacturing, storing or handling and is not designed for the population at large. Any generalization beyond occupational exposures should not be made. The best industrial hygiene practice is to maintain concentrations of all chemicals at levels as low as is practical.

Chemical Names: Amosite, amianthus, actinolite, tremolite, anthophyllite, amphiboles, crocidolite, chrysotile, calcium magnesium silicate; CAS 1332-21-4.

Trade Names: Ascarite and others.

Uses: Used as heat resistant insulator, component of cement, as an inert filler, in brake linings and many others.

PHYSICAL INFORMATION

Appearance: Fine, slender, flaxy fiber which can be white, green, blue or grey-brown in color.

Odor: None.

Behavior in Water: Insoluble.

HEALTH HAZARD INFORMATION

OSHA Standard: Average 8 hour exposure -- 2 fibers/cubic centimeter.

NIOSH Recommended Limit: Average 8 hour exposure -- 0.1 fiber/cubic centimeter.

ACGIH Recommended Limit: Average 8 hour exposure -- amosite - 0.5 fiber/cubic centimeter, chrysotile - 2 fibers/cubic centimeter, crocidolite - 0.2 fiber/cubic centimeter, other forms - 2 fibers/cubic centimeter.

Short Term Exposure:

Exposure to any of the forms of asbestos can produce irritation of the nose, throat, skin and eyes, if the levels are above the OSHA standard. While these effects are not usually considered symptoms of extreme toxicity, the OSHA standard is due to the link between asbestos fibers and asbestosis, a severe lung disease. A single exposure to levels of asbestos above 2 fibers/cubic centimeter has been shown to increase the chance of developing cancer as well as asbestosis. Such illnesses and their symptoms take a number of years to develop.

Long Term Exposure:

OSHA requires medical monitoring of workers occupationally exposed to asbestos. Daily exposure to asbestos fibers has been shown to cause an increase in several forms of cancer as well as lung disease. All of these diseases take many years to develop, do not go away when exposure stops and become progressively worse. The long period between exposure and the onset of disease necessitates proper medical examination for anyone who may be occupationally exposed to airborne asbestos fibers. Additionally, it is important to note that family members may be exposed to asbestos fibers on clothing if proper hygiene is not rigorously followed by those individuals who may be occupationally exposed. There is a very large increased risk for lung cancers in those workers exposed to asbestos who also smoke cigarettes.

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*Prepared by the Bureau of Toxic Substances Management, New York State Dept. of Health. For an explanation of the terms and abbreviations used, see "Toxic Substances: How Toxic

Because asbestos can cause cancer, attempts should be made to reduce exposure to the lowest level possible through the use of engineering controls and protective equipment.

EMERGENCY AND FIRST AID INSTRUCTIONS

Inhalation: Move victim to fresh air. Clean any fibers away from nose and mouth. Seek medical attention, if necessary.

Skin: Clean area of contact without inhaling fibers. Remove any soiled clothing.

Eyes: Wash with water for 15 minutes. Seek medical attention if necessary.

Ingestion: Seek medical attention if necessary.

FIRE AND EXPLOSION INFORMATION

General: Non-flammable.

REACTIVITY

General: Stable.

PROTECTIVE MEASURES

Storage and Handling: Keep in closed, impermeable, sealed containers. Protect against physical damage. Do not smoke, eat, or drink in the work area.

Engineering Controls: All hand-operated and power-operated tools which may release asbestos fibers in excess of OSHA standards must be supplied with local exhaust systems. Isolation, enclosure and dust collection should be used. Showers, sinks and eyewash stations should be readily available.

Protective Clothing (Should not be substituted for proper handling and engineering controls): When exposed to over 10 fibers/cubic centimeter the use of special clothing such as coveralls, head coverings, gloves and foot coverings is required. When fiber concentration exceed 2 fibers/cubic centimeter, change rooms with two separate lockers (one for street clothes and one for work clothes) are required.

Protective Equipment: For levels up to 20 fibers/cubic centimeters use a reusable or single use air-purifying respirator. Where levels are up to 200 fibers/cubic centimeter use a powered air-purifying respirator. For levels above 200 fibers/cubic centimeter use a Type-C supplied-air respirator.

PROCEDURES FOR SPILLS AND LEAKS

Wearing protective equipment, use a wet mop or high efficiency vacuum to clean area. Note: Avoid blowing, dry brushing and dry mopping, all of which may raise dust levels. For storing asbestos wastes, use heavy-gauge impervious plastic bags. For final disposal contact your regional office of the New York State Department of Environmental Conservation.

For more information:
Contact the Industrial Hygienist or Safety Officer at your worksite or the New York State Department of Health, Bureau of Toxic Substances Management, Empire State Plaza, Tower Building, Room 359, Albany, New York 12237.