

Johns-Manville Corporation

22 East 40th Street
New York, N.Y. 10016

Executive Offices

June 28, 1971

Mr. Samuel G. Warr, Buyer
U. S. Steel Corp.
600 Grant Street
Pittsburgh, Penna. 15230

Dear Mr. Warr:

Recently you requested toxicological information concerning Johns-Manville Chrysotile Asbestos Fibre.

It is a pleasure to provide you with this information.

Asbestos is the name given a family of mineral fibers comprised of three major types -- chrysotile, crocidolite and amosite - each of which differs from the other; physically and chemically. Studies of the relationship between asbestos and health are complicated by this diversity.

Chrysotile is a white magnesium silicate, which can be attacked by acids, has a positive electrical charge and is flexible and not easily pulverized. Crocidolite is a blue ferrous sodium silicate, is acid-resistant, has a negative electrical charge, and is less flexible than chrysotile. Amosite is a brown ferrous magnesium silicate, has a negative electrical charge and is brittle and easily pulverized.

In the United States, chrysotile, amosite and crocidolite asbestos are all used. Chrysotile is by far the most common, is primarily mined in Canada and the U.S., and accounts for about 90% of the asbestos consumed in this country.

For workers who handle asbestos fibres in mines, mills, factories, and some building and insulation trades, the industry shares with doctors, Public Health officials, and others involved in industrial medicine, a concern about possible health effects from excessive on-the-job exposure to asbestos dust. We have long recognized the risk of a particular lung disease called "Asbestosis" among some workers. This non-malignant disease is brought on after inhalation of excessive concentrations of asbestos dust over a period of many years. Asbestosis is one of the lung diseases called "Pneumoconiosis".

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Recent medical studies have indicated that the disease "Asbestosis" and other pulmonary diseases claimed to be associated with Asbestosis, are dose and time related. The occupational use of asbestos fibre, therefore, can achieve the same degree of safety as the use of any other potentially toxic material, providing adequate control measures are taken.

The current threshold limit value (TLV) for asbestos dust as stated in the Federal Occupational Health and Safety Act, Federal Register, Saturday, May 29, 1971, Volume 36, No. 105, Part II, Page 10506, is 12 fibres per milliliter of air greater than 5 microns in length as determined by the membrane filter method at 430X Phase Contrast Magnification, or 2 million particles per cubic foot of air as determined by the impinger method of sampling.

To control asbestos dust to within the prescribed threshold limit value, we recommend that operations which present a source of dust should be equipped with mechanical ventilation exhausting into a collector; utilize wet processes where possible; maintain good housekeeping throughout the work area, including removing scrap material from floor and other horizontal surfaces. Scrap should be disposed of in closed containers.

A program of industrial hygiene environmental monitoring is highly desirable to determine that threshold limit values are not being exceeded.

If dust concentrations cannot be controlled to within the threshold limit value, U. S. Bureau of Mines approved types of respirators for pneumoconiosis producing dusts should be worn.

I am attaching the following medical references that substantiate dose and time relationship of exposure, as related to the development of disease:

1. "Mortality in the Chrysotile Asbestos Mines and Mills of Quebec"
J. Corbett McDonald, M.D.
Archives of Environmental Health, Volume 22, June 1971
2. "A Study of Mortality of Workers in an Asbestos Factory"
M. L. Newhouse, M.D.
British Journal of Industrial Medicine, 1969, 26, 294-301
3. "Identification and Control of Asbestos Exposures"
L. J. Cralley, Ph.D., U. S. Public Health Service
American Industrial Hygiene Journal, February 1971

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4. "Asbestos and Health in 1969"
G. W. Wright, M.D.
American Review of Respiratory Diseases
Volume 100 - No. 4 - October 1969.
5. "Epidemiology of Asbestos Cancers"
Drs. Wagner, Gilson, Barry & Timbrell
British Medical Journal - January, 1971

Also for your further information I am enclosing the following papers and booklets:

1. Asbestos and Human Health.
2. Asbestos - A Family of Minerals.
3. Asbestos and the General Public.
4. Recommended Safety Practices for Handling Asbestos Fibre.
5. Recommended Health Safety Practices for Handling and Applying Thermal Insulation Products Containing Asbestos.
6. Recommended Practices for Fabricating, Handling and Applying Asbestos Cement Products in the Building & Construction Industries.
7. Recommended Health Safety Practices for Handling and Fabricating Asbestos Textile Products.
8. Why Asbestos?

If you require any additional information, or I can be of further assistance, please contact me.

Very truly yours,

C. L. Sheckler
Manager, Accident Prevention
and Health Administration

CLS:mw

cc: J.R.M. Hutcheson - AFD Asbestos
N. W. Hendry - AFD Asbestos
H. G. Donovan - Research

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