

THE ASBESTOS INSTITUTE

sensible management of a natural resource

No Excess Lung Cancers Detected From Chrysotile Exposures Less Than 50 f/cc

Important Study Finds That at Exposure Levels Below a Threshold of 50 f/cc, Chrysotile Asbestos Is Not Linked to Any Increased Incidence of Lung Cancer.

Preliminary results from the largest cohort study of chrysotile workers ever undertaken were released this past September at the 9th International Symposium on Epidemiology and Occupational Health held in Cincinnati, Ohio. The study, conducted by Doctors F.D.K. Liddell, A.D. McDonald and J.C. McDonald of McGill University evaluated

more than 11,000 chrysotile miners in Québec born between 1891 and 1926. Initiated in 1966, the study was designed to define as accurately as possible the quantitative relationship between exposure to chrysotile asbestos and the incidence of lung cancer. Cohort data has been collected five times since, the latest in May of 1992.

Based on exposure data gathered by the mines, and comparisons of Standard Mortality Ratios (SMR = observed mortality / expected mortality) the authors concluded that any excess cancer mortality was found only among workers exposed to more than 50 f/cc for a period of 20 years or more.

(see No Excess Lung Cancer on page 2)

Inside

Previous Data on Chrysotile Exposure Support New Findings

A/C Pipe Makes a Resurgence in the U.S.

EPA's Science Advisory Board Critical of Agency's Asbestos Program

Overturning the Verdict on Carcinogens

Code of Practice for Synthetic Mineral Fibres

U.S. Study Links Fiberglass to Lung Disease

Policy Considerations and Theory, Not Science Have Guided Asbestos Regulations

For years the linear model of risk analysis has been applied to the regulation of chrysotile asbestos exposure. Today scientists are questioning the validity of this approach.

The linear model of risk analysis holds that a substance which is toxic at extremely high doses can have a health impact at levels many orders of magnitude lower - even if there are no observable effects at these levels. The linear model maintains that effects may exist, yet

are not detectable with current techniques. This model has traditionally served as a guideline for setting exposure limits and other regulatory action. In the face of mounting evidence that for many known carcinogens there appears to be a threshold level of exposure below *(see Policy Considerations on page 4)*

U.S. Study Links Fiberglass to Lung Disease

Does prolonged exposure to fiberglass adversely affect pulmonary functions or produce radiographic abnormalities in humans ?

A recent study by researchers at the University of Southern California (USC) School of Medicine concluded that commercial rotary spun fiberglass appears to produce human disease that is similar to asbestosis. The study, conducted by K. Kilburn, D. Powers and R.H. Warshaw was published in the October issue of *The British Journal of Industrial Medicine*. It examined 284 workers at an appliance factory where refrigerator doors and cabinets were insulated with fiberglass sheeting and loose rotary spun fiberglass. Workers with exposures of twenty years or more were evaluated on a number of tests of respiratory functioning including lung volumes, chest x-rays and physical examination.

The researchers found that in addition to eye and throat irritation in about 20% of the population studied, expiratory flows, which indicate pulmonary dysfunction, were significantly impaired. 43 workers also had evidence of pneumoconiosis on chest radiographs. The authors believe that 36 (13%) of these pulmonary opacities or plural abnormalities were due to fiberglass exposure.

A postmortem analysis of one worker who died just prior to the study showed a substantial accumulation of glass fibres in the lungs. A transmission electron microscopy examination showed that each lung contained approximately 178,000 fibres.

Charles Rossiter, former professor at the London School of Hygiene and Tropical Medicine who currently acts as a consultant to the insulation industry disputes the study's conclusions. He argues that the study does not adequately recognize the compounding effects of smoking and that the control group was not representative. Mr. Rossiter does nonetheless urge the Man Made Mineral Fibre industry to undertake further study into the health effects on users.

Jim Merchant, a leading American authority and director of the Occupational and Environmental Health Department at the University of Iowa believes that this study is "in line with what we know about fiberglass". Mr. Merchant warns that "this may have a lot of implications for people who work in building and construction." Other major American and European cohort studies of the occupational health risks for workers in the Man Made Mineral Fibre (MMMF) manufacturing sector have found lung, trachea and bronchus cancer rates in excess of those expected. ■

Sources:

Marsh, G.M., Enterline, P., Stone, R. & Henderson, V.L., *Mortality among a Cohort of USD Man-Made Mineral Fibre Workers: 1985 Follow-up*. J. Occ. Med. 32, 594-604, 1990.

Simonato, L. et al. *The man-made mineral fibre European Historical Cohort study: Extension of the Follow-up*. Scand. J. Work, Env. Hlth, 12, Suppl 1, 34-47, 1986

Code of Practice for Synthetic Mineral Fibres

In response to recent human and animal data, representatives from the Quebec Federation of Labour (QFL), with the support of the Canadian Labour Congress have written a draft Code of Practice for the use of Synthetic Mineral Fibres (SMF). The code would include descriptions of SMF, summaries of their health effects, as well as recommendations for proper monitoring, safe work practices and exposure limits. The code would detail work practices based on the different risk factors accorded to various fibres.

A number of recent studies (see article *U.S. Study...*) have found evidence that exposures to some types of SMFs can have serious health effects, including eye and throat irritation, pulmonary dysfunction, non-malignant disease and cancer. Despite the growing concerns of scientists, regulators and the labour movement, some industry representatives such as Frank Cereghini, manager of Occupational Health and Safety at Owens-Corning/Fiberglass Canada maintain that insulation fibres are not carcinogenic.

A new Code of Practice is intended to eliminate the inter-provincial inconsistencies which exist in worker protection policies across Canada and provide guidelines for government policy and industry practices. ■

