

FNI - C. Larson, V. Keim, D.L. Carter

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HERA Headlines

* Analysis Warning to TEM Laboratories

In preparing for a surface dust sampling project, McCrone Environmental Services, Inc. discovered a problem with preparing Nuclepore brand "Membra-Fil" 0.22 μ pore size mixed cellulose ester (MCE) filters, stock number 140628 (25 mm diameter) and 141128 (47 mm diameter).

The samples were to be analyzed using an indirect prep procedure that required filtering a water-based solution through these filters and dissolving the filter material on acetone Jaffe wicks, as per the standard NIOSH 7402 preparation method for MCE filters used for air sampling. The filters would not dissolve with acetone even though the literature accompanying the filters indicated acetone as an acceptable dissolving agent.

A call to Nuclepore revealed that the 0.2 μ pore size MCEs, which are often

used for water samples, are not manufactured in the same manner as the 0.45 μ pore size MCE filters that are marketed for air samples. To facilitate water filtration the 0.22s are treated with a wetting agent, which prevents clearing on acetone wicks.

Nuclepore provides some guidance to laboratories that may use MCE filters for other applications: MCE filters marked "MF" are surfactant-treated, whereas those labeled "MR" are untreated and should easily dissolve with acetone. However, all of the 0.22 μ m MCE filters available at this time from Nuclepore contain the wetting agent.

McCrone's follow-up research proved that dimethyl formamide (DMF) successfully dissolves the Nuclepore 0.22 μ pore size Membra-Fil filters.

By Joseph A. Krewer and Harriotte A. Hurley, CIH, McCrone Environmental Services, Inc.

experimental evidence, lung burden analysis and epidemiological evidence of dose-response relations. Based on this review, the experts could not state definitively that there is a level of exposure to asbestos below which there is no risk. Yet they were of the opinion that a level of control can be achieved at which the lifetime risks of lung cancer or mesothelioma are non-existent or are so small that they could only be detected by a very large study. The group then prepared a list of recommendations to the WHO, which included the following:

For chrysotile asbestos, on the basis of health, it is recommended that the Occupational Exposure Limit (OEL) for an individual worker should be 1 fiber/ml eight-hour time weighted average (TWA). It is, however, appropriate for those countries which have not yet set an OEL to set it initially at 2 fibers/ml eight-hour TWA, with the intent that it should be further lowered as soon as practical.

For crocidolite and Amosite asbestos, on the basis of health, it is recommended that the OEL should be zero. It is, however, appropriate for the government authorities to permit use of crocidolite and Amosite for special purposes, when replacement is not reasonably practical, provided that steps are taken to ensure that the health of workers and users of the products is not placed at risk.

The Group of Experts Meeting in Oxford may impact the asbestos-in-buildings issue in two respects. First, it brings up the issue of distinguishing between chrysotile and amphibole groups of fibers for regulatory purposes. Second, it supports recommendations from EPA that universal removal programs of friable insulation materials are not always warranted. Provided the materials are in good condition and not easily disturbed, managing the asbestos is a viable alternative to removal. Managing the asbestos includes conducting training, implementing an operations and maintenance program, and removing the asbestos at the time of renovation or demolition.

Global Outlook

* WHO Convenes Group of Experts to Recommend Occupational Exposure Limit for Asbestos

On April 10-11, 1989, a Group of Experts Meeting was convened in Oxford, England, by the World Health Organization (WHO) to review and update the present scientific information regarding the relative risks associated with specific exposure levels for asbestos, in order to identify the efficacy of recommending an occupational exposure limit.

The meeting was organized because it was felt that many countries in the developing world needed guidance on setting occupational exposure limits for asbestos in order to comply with the international labor standards set out in the International Labour Office Convention 162, Safety in the Use of Asbestos.

The meeting was chaired by Sir Richard Doll, an epidemiologist at the University of Oxford, and included experts from the United Kingdom, the United States, Canada, Japan, France, the Soviet Union, Sweden, Turkey, Brazil, Nigeria, China, Malaysia and Finland.

Representatives from non-governmental organizations, such as the International Federation of Chemical, Energy and General Worker's Unions (ICEF), and various WHO collaborating centers and programs also participated in the consultation meeting.

Two background documents had been prepared prior to the consultation meeting, and extensive review was made of the most recent data from animal

WHO...

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The full report accompanied by the two background documents is expected to be available sometime this summer. Those interested in copies of the docu-

ments should contact the Asbestos Institute, 1130 Sherbrooke St. W., Suite 410, Montreal, Quebec, Canada H3A 2M8; (514) 844-3956; fax (514) 844-1381.

By Scott Houston, The Asbestos Institute, Canada

Global Outlook

ILO Conducts Meeting on Safety in the Use of Mineral and Synthetic Fibers

From April 17-25, 1989, the International Labour Office (ILO) in Geneva presided over a meeting of experts who studied the question of preventive and protective measures related to the occupational health risks due to exposure to fibers, whether natural or artificial, other than asbestos.

Fifteen experts were invited to the meeting. They represented various governments, and the employers' and workers' groups of the Governing Body of ILO.

Several observers and advisors also attended the meeting, representing the World Health Organization, the Commission of European Communities, the International Organization of Employers, the International Confederation of Free Trade Unions and various other labor and employer organizations.

The participants were invited to review a working document that covered the general characteristics and manufacturing methods of man-made mineral and synthetic fibers, the occupational and non-occupational exposures, the health effects and their evaluation with regard to human risks, the monitoring of airborne dust, the preventive and control measures, and the laws and practices in selected countries.

Special emphasis was given to glass wool, rock wool and slag wool, as well as to some more recently developed synthetic materials, such as refractory (ceramic) fibers and aramid fibers. They noted that the possibility for harmful effects on the health of workers exposed to these fibers was supported by results of animal experiments and some epi-

demiological evidence. Reference was also made to evaluations made by the International Agency for Research on Cancer (IARC), which has classified glass wool and special purpose fibers, ceramic fibers, rock wool and slag wool, as class 2 B carcinogens—possibly carcinogenic to man.

With regard to synthetic organic fibers, the experts expressed their reservation on the validity of the assessment of the health effects of these materials, as no evaluation was available by the IARC. The experts agreed that there was evidence that, at high concentrations, certain aramid fibers could cause fibrosis and lung tumors in animal inhalation studies. No similar studies had been reported for other synthetic organic fibers.

Following the review of the working document, the experts produced a report that included their conclusions and recommendations. Among those was an urgent recommendation that the ILO

should prepare and adopt, as early as possible, a "Code of Practice" on Safety in the Use of Insulation Wools. A convention on Safety in the Use of Mineral and Synthetic Fibers was considered premature in view of the lack of knowledge on many of these fibers. Experts did agree, however, that where knowledge is insufficient, preventive and control measures should be implemented, on a temporary basis, with the understanding that the adequacy of these measures be reviewed when new information is available. The control measures considered by the group of experts follow closely those outlined in the Code of Practice on Asbestos, published by the ILO in 1984.

The Geneva meeting confirmed growing scientific opinion that long, thin, durable fibers are the most hazardous, and that in all cases, the objective should be the reduction of exposure to airborne respirable fibers. These findings have important implications for building owners confronted with material replacement decisions. Many of today's products contain man-made mineral fibers which can create respirable dust during installation, repair and removal activities. Regulations appear eminent for these materials. Consequently building owners, when choosing replacement materials, must ensure that they improve their situation and not put themselves in the position of having to make the same decision five to 10 years from now as they are facing today with friable asbestos insulation products.

By Scott Houston, The Asbestos Institute, Canada

Training Notes

NDAA Listings Available at Reduced Rates

The National Database of AHERA Accreditation is working. The first two sales of customized listings were sold in mid-June just before the beginning of a full-throttle marketing blitz. The database, funded by an EPA grant, gathers skill and demographic information from AHERA-discipline trained workers and

compiles that information into report form for local education agencies, building owners and managers, and other interested parties.

A brochure fully explaining the program and a press release campaign to enhance visibility in the asbestos control-related and schools-oriented media is