

BULLETIN

NO. 533

May 21, 1975

REPORT ON ASBESTOS STUDY COMMITTEE MEETING

In late April, the Asbestos Study Committee met and discussed several subjects -- with emphasis on asbestos in the work place. One of the agenda items was entitled: "The OSHA Regulations and the Membrane Filter Method for Measurement."

Excerpts of the minutes of this meeting on the above agenda item are enclosed. These excerpts indicate our industry's problems with the reliability of the membrane filter method for measuring airborne asbestos concentrations, and they emphasize the Members' concern where this procedure will be used for enforcement.

We are making additional enclosures with the copies being sent to the individual listed below:

These additional enclosures include:

1. Price Sheet on Nilfisk Industrial Vacuum Cleaner
Models GA-71, GA-72, GA-73.

Nilfisk of America, Inc.
706-8 Buncombe Street
P. O. Box 143
Greenville, S. C. 29602

2. Report of Joint AIHA-ACGIH Aerosol Hazards Evaluation
Committee: "Recommended Procedures for Sampling and
Counting Asbestos Fibers."

This article is copyrighted and reprints
are available as indicated on the first
page (Page 83)

Note: In the first two pages, a guard or
shroud is attached to the filter holder.
This may help in eliminating sporadic
high counts.

E-3
(5)

Reasons for two enclosures are given in the excerpts from the Asbestos Study Committee meeting: (1) The Nilfisk Cleaner has helped in cleaning up the workplace, when used in addition to a good central collecting system; (2) Use of the shroud may be of help in reducing the sporadic high counts from asbestos that ordinarily would not be taken into the respiratory tract.

The foregoing information is sent for use by those responsible for compliance with the OSHA Regulations.

EWD/erc

Enclosures:

cc- Active Members

Regional Members (U.S. Copyright)
Asbestos Study Committee

E. W. Drislane

Executive Director

EXCERPTS FROM APRIL 28, 1975 MEETING
OF ASBESTOS STUDY COMMITTEE

The OSHA Regulations and the Membrane Filter Method for Measurement

Originally this subject was to be two items on this agenda: (1) The Membrane Filter Method for measuring airborne asbestos concentrations, (2) The OSHA standards with emphasis on the July 1, 1976 two fibers/cc limit. In discussing these subjects it was found difficult to separate the membrane filter technique from the OSHA standards. They are being combined for purposes of these minutes.

It was suggested that with the current economic climate that perhaps there might be some de-emphasis in OSHA regulations. There has been de-emphasis on seat belts, and bumpers, emissions control and it was suggested that perhaps OSHA might ease off on their regulations. One Committee member said that it was most unlikely that there would be backtracking on the OSHA regulations. If anything they might be stiffened. One member stated that there were five different types of asbestos and that some were more harmful than others. It was suggested that while this might be so, all asbestos is apparently linked with lung cancer and asbestosis. It would be difficult to win an argument that there are some types of asbestos that are not harmful to the respiratory tract.

At this point the method for counting fibers was discussed. It was stated by one member that originally a fiber would ^{not} be counted if it was not totally within the field. This was from Johns-Manville course on the use of the membrane filter technique. It was stated now that anything that is in the top or the left hand borders of the sample, even if only partly in the field, are to be counted. Another member indicated that when he took the NIOSH course at Cincinnati that this was the way that he was told to count: any fiber on the left hand or top border, even if not fully within the field being counted, would be counted in that field.

It was stated that the crystallization of the solvent used on the slide could sometimes make it appear to be an asbestos fiber. There is a method of preparing the slides so that the formation of crystals will not appear similar to asbestos fibers for counting purposes. This method is apparently used by most companies doing their own counting of the fibers. It was pointed out also that slides should not be re-used. Re-used slides may accelerate crystallization of the solvent.

It was stated there is as much variation in readings of fiber count as there are people making readings. One member suggested that he used the NIOSH manual as a Bible. It was stated that this manual was subject to wide interpretation. A member indicated that he exchanged samples with NIOSH in Cincinnati and has had decent correlation with their counts. It was stated that on the lower counts that three different readings would come out plus or minus 10% on the count. However, when higher counts were read, the three different readings would come out with plus or minus 50% in the count. Over how long a period were these samples collected? One member stated that OSHA takes 8-hour samples. Another states that they took samples for a minimum 3-hour period with a 30-minute cycling. Another had three one-hour periods for collecting samples using one filter. As regards differences, it was stated by two members that the OSHA inspectors have actually picked up lower counts than some of the members. It was stated that there were differences in results depending upon whether the counts were done in house, by outside organizations or by government people. With these differences in fiber count, a question was raised

as to how can one solve a problem when they don't know how severe the problem is. In response to a question as to what this Committee could recommend it was suggested that members should at least test each operation every six months.

In attempting to get counts down to the 5 fiber limit and eventually down to two fibers a member stated that good housekeeping is required. Several members mentioned the Nilfisk vacuum cleaner. This particular vacuum cleaner can be used for getting into places that a central unit cannot reach. It has a plastic bag liner and runs on a 15 amp circuit. Of the movable type vacuum cleaner the members seem to prefer this Nilfisk. This is a Swedish make vacuum cleaner. More information will be gathered on this vacuum cleaner for distribution to the members. In addition it was suggested that one must have a good central collection system. One that was mentioned was the JM modified central vacuum system, which utilizes the main duct system as a central vacuum system. Several members stated that good-housekeeping was one of the main things that must be taken care of in order to bring the fiber count down. It was suggested that there are three points for good housekeeping: (1) Good shrouding and good dust collection; (2) There should be a central cleaning system for the work area; (3) The Nilfisk vacuum cleaner should be used for general housekeeping in the work area. In addition it was stated that there should be no dry sweeping in the work area.

It was suggested that the friction materials business is different from regular asbestos manufacturing. In addition to asbestos, we have other materials in the product such as resins, carbon blacks, friction dust and various minerals. It is possible that some of these may be picked up during the sample gathering before the count. In some cases these will be counted by operators as being asbestos fibers. In essence it is more difficult to count asbestos in a friction material environment than it is in a textile environment. It is felt that there may be greater difficulty in getting consistent readings on fiber counts in the friction materials business. For that reason friction material manufacturers would prefer a work practices oriented standard.

It was stated that the membrane filter method should not be abandoned as it is the only tool for measurement. However, reliance on this tool for enforcement may be almost unbearable in friction materials factories. It was suggested that OSHA be advised of our industry's concern with the wide variation in fiber counts. Based on the fact that materials other than asbestos might be involved, it is necessary that the counts be interpreted realistically. In other words, while the membrane filter method may be the only method that is available currently for measuring airborne asbestos, and it is not felt that there is another method that can take its place, it is a tool that should be used by manufacturers only in trying to clean up their areas. It is not felt that this tool is accurate enough to be used for enforcement purposes. It is suggested that OSHA inspectors must realize this before factories are closed down and fines are levied when there is doubt as to how accurate the measurement is. Because of the wide variation in results there is concern among members as to the millions of dollars now being put into control methods. Even with these expenditures, there is no way of knowing positively whether industries are getting their counts down to required levels. Various words were used to describe the reliability of the membrane filter method for enforcement: One indicated that it was "unreliable," and another indicated that it was "inadequate". The emphasis was that it is the only tool now available but it is not the proper tool for enforcement.

Ironically, it had been suggested by some government people in the past that the friction material industry would be the first to comply with the OSHA standards. NIOSH felt that the friction materials business could most readily meet these standards. At this meeting, industry members are indicating that it may be more difficult for the friction materials business to meet the levels because of the difficulty in counting fiber samples. It was suggested that if we're having difficulty

meeting the 5 fibers/cc limit currently, it would be near impossible to meet the 2 fibers/cc limit due July 1, 1976. It was suggested that the Industry should oppose this change.

It was stated that realistically it is unlikely that OSHA will not go to the 2 fiber/cc limit on July 1, 1976. The only question is will they go lower than the 2 fiber limit? Dr. Selikoff has spoken of a 1 fiber/cc limit and has even said no fibers. It was stated that the Asbestos Information Association had circulated information concerning the NIOSH suggestion that the friction materials business would come under the standard now. Such literature was never received by the Institute. Most members on the Committee were unfamiliar with this NIOSH suggestion.

As had been suggested earlier, it is necessary to make the counts as accurate as possible. For this reason suggestions on counting procedures, possible crystallization of solvents, and a prohibition on the re-use of slides are important. Mr. Weaver pointed out that in a recent publication he noted that a plastic shroud is placed about the entrance to the pump being worn at the work place, in order to keep large particles of asbestos from getting pulled in to the filter. This shroud would prevent material from being taken from a worker's clothes as well as from some large pieces that would ordinarily fall to the floor without being inhaled. He stated that Turner Brothers has been using such a shroud. The unit is completely open on the front and it is felt that this technique gets rid of some sporadic high counts. Mr. Weaver will get a copy of this and distribute it to the members. This could be another possible improvement in the sampling technique which might make the membrane filter method more palatable. It was suggested that this be considered and perhaps a proposal be made to OSHA for its use. The problem is twofold: (1) Improving the reliability of the membrane filter technique, and (2) The use of the membrane filter as a tool for enforcement with its lack of reliability.

This subject has been fairly well covered. There was some agreement about the problems in using this technique as a tool for enforcement of the OSHA regulations. The question was what should be done about it? One member stated that the Committee would be remiss if it did not advise the members of these difficulties. It was suggested that the Board of Directors be advised that there is a problem and that there is going to be more of a problem when the 2 fiber limit is put into effect. To repeat the problem: while we need the membrane filter method as a tool for measurement, this tool is not suitable for enforcement purposes. It is suggested that when the 2 fibers/cc limit takes effect that this will become a most serious problem.

Recommendations should be put into effect on instructions to employees, the use of vacuum cleaners, the use of dust collecting systems, disposal, etc. When these work practices are put into effect the area will be cleaner. It was suggested that the Institute contact the Asbestos Information Association concerning the use of the membrane filter technique for enforcement. (See later section of these minutes concerning Asbestos Information Association). The Industry must concentrate on collecting, cleaning and housekeeping, using the membrane filter as a tool to see how the levels are being reduced.

One member brought along a work sheet with target dates for completion of various items that will help in meeting the OSHA standards. This is essentially a schedule with dates projected for each step which will move their factory nearer to compliance. The aim is to have the factory at the 2 fiber limit by July 1, 1976. Various critical areas are covered with detailed steps projected to clean up each area. It was suggested that this was almost necessary for control and would certainly help in proving intent to comply with the regulations.