

5. Conclusions

Due to the small size of the asbestos fibres present in the ambient environment, electron microscopy plays an important role in their qualitative and quantitative determination. For the same reason large magnifications have to be used, which means that only very small samples can be investigated in a reasonable time resulting in relatively rough estimates (order of magnitude) of the asbestos concentrations which have to be determined.

It should be noted that there is a growing tendency to report investigations in weight concentrations* as there exists a tendency for larger fibres to fall apart into small fibrils during the qualitative assessment of the concentration. Sizes determined during the qualitative investigation give an indication of the fibre size as found in the environment and should be reported separately. Without this information the conversion of weight concentration (weight of fibres/volume of air) into a numerical concentration (number of fibres/volume of air) and vice-versa is not possible.

The E.E.C. Workshop on metrology in 1976 concluded that:

Air

1. Ambient air is and has been monitored for asbestos in some of the Member States, but only a few of the monitoring programmes are systematic in nature and carry out a detailed examination of the nature of the fibres.

2. In view of the possible importance, from the public health standpoint, to determine and identify fibres in air which are sub-microscopic in size, analytical techniques using the electron microscope are required.

The availability of analytical facilities for such measurements being limited and each determination being time consuming and costly, the number of analyses, even in a comprehensive monitoring programme, must be limited.

*) To prevent misunderstandings it should be pointed out that this statement concerns the ambient environment. For the maximum allowable concentrations which are applicable under occupational conditions there is an increasing tendency to follow the methods used by HM Factory Inspectorate, reporting the concentrations in fibres/cm³.

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