

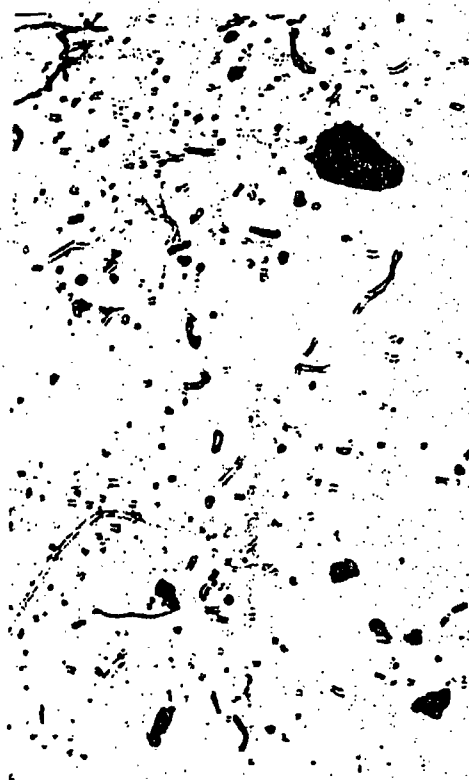


Figure 6. Asbestos and non-asbestos particles before the application of refractive index liquid. 500X. (Sample D).

TABLE III
Data from IAM Analysis

Sample	C	D
% of Non-Asbestos	0	31.9
% of Particles 5 μ m or >	12.7	3.3
Fiber Count. ml 5 μ m or >	0.6	1.1
Average Particle Size	2.9 μ m	2.3 μ m

Discussion

The present use of the "total fiber count" system as recommended by the NIOSH for overall evaluation of asbestos concentrations coupled with the "open-face" filter collection technique can be a source of error in the measurement of exposure to asbestos. The low number of total particle count and an approximately 1/9000 analyzed area of the



Figure 7. Same area as shown in Figure 6 after application of the refractive index liquid. 500X. (Sample D).

total filter surface (as specified by NIOSH) along with the non-uniform particle distribution cannot produce a reliable analysis. The presence of asbestos resembling fibers also adds to the problems.

The accuracy of the IAM method relies on two important facts, the large number of particles counted, and the large number of areas covered. It is also important that within these areas *all* particles are counted. These factors will minimize the uncontrollable errors. There is no correlation between the results obtained by IAM and the microscope counts of Samples C and D (Tables II and III). This is due to the fact that Sample D is composed to almost one-third of non-asbestos particles.

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