

TABLE 2
RATIO OF FIBERS/CC LONGER THAN 10μ ($430\times$ MF) TO MPPCF
($100\times$ IMPINGER) BY PLANT AND OPERATION

Operation \ Plant	A	B	C	D	Ratio of average concentration by operation
Fiber preparation	5	4	1	3	1.7
Carding	3	3	2	3	2.5
Spinning	2	2	1	4	2.5
Twisting	2	1	3	5	2.7
Weaving	3	8	4	4	3.8
Ratio of average concentration by plant	2.2	2.7	1.2	4.5	Ratio of grand means 2.7

Fibers longer than 10μ

The concentrations of fibers longer than 10μ determined from the same membrane samples as above was also compared with the particle count by impinger. Table 2 shows the ratios of $10+\mu$ fibers per ml. to impinger counts in mppcf for 5 major operations in four plants. The ratios of average concentrations range from 1.7 to 3.8 by operation and from 1.2 to 4.5 by plant; individual operations are even more variable (one or two samples with extreme ratios can cause a considerable change in the least squares line which best fits the data). The data exhibit about the same degree of scatter indicated in FIGURES 1-5.

FIGURE 7 shows the cumulative percentage of $10+\mu$ fiber concentrations and impinger concentrations. To compare the $10+\mu$ fiber concentrations with the concentrations by impinger, the pairs were divided into two groups as before; fiber preparation and carding in one, and spinning, twisting and weaving in the other. In both sets of data, 90 per cent of the counts from impinger samples were less than 5 mppcf and in both sets, 90 per cent of the concentrations of fibers longer than 10μ from the membrane filter samples were below 15 per ml. (Individual operations had cumulative percentages equal to the percentage below 5 mppcf at 9 to 21 fibers longer than 10μ per ml.)

Both methods of analyzing the comparative data suggest that the ratio

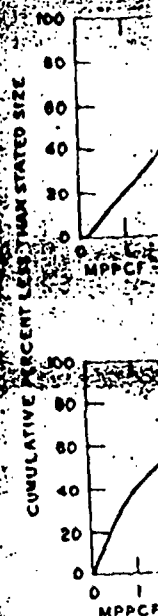


FIGURE 7. P_{10} than 10μ with

of impinger 10μ is

Not enough counted for impinger and membrane filters the 10μ fibers than 5μ and a 10μ fiber

Sample with triator of the were compared sampling and

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