JOHNS-MANVILLE RESEARCH AND ENGINEERING CENTER

Report No. 404-58

Date November 21, 1969

Title: FIBER IN BEER - Evaluation of J-M and Turner Brothers Methods of Analysis

SUMMARY

Earlier this year it was discovered that Johns-Manville was reporting fiber contents in beer that were 100 to 1000 times larger than values being reported by Turner Brothers Asbestos Company, Ltd. (TBA). To try and locate the source of this disparity, a number of beer samples were exchanged, these samples being split so that portions from the same sample would be analyzed by both J-M and TBA. Results of these analyses showed that large differences still existed in amounts of fiber reported. Therefore, a study was initiated at J-M to evaluate both methods.

The J-M evaluation included a study of the homogeneity of rubouts, accuracy of the rubouts and counting procedure using mixtures of known chrysotile content, a review of the counting procedure, comparison of the two methods in our labs on the same sample of beer, and a study of the TBA method itself.

It was found that in the J-M method the rubouts are satisfactorily homogeneous, a question that had been raised by TBA. The TBA method is believed to understate the amount of fiber present due to non-detection of material on the solid portions of the grid and understatement of the weight of a chrysotile fibril. Differences in procedures of sizing fibrils on the print or electron micrograph plate results in J-M reporting significantly greater fiber volumes than TBA.

Since the above factors could explain much, and perhaps all, of the differences between the J-M and TBA values for fiber in beer, it is recommended that those factors be carefully reviewed by J-M and TBA.

In addition, analysis of mixtures containing known amounts of chrysotile revealed that the J-M method underestimates the amount of fiber present; it is recommended that J-M further investigate this area.

Contents: Summary, Introduction, Analysis of Exchange Samples, Current Evaluation, Discussion, Conclusions, Recommendations, Appendices I through VII.

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