

Results

The object of the tests was to determine what proportion of the asbestos known to be present in the lining appeared as free fiber in the decomposition product. No attempt was made at a mass balance between the material worn from the lining and the decomposition product since it was not possible to collect all of the decomposition product. However, the percentages obtained in the fraction of decomposition product examined are applicable to the total material worn from the brake and may be compared to the percentage of asbestos originally present.

In all but a few tests the automobile drum brake linings showed less than 1% free fiber in the decomposition product as compared to about 50% in the lining. An electron micrograph of the decomposition product obtained from a typical test in this group is shown in Figure 3. In those tests where a significant mass of free fiber was released (Figure 4), the temperature was in an extremely high range for the lining in question as evidenced by rapid drop in the coefficient of friction. Had these linings been subjected to like conditions in a vehicle, the brakes would have failed.

Similar results were obtained in the bus and truck drum brake tests and in the clutch test. The experimental model disk brake tested did release some (>5%) free fibers, but no conclusion can be drawn from a single sample.

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