distribution. Free chrysotile fiber bundles and fibrils were observed in all ten samples (Fig. 1). Selected area electron diffraction analysis of representative fibers demonstrated the preservation of the chrysotile structure (Figs. 2A & B). Some patterns displayed arcuate reflections suggestive of interfibril rotation and intrafibril displacement (Figs. 2A & B). Occasionally, fibers were observed without characteristic chrysotile morphology, with mottled surfaces and obliterated fibrils, indicating partial or complete recrystallization. Electron diffraction patterns obtained from these particles displayed polycrystalline characteristics of multiple random reflections or Debye-Scherrer rings rather than the distinctive single fiber chrysotile pattern (Fig. 2B). Microchemical analysis with a probe technique on the unaltered fibers showed them to possess the usual Mg·Si ratio of chrysotile (Fig. 3). In addition to free chrysotile fiber bundles and fibrils, chrysotile was also frequently observed projecting from the margins of binder fragments

Free asbestos fibers present in the decomposed lining dusts were sized at 42,000X magnification. The results, seen in Table II, show that most fibers are too small to be seen by optical microscopy; almost all of them are shorter than 0.4μm in length; virtually all are of respirable size. Hatch (1970) in reporting on optical fiber counts obtained from brake cleaning operations with compressed air jet, found that 94% of the fibers fell in the 2-5μm length category, while only 6% were longer than 5μm. Jacko and DuCharme (1973) made size distribution measurements of asbestos fibers in brake dusts generated during dynamometer tests, using both optical and electron microscopy. They found, at magnifications of 22,000X, that 30% of the fibers were from 0.25μm to 0.50μm in length and that 60% were longer than 0.50μm. Some discrepancies between our data and those of Jacko and DuCharme may be