

screened to pass 200 mesh. Since the material as received contained many long fibers, it was ground in a steel ball mill to reduce practically all the particles to 3 microns or less in size. When used alone in the standard dusting machine, this finely-ground asbestos tended to pack in the hopper and it became necessary to mix one volume of the unground material with three volumes of the ground to generate a satisfactory dust cloud. It is pertinent to mention here that the addition of the small quantity of unground asbestos was unfortunate because it confused the interpretation of results.

The composition of the short-fiber asbestos as received is disclosed by the chemical and petrographic analyses given in tables 2 and 3. Samples taken before and after grinding yielded about the same values on analysis, indicating that there was no contamination from the mill or loss of water content. The dust concentration varied during the experiment, the light-field counts for atmospheric samples collected inside the animal cages with the impinger apparatus ranging from 83 million to 182 million. The average of counts was 130 million for the first year of the experiment, 134 million for the second year and 140 million for the third year. Size-frequency measurements of air-floated dust from inside the cages at a magnification of 1300X revealed a great preponderance of fine particles, nearly 90 per cent of the particles seen being smaller than 3 microns. It was estimated that approximately 1 per cent of the dust was in the form of fibers greater than 10 microns in length.

Four species of animals - guinea pigs, white rats, cats and rabbits - were used in this experiment. The results of the dust exposure, summarized in table 5, are presented in greater detail below.