

# EXHIBIT 5

AFFIDAVIT

STATE OF NEW JERSEY)  
                                  : ss.:  
COUNTY OF SOMERSET )

WILLIAM H. ASHTON, being duly sworn, deposes and  
says:

1. For thirty-five years, I was actively involved in investigating and studying the domestic and international talc industry and talc technology while employed by Johnson & Johnson. In the course of this work, I examined talc deposits in the United States and throughout the world. I graduated from the University of Pennsylvania in 1940 with a Bachelor of Science degree. My major field of study was chemistry; my minor fields of study were geology and mineralogy. I did graduate work at Louisiana State University and also received training in talc minerals at the Battelle Memorial Institute in Columbus, Ohio, which included consultations with the Geology Department of Ohio State University. I have been retired since 1984, but have remained an active member of various talc and mineral committees of the American Society for Testing and Materials and the International Standards Organization.

\* 2. From the 1940s through the 1980s, talc mined in Vermont and specifically, the talc mined by Engelhard Corporation (and its predecessors) from the talc mine located in Johnson, Vermont (the "Johnson mine") has been considered to be talc free from contamination by asbestos. This conclusion is the result of numerous investigations, examinations and studies of the Johnson mine. The following paragraphs discuss, in chronological order, these studies and investigations.

3. In 1949, Warren L. Hogue, Jr. and Frederick S. Mallette published a scientific paper entitled "A Study of Workers Exposed to Talc and Other Dusting Compounds in the Rubber Industry" (a copy of which is annexed hereto as Exhibit A). The authors studied workers in two rubber plants who had been exposed to talc and other dusting compounds for periods as long as 36 years. The authors noted that "[t]he dusting compound used in the tube operations and in rerolling liners is a pure talc from a deposit near Johnson, Vermont, and contains no free silica, tremolite, chrysolite, chrysotile, or actinolite." (Exhibit A at 360) The authors identified the talc discussed in their study as being produced by Eastern Magnesia Talc Company (Exhibit A at 363-64), a predecessor of the Engelhard

subsidiary of the same name which produced talc from the Johnson mine.<sup>1</sup>

4. In March 1951, the U.S. Geological Survey published a report written by Dr. Alfred H. Chidester (and two co-authors), entitled "Talc Investigation in Vermont, Preliminary Report" (relevant portions of which are annexed hereto as Exhibit B). Dr. Chidester was employed for 39 years by the U.S. Geological Survey, a unit of the U.S. Department of the Interior. For a period of about 18 years, from 1944 through 1962, he was primarily concerned with the talc deposits of Vermont and northern Massachusetts. (From 1963 to 1971, while still employed by the Geological Survey, he was primarily involved with the United States lunar exploration program and training astronauts in field geology.) Dr. Chidester has an extremely prestigious reputation for his studies of the geology of talc deposits in the United States. In this 1951 report, Dr. Chidester stated:

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<sup>1</sup> The Hogue and Mallette study concluded that "[p]hysical examinations and chest roentgenograms of a group of 20 men exposed to talc dust (hydrous magnesium silicate) for periods ranging from 10 to 36 years in rubber inner tube production were normal for men of their age group and urban industrial environment" and "[t]he findings of the present study indicate that long exposure to talc does not appear to produce pathologic changes in the lungs." (Exhibit A at 364)

"All the commercial talc deposits in Vermont are associated with the verde antique type of ultramafic body, whereas none is known to occur in ultramafic bodies that are only partly serpentized. On the other hand, cross-fiber asbestos appears to occur in appreciable quantities only in ultramafic bodies that contain unaltered dunite or peridotite, and is extremely rare or absent in the verde antique type." (Exhibit B at 4)

Stating this another way, Dr. Chidester wrote: "no commercial talc deposits are known to be associated" with a certain type of rock formation in Vermont which "commonly contains more or less chrysotile asbestos. . . ." (Exhibit B at 1)

5. In a 1962 Geological Survey Professional Paper, entitled "Petrology and Geochemistry of Selected Talc-Bearing Ultramafic Rocks and Adjacent Country Rocks in North-Central Vermont" (relevant portions of which are annexed hereto as Exhibit C), Dr. Chidester analyzed talc samples from a number of different mines in Vermont. He used the Johnson mine as a standard for the chemical analysis of pure talc. He noted that a sample "from the Johnson talc mine, Johnson, Vt., is included because specimens for chemical analysis of the pure mineral were not obtainable from the Mad River and Barnes Hill localities, and the specimen from the Johnson mine represents talc from the steatite zone of a purity not obtainable at the other deposits." (Exhibit C at 79)

6. A scientific paper by Maryanne G. Boundy, Karen Gold, Kenneth P. Martin, Jr., William A. Burgess and John M. Dement, entitled "Occupational Exposures to Non-Asbestiform Talc in Vermont" (a copy of which is annexed hereto as Exhibit D) reported on an environmental study of three Vermont talc companies, including Eastern Magnesia Talc and its Johnson mine, during the summer of 1975 and the winter of 1976. This study, under the auspices of the Department of Environmental Health Sciences, Harvard School of Public Health, Boston, Massachusetts, tested bulk samples of ore dust for their mineral constituents. The purpose of this study, as stated in the introduction to the paper, was to verify "geological studies dating from the early 1900's [that] have shown that the Vermont talc deposits contain no asbestos and little quartz. . . ." (Exhibit D at 1) In reporting the results of the study, the paper stated that "petrographic microscopy analysis, analytical transmission electron microscopy, and x-ray diffraction with step-scanning revealed no asbestos in the bulk samples" from the three Vermont talc companies. (Exhibit D at 377)

7. In September and October 1982, an independent testing laboratory, EMV Associates, then located in Rockville, Maryland, analyzed two talc samples taken from the Johnson mine by two different investigators in the 1961 time frame. (One

sample had been taken by Dr. Chidester during the research incorporated in his 1962 Geological Survey Paper; I took the other sample during a May, 1961 visit to the Johnson mine.) These samples had not been modified or adulterated in any way prior to their 1982 analysis. (Dr. Chidester's talc sample had been maintained by the National Museum of Natural History, Smithsonian Institute in Washington, D.C.) The reports of the analysis of these two samples, dated September 24, 1982 and October 18, 1982 (copies of which are annexed hereto as Exhibits E and F), stated that no asbestos was detected and "prismatic and blocky forms of tremolite were not detected." The reports indicated that the talc samples were examined for freedom from asbestos by "scanning electron microscopy and energy dispersive spectroscopy (SEM/EDS)" and were examined at various magnifications from 1000x to 10,000x. Each of the reports includes a "Certificate of Microanalysis for Asbestos" which contains a Sample Description, Method of Analysis and "Results: No asbestos detected." The results of this analysis were confirmed by a subsequent analysis performed on these samples by Professor F.W. Pooley of the University of Cardiff in Wales, England. Prof. Pooley is one of the foremost authorities in the world in the identification of asbestos and other hazardous minerals in the respiratory tracts of individuals.

In a December 22, 1982 report, Prof. Pooley noted that the samples were examined by x-ray diffraction analysis and by an analytical transmission electron microscope. The conclusion of these examinations was that no fibrous mineral particles were detected in the samples.

8. In sworn testimony in 1983 (relevant portions of which are annexed as Exhibit G), Dr. Chidester stated that he had never found veins of chrysotile asbestos in talc located in Vermont. He noted that chrysotile was a serpentine mineral found in serpentinite rock, but that, in the formation of talc in Vermont, all of the serpentine minerals are changed to talc. "So any asbestos that may have been there in the first place is altered to talc." (Exhibit G at 24) Thus, in Vermont, talc and serpentinite are mutually exclusive. Dr. Chidester testified that he had personally been at the talc mine in Johnson, Vermont and, based on his personal observations and testing, all of the serpentinite at the Johnson mine had been changed to talc and magnesite. He never observed any asbestos at the



Johnson mine and never saw any asbestos in any of the samples that he took from the Johnson mine and subjected to microscopic analysis..

  
WILLIAM H. ASHTON

Sworn to before me this  
8<sup>th</sup> day of May, 1989

  
Notary Public

MARGARET M. NAGY  
NOTARY PUBLIC OF NEW JERSEY  
MY COMMISSION EXPIRES AUG. 18, 1991