FILE NAME: Talc (TALC)

DATE: 1971

DOC#: TALC123

DOCUMENT DESCRIPTION: Excerpt from Barry Castleman's Master's Thesis - Asbestos-Effects on Health

DRFT/S # 2 Fo-1D
D- 2/8/79

ASBESTOS—EFFECTS ON HEALTH

by

Barry Castleman

An essay submitted to the Johns Hopkins University in conformity with the requirements for the degree of Master of Science in Engineering.

Baltimore, Maryland
October, 1971

"For the past 10 years, during which spray fireproofing came to be extensively used, it was not uncommon to see extensive snowfalls of asbestos-containing material over widespread areas of New York and other metropolitan cities. In some cases the fireproofing was even done with no attempt to enclose the spray area by tarpaulins or other means." (136) Sampling around construction sites where extensive spraying of asbestos fireproofing was in progress demonstrated a significant contribution to asbestos air pollution. In some instances chrysotile asbestos levels approximately 10 times "background" were observed. A few months after this report was made, the use of sprayed asbestos insulation was totally banned in Boston and Chicago and severely restricted in New York, Los Angeles, Detroit and Philadelphia (138).

Another suspected significant source of asbestos fiber was abrasion of brake linings. Lynch examined the emissions from automobile brake wear and found that practically all of the fiber was destroyed by the heat of friction (139).

Schulz and Williams (115) analyzed 51 different samples of commercial talc and found tremolite asbestos present in greater than trace amounts in 17. In fact, three of the talcs were composed 80% of

tremolite. Wright stated that (140) "talc provides a potent source at least equivalent to that of asbestos for supplying respirable sized fibers that could produce ferruginous bodies. It is difficult to conceive of a better way of having fibers inhaled than the use of cosmetic talcum powders." This line of thought is contradicted by results of the many studies of asbestos body prevalence in populations. These have established that asbestos bodies are more prevalent in males; and in individuals with numerous asbestos bodies it was usually in men with assumed occupational exposure to asbestos. Talc, with or without inclusion of tremolite asbestos, may be harmful, but there is no evidence to show that it is a cause of disease to the extent that the major forms of asbestos are.

Conclusion

Selikoff and coworkers (141) estimated that there are fewer than 100,000 workers regularly using asbestos in the construction trades in the United States. Yet more than 3,000,000 other building trade employees work in the same structures. A large number of workmen have similar indirect occupational exposure in shipyards (142). In addition, there are people with family and neighborhood exposures.

134. Meurman, L. Environ. Res. 2, 30 (1969).

135. Lynch, J.R. and H. E. Ayer. J. Occup. Med. 10, 21 (1968).

136. Nicholson, W.J., A.N. Rohl, and E.F. Ferrand. Paper presented at Second International Air Pollution Conference, Washington, D.C. (1970).

137. U.S. Department of Health, Education and Welfare. Air Quality Criteria for Particulate Matter, NAPCA Publication AP-49, Washington, D.C. (1969), pp. 13-14.

138. New York Times News Service (July 14, 1971).

139. Lynch, J.R. A.P.C.A. Journal 18, 824 (1968).

140. Wright, G.W. Amer. Rev. Respir. Dis. 100, 467 (1969).

141. Selikoff, I.J., E.C. Hammond, N. Heimann. Paper presented at Second International Air Pollution Conference, Washington, D.C. (1970).

142. Harries, P.G. Ann. Occup. Hyg. 11, 135 (1968).

143. Hourihane, D.O'B., L. Lessof, and P.C. Richardson. Brit. Med. J. 1, 1069 (1966).

144. Schepers, G.W.H. Ann. N.Y. Acad. Sci. 132, 246 (1965).

145. Kuyper, L.N. Pneumoconiosis. Proceedings of the International Conference, Johannesburg 1969. London, Capetown Oxford Univ. Press (1970), p. 42.

146. Sluis-Cremer, G.K. Environ. Res. 3, 310 (1970).