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MELLON INSTITUTE OF INDUSTRIAL RESEARCH

DEPARTMENT OF RESEARCH IN CHEMICAL RESEARCH DIVISION

Fellow Mr. J. F. MorganProject X-Ray Analysis of VermiculitesProject No. 259-14-XDate of Report March 16, 1953NATURE
OF
REPORTPreliminary _____
Progress _____
Final _____Rec'd. MAR 18 1953By _____ Re. No. 259

PLAINTIFF'S EXHIBIT

IHF-413

Sample: IHF-1419, P-2060.

This sample is the vermiculite as received from the manufacturer. The sample has been heated and expanded. The x-ray pattern roughly fits the data for chlorite. This would be expected because of the chemical and structural similarities between vermiculite and chlorite. Chlorite is a magnesium aluminum silicate, while the chemical formula for unheated vermiculite is $(\text{Mg,Fe})_3(\text{Al,Si})_4\text{O}_{10} \cdot (\text{OH})_2 \cdot 4(\text{H}_2\text{O})$.

Sample: IHF-1420, P-2061.

Using the preceding sample (IHF-1419) as a standard, this sample (vermiculite used in cooling beds) is about 75 percent crystalline. There is about 50 percent chlorite, 15-25 percent Fe_2O_3 , and if quartz is present the amount is not more than 2 percent. No tridymite or cristobalite could be detected.

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