

FILE NAME: RT Vanderbilt (RTV)

DATE: 1974 Oct 23

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DOCUMENT DESCRIPTION: Asbestos Minerals in Talc Marketed by RT Vanderbilt

JOHN-MARTINE

INTERNAL CIRCULATION

R. B. Decker - R&D

Date: October 23, 1974

V. E. Wolkodoff - R&D

Distribution on Reverse Side

TEM AND SELECTED AREA DIFFRACTION PATTERNS OF ASBESTOS MINERALS IN FOUR
TALC SAMPLES PRODUCED BY R. T. VANDERBILT COMPANY

1. At your request, I was able to contract time on the Philips 200 electron microscope at Denver Research Institute to confirm by selected area diffraction patterns, the presence of chrysotile, anthophyllite and tremolite in all the R. T. Vanderbilt talc samples (Aval 100, Aval 400, Asbestine 3X, and Asbestine 325Z (please refer to my letter of October 9, 1974, which is based entirely on photomicrographs and the use of our RCA electron microscopes to confirm chrysotile). It was felt that selected area diffraction patterns of the asbestos minerals using the Philips 200 would lend positive identification - a type of analysis which cannot be done on our RCA EMU-3B model.

2. Table No. 1 not only identifies samples, but also identifies all TEM prints and selected area diffraction patterns of the 33 prints attached to this letter. The TEM plates are always on file. The microscope constant ($L\lambda$) was derived by averaging 21 microscope constant values based on lines of Au and Pd. The microscope constant is:

$$L\lambda = 4.451 \text{ } \overset{\circ}{\text{A}} \text{ cm} \pm 0.003$$

To calculate d-spacing, in Angstrom units, the following formula was used:

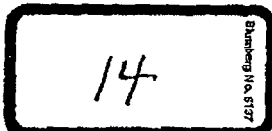
$$\frac{L\lambda \text{ (}\overset{\circ}{\text{A}} \text{ cm)}}{\text{spot pair radius (cm)}} = \text{d-spacing (}\overset{\circ}{\text{A}}\text{)}$$

3. Chrysotile, anthophyllite, and tremolite were all found in each of the four R. T. Vanderbilt talc samples. Particular data for each sample are found in Table No. 1 and appropriate attached electron diffraction patterns.

V. E. Wolkodoff
V. E. Wolkodoff

cc

Attachments



NOTEBOOK 4454, pp. 82-84

CRMC-MAD-000277

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*Prints attached only to those names followed by asterisk.