FILE NAME: Talc (TALC)

DATE: 1973 Feb 14

DOC#: TALC446

DOCUMENT DESCRIPTION: Memo RE Talc Producers' Association - Proposed

D 4

Greenwood Plaza - 3 West
February 14, 1973

P. A. Martinson - 2 West

TALC PRODUCER'S ASSOCIATION (PROPOSED)
R. S. Lamar's letter of January 31, 1973

Dick Lamar's letter suggested that I comment on the technical soundness of the letter before it is sent. Before doing so, I would like to raise a question as to the desirability of sending such a letter out after attending the recent meeting of the Talc Producer's Association in New York City. While the intent of the meeting was to promulgate a series of definitions differentiating asbestos, tremolite, talc and commercial talc, I believe I was instrumental in changing the end result so that only one definition is being proposed, i.e., industrial talc.

While the exact wording may differ very slightly from the definition below, the general gist was as follows:

"Industrial talc is a product varying in mineral composition from the mineral talc $[Mg_6(Si_8O_{20})(OH)_4]$ to mixtures of mineral talc and other naturally associated non-fibrous and/or fibrous minerals as defined by ASTM Designation D2946-71.

While we should clear with the Vanderbilt people whether they intend to continue their previous plan to convince Government officials that tremolite is not an asbestos mineral, my own impression from the meeting is that they are convinced of the futility of this approach. The much more reasonable approach, and one which has some slight possibility of bearing fruit, is to concentrate on the definition of fiber. The ASTM definition referred to above uses an aspect ratio of 10:1 rather than the ACGIH ratio of 3:1.

R. T. Vanderbilt appears to be the spearhead for the whole effort to disassociate tremolite from the list of asbestos minerals. If they are not going to push this approach, then there is little need, in my opinion, for sending the letter to Talc Producers or to the Talc Producer's Association.

So much for the political aspects of the letter. With reference to the technical aspects, I should like to make the following points, some of which obviously will be minor.

Item 2. While tremolite does have a fibrous "crystal habit" the particles can be fibrous or non-fibrous. In essence, a fiber is a particle with a defined minimum ratio of length to width. Unfortunately, this aspect ratio (L/D) is not a definitely established limit. As a matter of fact, in the ASTM definitions there are two ratios given as minimum. In the ASTM definition of asbestos minerals, the ratio is 10:1; in the Textile Fiber section, the limit is given as 100:1.

However, the more important aspect ratio limit, whether it has any more scientific significance or not, is that promulgated by the ACGIH, namely, an aspect ratio of 3. If the tremolite particles have an aspect ratio greater than 3:1, they are fibrous as far as OSHA is concerned. If the ratio is less than 3:1, the tremolite particle is a particle, not a fiber. Thus, although "tremolite is a fibrous mineral" as stated in Item 2, the individual particles may be fibrous or may not be fibrous, depending on their specific aspect ratios.

Starting with this distinction, we go to Item 1 which says that tremolite is clearly a member of the "asbestos family" of minerals. Again, this is correct, but since the asbestos minerals are fibrous by definition, then we could conclude that those particles of tremolite whose aspect ratio is extremely small are really not fibers and, therefore, they could be considered as not being asbestos.

What I am trying to point out is that whether tremolite is to be classed as an asbestos mineral is secondary to whether the particles are really fibrous or not insofar as the OSHA regulations are concerned, and we should try to pin our arguments on the aspect ratio factor.

Item 3. X-ray diffraction methods make possible a positive "differentiation between" both minerals. It will not definitely identify tremolite in a mixture containing small quantities of tremolite in a large concentration of talc. Strongest identifying X-ray lines for tremolite are essentially the same as those for anthophyllite and several other amphibole minerals.

The statement that pure talc mineral is fairly common in nature is something that I must defer to R. Lamar's knowledge. I had not anticipated that there were any large deposits of pure talc mineral without concomitant impurities, albeit non-fibrous impurities such as carbonates, oxides, etc.

P. A. Martinson - 2 West

Item 8 While I am sure that our Industrial Hygienists can supply information regarding correct procedures for dust control and other protective measures that may be required, it will be a long time before sufficient medical or epidemiological data are available on which to pass any recommendations other than to include tremolite as either an asbestos fiber, in which case the fiber count limitations will be paramount, or as a nuisance dust in which particle count would be paramount.

Dick Lamar is to be congratulated on preparing a summation of this type which brings together at one point pertinent information of a technical nature.

S. SPEIL

SS/rs

cc:
W. L. VanDerbeek - 2 West
J. M. Sharratt - 2 West
H. R. Keefe - 2 West
W. C. Streib - 3 West
R. P. Carter - 5 West
R. S. Lamar - 1 North
E. B. Smith - Long Beach, Carson
R. F. Bassett - Long Beach, Carson