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TALC, FIBROUS - TREMOLITE

(5 fibers/ml > 5 μm in length)

The fibrous variety of talc, as well as that of its associated amphiboles, tremolite and anthophyllite, contain fibers which are classified as asbestos. Fibrous talc has been shown to be of greater physiological significance than the non-fibrous variety in a number of environmental and clinical studies related to workers exposed to talc dusts. A proper evaluation of the mineral dust hazard requires a differentiation in the threshold limit values for the fibrous and non-fibrous forms.

Porro, Patton and Hobbs (1), on the basis of 15 cases with 5 postmortem examinations, reported that asbestotic bodies are almost invariably present in the fibrotic areas in cases of talcosis and noted a degree of similarity between asbestosis and pneumoconiosis due to talc. Siegal and associates (2) found an advanced fibrosis incidence rate of 14.5 per cent in a study covering 221 tremolite talc miners and millers. The dust to which these workers were exposed was largely fibrous and this physical characteristic was considered to be responsible for the pathology of the lung lesion, particularly because of its resemblance to asbestosis. Findings by McLaughlin and coworkers (3) indicated that talc pneumoconiosis could be caused only by the fibrous varieties of talc. Asbestos was considered to be more actively fibrogenic, possibly due to the higher proportion of fibers in asbestos. In postmortem examinations on 8 talc industry workers, Schepers and Durkan (4) found histological features which suggested

that tremolite was the main pathogenic agent in provoking the characteristic talc lung lesion. There was reason to suspect that the fibrous amphiboles might cause a reaction of the asbestotic type. In studying the effects of talc dust on animal tissue, the same authors (5) found that the degree to which the fibrosis supervenes depends on the length of the fibers rather than on their chemical composition. Kleinfeld et al. (6) reported postmortem findings on 6 talc industry workers in which the bodies found in respiratory bronchioles or imbedded in fibrous tissue were indistinguishable from asbestos bodies as seen in asbestosis.

History? From where?

Because of the striking similarity in the fibrotic reaction produced by talc and asbestos fibers, the suggested threshold limit of 5 fibers, exceeding 5 microns in length, per milliliter of air, is recommended for talc.

References:

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