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### MINERALOGICAL CHARACTERIZATION OF COSMETIC TALC PRODUCTS

The purpose of this letter is to comment on the paper by Rohl et al. entitled "Consumer Talcums and Powders: Mineral and Chemical Characterization," which appeared in the *Journal of Toxicology and Environmental Health* (2:255-284, 1976).

The paper conveys an erroneous impression that it is reasonably common to detect the presence of asbestos in over-the-counter talcum powders. The authors imply, in fact, that one-half of the products studied are of questionable quality when they state that "10 of the 20 products examined contained detectable amounts of tremolite and anthophyllite, principally asbestiform."

The article is misleading, and its publication demands clarification in light of the following points: (1) a comprehensive understanding of mineralogy makes it apparent that the reported results are impossible to achieve; (2) the analytical methods described do not and/or can not lead to the conclusions reported; and (3) the conclusions drawn are without sound scientific basis and are therefore misleading and invalid. These points are discussed below.

The portions of the paper by Rohl et al. that describe the geologic occurrences and properties of talc and associated minerals are generally correct, with one major exception. The paper very clearly makes the point that the predominant occurrences of tremolite, anthophyllite, and serpentine are as the asbestiform varieties, and readers other than professional geologists or mineralogists will almost surely reach the erroneous conclusion that occurrences of the asbestiform varieties are the rule rather than the exception. It is a fact that the asbestiform varieties of these minerals are relatively rare, and that such occurrences probably account for less than 1% of the known world occurrences of each mineral. Further, tremolite and anthophyllite are erroneously stated to have fibrous cleavage, whereas, in fact, their cleavage is prismatic. Tremolite asbestos is essentially a mineralogical curiosity.

The analytical methods described by the authors for identification and quantification of tremolite, anthophyllite, and serpentine are invalid. The