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December 9, 2019

Raja Krishnamoorthi
Chairman
Subcommittee on Economic and Consumer Policy

Re: Proposed Testimony on 12/10/19 to the Subcommittee on Economic and Consumer Policy

Thank you Chairman Krishnamoorthi, Ranking Member Cloud and the esteemed members of this sub-committee for giving me the opportunity to discuss the best methods for determining asbestos in cosmetic talc.

My name is William E. Longo. I have a Ph.D in the area of Materials Science and Engineering, and the President of Materials Analytical Services LLC.
I have been involved in asbestos analysis and research for over 30 years. I have also testified on both plaintiffs and defendants in asbestos cases.

Independent labs throughout the country and over the course of several decades have documented the presence of asbestos in consumer talcum products including Johnson's Baby Powder. AMA Analytical, Forensic Analytical, MVA Scientific Consultants, our own lab MAS, and Johnson & Johnson's own consultants – Colorado School of Mines, Dartmouth University, McCrone Associates, Rutgers University, The RJ Lee Group (and others) have all documented asbestos in Johnson's and other manufacturers' talcum products over the course of decades. The cosmetic talc industry has, in that time, accumulated hundreds, if not thousands of testing results that report "no detectable or quantifiable asbestos.' These reports, regarded by the manufactures as "negative," very misleading as they result from analytical and methodological techniques with poor detection limits.

The question I would like to address in my testimony today is why the testing methods adopted and used by the cosmetic talc industry have regularly failed to detect the asbestos present and what improved (though certainly not new) test methods can help ensure that we are using the best methods for detection of asbestos in talc.

The answer in short is straight forward and should not be controversial to anyone: the methods used in the past and today by the industry are not sensitive enough to detect

trace levels of asbestos. We should have analytical methods that achieve the highest degree of sensitivity and the lowest detection limits plausible. Let me explain.

The first thing to understand is that asbestos is very small and virtually weightless, measured in pictograms, or trillionths of a gram. Millions and millions of asbestos fibers can be present in a single gram of talc even if the total asbestos by weight is less than 0.01%. So, good analytical sensitivity is extremely important when looking at very small samples at very low weight percentages.

The analytical sensitivity is simply how many asbestos fibers must be present in a talc sample for the analyst to see a single fiber. Most of the current talc analysis method use a combination polarized light microscopy (PLM) and transmission electron microscopy (TEM).

The laboratories used by the talc industry (and recently by the FDA's contract laboratory) have very poor analytical sensitivity, with detection limits of approximately 10,000,000 to 14,000,000 asbestos fibers per gram of cosmetic talc. This means that for the TEM microscopist to detect a single asbestos fiber in the talcum powder sample, there need to be between 10,000,000 to 14,000,000 asbestos fibers present per gram.

It was been estimated that for every one asbestos fiber in cosmetic talc, there are 600,000 talc particles. These big plates of talc prevent the

This problem can be solved with a cosmetic talc sample preparation method called heavy liquid separation (HLS). This technique can separate and remove a substantial amount of talc from a sample, leaving behind any amphibole asbestos that may be present, making for an easier and quicker analysis, along with substantially better sensitivity.

As stated, the typical analytical sensitivity for cosmetic talc analysis is between 10,000,000 to 14,000,000 asbestos fibers per gram. At our laboratory, using the HLS sample preparation method for our cosmetic talc samples and TEM analysis, we have been able to increase the analytical sensitivity to approximately 4500 asbestos fibers per gram. This is an increase of sensitivity of between 2100 to 3100 times more sensitive than those used by industry and the FDA contract laboratory. Using HLS approximately 65% of the cosmetic talc samples we have analyzed, have been positive for amphibole asbestos.

In 1991, a Johnson and Johnson consultant named Dr. Alice Blount published a peer reviewed paper, wherein she used heavy liquid separation and optical microscopy on talc samples. In an off-the-shelf sample of Johnson's Baby Powder, she found approximately102,000 to 341,000 tremolite asbestos fibers per gram of talc. Without HLS sample preparation, that same Johnson's Baby Powder sample was found to be negative.

The HLS method is certainly not new to Johnson & Johnson or the talc industry. In the early 1970's the Colorado School of Mines and Dartmouth University successfully developed the HLS asbestos detection method and presented it to J&J. The company never adopted the method, stating in an early 1970's memo that it "maybe too sensitive" and not in their best worldwide interest to employ.

Lastly, if the cosmetic powder manufacturers insist on continuing to use talc in their cosmetic products, it is vital to the public safety that the most sensitive method be required. At this time, there is no dispute that this is the HLS preparation method with analysis by PLM and TEM.

An important caveat: Even using this best method, one can never state that cosmetic talc does not contain asbestos; only that the results fall below the detection limit of 4500 asbestos fibers per gram.

The only true solution to this problem is to ban the use of talcs in any cosmetic products.

Sincerely,

William E. Longo, Ph.D.
President