

SUMMARY AND COMMENTS ON ANALYSES FOR ASBESTOS IN COSMETIC TALC PRODUCTS

This summary contains the analytical results for asbestos in cosmetic talc preparations, comments on these analyses, and other pertinent information on the work carried out by the following investigators:

1. Seymour Z. Lewin, Ph.D., Professor of Chemistry, New York University. Dr. Lewin was commissioned by FDA in 1971 to analyze commercial cosmetic talc products. He purchased and analyzed 195 samples by x-ray powder diffraction. Dr. Lewin was chosen because he is an internationally recognized expert on mineralogical chemistry.
2. Arnold E. Schulze, Microanalytical Branch, Division of Microbiology (BF-216), FDA. Mr. Schulze investigated 32 of the 195 samples by means of polarizing microscopy.
3. Minerals, Pigments and Metals Division, Pfizer, Inc, Easton, Pa. This investigator employed the techniques of x-ray powder diffraction and reported on 7 of the 195 samples. This work was complimentary.
4. Columbia Scientific Industries, Austin, Texas. This firm checked samples for chrysotile by means of differential thermal analysis. This work was complimentary.

There is poor correlation between Dr. Lewin's results and the findings of the other investigators. Dr. Lewin found definite indications of chrysotile in 17 of the samples (many of these also had tremolite) and definite indications of tremolite but not chrysotile in 23 samples. The chrysotile content could not be confirmed with certainty by the other investigators, and tremolite was detected by the others only in a few instances.

The reason for these discrepancies may be found in Dr. Lewin's own notes of July 10, 1973, in which he stated: "The chrysotile that I found in commercial talcs is generally different in significant respects from the chrysotile that occurs as massive, fibrous growth in veins in serpentine rocks. That is, the former has diffraction peaks that may differ from the latter by as much as 0.2 Å (at 7.3 Å); it is more reactive toward dilute acids; it shows a different appearance under the microscope; and its DTA endotherms and exotherms are shifted relative to those of the latter (and apparently diminished)." He further states that "the analytical method (x-ray diffraction) gives a reproducibility of $\pm 2\%$ to 3% average deviation in replicate determinations on the same sample, but different samples from the same bulk container are found to vary as much as 200%."

In the light of these discrepancies and because the inhalation of certain asbestiform minerals is a potential health hazard, the FDA has engaged in an intensive research project to develop one or several methods of sufficient sensitivity and reliability which will permit the determination of asbestos in talc-containing products with the necessary degree of accuracy and at concentrations at which this contaminant presents the health hazard.

Heinz J. Eiermann: 10-1-73

SUMMARY TABLE OF RESULTS OF FOUR INVESTIGATORS ON ANALYSIS OF COMMERCIAL COSMETIC TALC PRODUCTS FOR ASBESTOS MINERALS

SAMPLE #	PRODUCT NAME & MFG.	CODE	CHRYSOPILE				TREMOLITE			
			S.Z. Lewin X-Ray Diff. (A)*	A.E. Schulze Opt. Micros. (B)*	Pfizer X-Ray Diff. (C)*	Columb. Sci. Diff. Therm. Ana. (D)*	(A)*	(B)*	(C)*	(D)*
63	Beloved Perfumed Dtg. Pwdr, Prince Matchabelli, (Chesabrough-Ponds)	-	n.d.	-	-	-	5%	n.a.	-	-
66	Emeraude Dtg. Pwdr., (Coty)	-	2%	-	-	-	n.d.	-	-	-
67	Emeraude Spray Dtg. Pwdr., (Coty)	1A8V	n.d.	-	-	-	2%	-	-	-
71	Jolie Madame Dtg. Pwdr, Balmain, (Revlon)	-	n.d.	-	-	-	3%	n.d.	-	-
76	To Know Me Is To Love Me, Tinkerbell, (Tom Fields, Ltd.)	-	-	-	-	-	5%	-	-	-
77	Touch & Glow Face Pwdr., Creamy Peach, (Revlon)	-	n.d.	-	-	-	3%	n.a.	-	-
78	Toujours Moi Bath Pwdr., (Corday)	-	n.d.	-	-	-	5%	n.a.	-	-
82	Constance Carroll, Bouquet,	-	5%	n.d.	-	-	4%	1.a.	-	-
83	Djer-Kiss Talcum, (Kerkoff)	-	5%	n.d.	n.d.	±	5%	1.a.	-	-
90	Flamingo Dtg. Pwdr., (Tussy)	11047	5%	±	-	-	3%	1.a.	-	-
91	Lander Lilacs & Roses Talc,	-	5%	-	-	-	n.d.	-	-	-
92	Mavis Talcum, (Vivaudou)	-	5%	±	-	-	5%	1.a.	-	-
93	Mavis Body Pwdr., (Vivaudou)	-	4%	-	-	-	5%	1.a.	-	-
94	Palace, (Lift-Tangee)	-	±	n.d.	n.d.	±	4%	1.a.	1.9%	-
95	227 Baby Pwdr,	30048	3%	-	-	-	2%	-	-	-

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96	Blanchard's Dusting Pwdr., (Del Labs.)	-	10%	±	n.d.	±	8%	n.a.	0.7%	-
97	Born Wild Dtg. Pwdr., (Del Labs.)	-	15%	n.d.	n.d.	±	12%	1.2%	8.1%	-
101	Tai Winds Spray Talc, (Avon)	-	n.d.	-	-	-	15%	1.2%	-	-
102	Cosca Dtg. Pwdr.	-	7%	n.d.	-	-	10%	1.2%	-	-
108	Revlon Intimate Perfumed Bath Pwdr.	241	n.d.	-	-	-	2%	-	-	-
109	Jean Kate Bath Pwdr., (Lanvin-Charles of the Ritz)	2137	±	-	-	-	2%	-	-	-
111	Old Spice Body Talc, (Shulton)	NFO	n.d.	-	-	-	1%	-	-	-
130	Vaseline Intensive Care, (Chesebrough-Ponds)	-	tr	-	-	-	tr	-	-	-
131	Johnson & Johnson Medicated Pwdr, (Johnson & Johnson)	-	n.d.	-	-	-	tr	-	-	-
143	Bir-Kow Talque, (Perfection Beauty Products)	-	10%	-	-	-	5%	-	-	-
144	Overton's "High-Brown" Face Pwdr.	-	±	-	-	-	5%	-	-	-
145	Softex Face Pwdr.	-	2%	-	-	-	n.d.	-	-	-
149	Lady Wayne Face Pwdr.	-	n.d.	-	-	-	2%	n.d.	-	-
149	Solitaire Cake Makeup	-	±	-	-	-	8%	-	-	-
151	Bismoline Medicated Pwdr.	-	n.d.	-	-	-	2%	n.d.	0.5%	-