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January 7, 1976

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Tabulated Results of DCST's Analyses for Asbestos Minerals in Lewin, Field Activity Surveillance (FAS), Investigational and Consumer Cosmetic Talc Products.

Attached are a series of tables summarizing data obtained from the DCST analyses of cosmetic talc products for asbestos minerals. Also included, for purposes of comparison, are Dr. S. Z. Lewin's analytical data obtained by x-ray diffractometry.

Attachments:

- a. Master table. "Summary Table of Results of the Investigations of Commercial Cosmetic Talc Products For Asbestos Minerals by S. Z. Lewin and the Division of Cosmetic Technology." This table contains analytical data of all the Lewin samples analyzed by DCST. Included is Lewin's data on these samples.
- b. Table I. "Summary of Results of DCST's Analyses For Asbestos Minerals in Talc Samples Reported by Lewin to contain Tremolite and/or Chrysotile." Information in this table was extracted from the master table and lists only those samples which Lewin reported the presence of asbestos minerals.
- c. Table II. "Cosmetic Talcs Analyzed by Lewin and Reported to Contain Chrysotile and/or Tremolite which were not Analyzed by DCST by Either DTA or Optical Microscopy." DCST does not possess the samples listed in this table and, therefore, were unable to analyze them.
- d. Table III. "Summary of DCST's Analyses of Cosmetic Talc Products by Differential Thermal Analysis (DTA) and Optical Microscopy." This table summarizes, by number of samples, DCST's analyses of talc samples from all sources.

- e. Table IV. "Summary of S. Z. Lewin's Analyses of Commercial Cosmetic Talcs For Tremolite and Chrysotile by X-Ray Diffraction." This table summarizes, by number of samples, S. Z. Lewin's results for all samples analyzed.

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SUMMARY TABLE OF RESULTS OF THE INVESTIGATIONS OF COMMERCIAL COSMETIC
TALC PRODUCTS FOR ASBESTOS MINERALS BY S. Z. LEWIN AND THE DIVISION OF COSMETICS TECHNOLOGY⁽¹⁾

SAMPLE #	PRODUCT NAME AND MFG.	CODE	S. Z. Lewin's Results (X-Ray Diff.)		DCST's Results	
			Tremolite (%)	Chrysotile (%)	Tremolite (fiber/mg) Optical Microscopy	Chrysotile (%) - DTA
14	Desitin Baby Powder, Antibacterial; Pfizer	(1139Z)	ND (2)	ND	-	ND
26	Helen Pressl "Little Lady"		ND	?	ND	ND
29	Johnson's Baby Powder	(028Q)	ND	ND	ND	ND
35	Lewis Baby Powder		ND	ND	-	ND
37	Macy's Scented Borated Talcum		ND	ND	200 (.02%) (3)	ND
38	Macy's Talcum, Apple	(2K4)	ND	ND	-	ND
42	Mennen Quinsana Foot Powder	(H202)	ND	ND	600 (.06%)	?
50	Quest Deodorant Powder;		ND	ND	-	ND
52	Riviana Foods-Italian Stearin Talc; For Rice		ND	ND	-	ND
53	September Morn By Pond's	(19B)	ND	ND	-	ND
54	Seven Winds After Bath Talc; DuBarry	(021085)	ND	?	-	ND
56	Vaseline Intensive Care Baby Powder (same as 130)	(1209)	ND	ND	-	ND
57	Yves Saint Laurent Rive Gauche Spray Talc		ND	ND	-	ND
58	Z B T Baby Powder	(F1021)	ND	ND	-	ND
59	Zeasorb Super Absorbent Medicated Powder; Stiefel		ND	ND	-	ND
60	Ambush-Dana Dusting Powder		ND	ND	-	ND
61	April Showers	(9884)	ND	ND	700 (.07%)	ND
62	Avon Unforgettable Perfumed Talc		ND	ND	-	ND
63	Beloved Perfumed Dusting Powder, Prince Matchabelli		5%	ND	36,000 (3.6%)	ND

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SAMPLE #	PRODUCT NAME AND MFG.	CODE
64	Coty Face Powder Rachel (Airsun)	
68	Faberge Flambeau Deodorant Spray Powder	(37WBF)
70	Jeris Talc, Flesh A & B	
71	Jolie Madame Dusting Powder, Balmain	
72	Lady Esther Face Powder, Rachel	
73	A&B Max Factor Face Powder, Rachelle	
74	Medicated Comfort Powder; Parke-Davis	
75	OH! de London Talc; Yardley	(498)
77	Touch and Glow Face Powder, Creamy Peach; Revlon	
78	Toujours Moi Bath Powder; Corday	
79	Yardley April Violets	(4908)
80	Chantilly Dusting Powder; Houbigant	(11F)
81	Cashmere Bouquet, Imported White Talcum Powder	
82	Jean Nate Talc	(on 345)
84	Shower To Shower Body Powder; Johnson & Johnson	(55078G)
85	Pure Baby Powder, Dart Drug	(K11C)
86	Pond's Dream Flower Perfumed Talc	(013D)
87	Almay Hypo-Allergenic Face Powder	
88	Constance Carroil, Bouquet Talc	
89	Djer-Kiss Talcum; Kerkoff	
90	Flamingo Dusting Powder, Tussy	(L1047)
92	Mavis Talcum; Vivaudou	

2. Lewin's Results (X-Ray Diff.)		Tremolite (fiber/mg) Chrysotile =	
Tremolite (%)	Chrysotile (%)	Optical Microscopy	(%) - DTA
ND	ND	-	ND
ND	ND	-	ND
ND	ND	500 (.05%)	ND
3%	ND	ND	ND
ND	ND	ND	ND
ND	ND	-	ND
ND	ND	3,300 (.33%)	ND
ND	ND	-	?
3%	ND	2,800 (.28%)	?
5%	ND	96,000 (9.6%)	ND
ND	ND	-	ND
ND	?	ND	ND
ND	?	ND	ND
ND	?	-	ND
ND	?	-	ND
ND	?	ND	ND
ND	?	-	ND
ND	?	-	ND
4%	5%	7,000 (.7%)	ND
5%	5%	2,900 (.29%)	ND
3%	5%	4,000 (.4%)	ND
5%	5%	7,300 (.73%)	ND

HHS00000155

SAMPLE #	PRODUCT NAME AND MFG.	CODE
93	Mavis Body Powder; Vivaudpu	
94	Tangee; Luft-Tangee	
95	ZBT Baby Powder	(B0048)
96	Blanchard's Dusting Powder	
97	Born Wild Dusting Powder; Del Labs	
99	A&B Lander Lilacs and Roses Deodorant Body Talc	
100	Miss Dior Dusting Powder	
101	Tai Winds Spray Talc; Avon	(DCC1272)
102	A&B Tosca Dusting Powder	
107	Coty Muguet des Bois Dusting Powder	(200)
131	Johnson & Johnson Medicated Powder	(1171K)
133	Johnson's Baby Powder	(108T)
134	Johnson's Baby Powder	(109T)
135	Johnson & Johnson Medicated Powder	(0452K)
136	Johnson & Johnson Shower to Shower Body Powder	(C512Z)
137	Johnson & Johnson Shower to Shower Body Powder	(0709X1)
138	Johnson & Johnson Shower to Shower Body Powder	(0872K)
143	Pin-Zow Talque; Perfection Beauty Products, Inc.	
144A	Overton's "High-Brown" Face Powder	
145	Softee Face Powder	
148	Lady Wayne Face Powder	
149	Solitaire Cake Makeup	

S. Z. Lewin's Results (X-Ray Diff.)

DCST's Results
Tremolite (fiber/mg) Chrysotile
Optical Microscopy (%) - UTA

Tremolite (%)	Chrysotile (%)		
5%	4%	5,100 (.51%)	ND
4%	?	2,500 (.25%)	ND
2%	3%	300 (.03%)	ND
8%	10%	5,600 (.56%)	-
12%	15%	13,000 (1.3%)	ND
ND	ND	ND	ND
ND	ND	trace	-
15%	ND	60,000 (6%)	ND
10%	7%	8,900 (.89%)	ND
ND	ND	ND	-
trace	ND	ND	ND
ND	ND	ND	ND
ND	ND	ND	ND
ND	ND	ND	ND
ND	ND	ND	ND
ND	ND	ND	ND
ND	ND	ND	ND
5%	10%	1,800 (.18%)	-
5%	?	400 (.04%)	ND
ND	2%	ND	ND
2%	ND	trace	ND
8%	?	3,000 (.3%)	ND

HHS00000156

SAMPLE #	PRODUCT NAME AND MFG.	CODE
151	Early American Old Spice Talcum Powder	
152	Corsage Dusting Powder; Lander	
153	Ammens Powder, Medicated	
154	Bismoline Medicated Powder	
155	Rite Aid Pure Baby Powder	
156	Warner Pure Baby Powder	
157A	Mavis Imported Talcum	
158	Avon Brocade Perfumed Talc	
159	Avon Blue Lotus Perfumed Talc	
160	Avon Beauty Dust Refill - Charisma	
163	Pinaud Clubman Talc	
164	Grand Union Baby Powder	(101672)
165	Cashmere-Bouquet	(4212DX)
167	Tawny Tone Body Talc From Black Heritage; Beauty Mustus, Inc.	
168	Colgate Tooth Powder	
169	Dr. Lyon's Tooth Powder	
170A	"C" Bouquet Talc; Winarick, Inc.	(2662)
173A	Corsage Dusting Powder; Lander Co.	
175A	Lander Baby Powder	
176A	Lander Lilac & Roses Body Talc	

S. Z. Lewin's Results (X-Ray Diff.)		DCST's Results	
Tremolite (%)	Chrysotile (%)	Tremolite (fiber/mg) Optical Microscopy	Chrysotile (%) - DTA
ND	ND	ND	-
ND	ND	ND	-
ND	ND	ND	?
2%	ND	200 (.02%)	-
ND	?	ND	ND
2%	ND	200 (.02%)	ND
6%	8%	9,000 (.9%)	ND
ND	ND	ND	ND
ND	?	ND	ND
ND	trace	ND	ND
10%	10%	9,000 (.9%)	-
ND	1%	trace	-
ND	?	ND	ND
2%	ND	ND	ND
ND	ND	ND	ND
ND	ND	ND	ND
ND	8%	6,300 (.63%)	ND
ND	?	-	?
ND	?	-	ND
ND	?	-	ND

HHS00000157

SAMPLE #	PRODUCT NAME AND MFG.	CODE	S. Z. Lewin's Results (X-Ray Diff.)		DCST's Results	
			Tremolite (%)	Chrysotile (%)	Tremolite (fiber/mg) Optical Microscopy	Chrysotile (%)-DTA
178A	Jean Nate Talc No. 60	(2264)	ND	?	-	ND
194	Tinkerbelle Dusting Powder; Tm Fields, Ltd.		ND	?	-	ND

(1) Results are shown for only those talc products analyzed by both Lewin and DCST.

(2) ND - Not Detected

(3) DCST tremolite % is based on following conversion; 1000 fibers/mg talc = 0.1% tremolite where average tremolite fiber dimensions are 5 x 15 μ m.
If it is assumed that microscopist sees 10% of fibers present, % values would be increased 1 order of magnitude.

HHS00000158

TABLE I
SUMMARY OF RESULTS OF DCST'S ANALYSES FOR ASBESTOS MINERALS IN TALC
SAMPLES REPORTED BY LEWIN TO CONTAIN TREMOLITE AND/OR CHRYSOTILE

Sample No.	S. Z. Lewin's Results (X-Ray Diff.)		DCST'S Results	
	Tremolite (%)	Chrysotile (%)	Tremolite (fiber/mg) Optical Microscopy	Chrysotile (%)-DTA
63	5	ND	36,000 (3.6%)	ND
71	3	ND	ND	ND
77	3	ND	2,800 (0.28%)	?
78	5	ND	96,000 (9.6%)	ND
88	4	5	7,000 (0.7%)	ND
89	5	5	2,900 (0.29%)	ND
90	3	5	4,000 (0.4%)	ND
92	5	5	7,300 (0.73%)	ND
93	5	4	5,100 (0.51%)	ND
94	4	?	2,500 (0.25%)	ND
95	2	3	300 (0.03%)	ND
96	8	10	5,600 (0.56%)	---
97	12	15	13,000 (1.3%)	ND
101	15	ND	60,000 (6%)	ND
102	10	7	8,900 (0.89%)	ND
131	trace	ND	ND	ND

HHS00000159

Sample No.	S. Z. Lewin's Results (X-Ray Diff.)		DCST's Results	
	Tremolite (%)	Chrysotile (%)	Tremolite (fiber/mg) Optical Microscopy	Chrysotile (%)-DTA
143	5	10	1,800 (.18%)	---
144A	5	?	400 (.04%)	ND
145	ND	2	ND	ND
148	2	ND	trace	ND
149	8	?	3,000 (0.3%)	ND
154	2	ND	200 (0.02%)	ND
156	2	ND	200 (0.02%)	ND
157A	6	8	9,000 (0.9%)	ND
160	ND	trace	ND	ND
163	10	10	9,000 (0.9%)	---
164	ND	1	trace	---
167	2	ND	ND	ND
170A	ND	8	6,300 (0.63%)	ND

HHS00000160

TABLE II

COSMETIC TALCS ANALYZED BY LEWIN AND
 REPORTED TO CONTAIN CHRYSOTILE AND/OR TREMOLITE
 WHICH WERE NOT ANALYZED BY DCST
 BY EITHER DTA OR OPTICAL MICROSCOPY

<u>Sample No.</u>	<u>Lewin Results (X-Ray Diff.)</u>	
	<u>Tremolite</u>	<u>Chrysotile</u>
66	ND	2%
67	2%	ND
76	5%	ND
91	ND	5%
108	2%	ND
109	2%	?
111	1%	ND
130	trace	trace
172	2%	ND
183	1%	?
184	3%	ND
187	2%	ND
188	1%	?
189	1%	ND

According to John Stuart's notes, the above samples are not present in the lot of Lewin's samples. Inventory of Lewin's talcs verified that DCST does not possess the above samples.

TABLE III

SUMMARY OF DCST'S ANALYSES OF COSMETIC TALC PRODUCTS
BY DIFFERENTIAL THERMAL ANALYSIS (DTA) AND OPTICAL MICROSCOPY (OM)

Analytical Method	Differential Thermal Analysis			Optical Microscopy		
Source	S. Z. Lewin	FAS	Investigational and Consumer	S. Z. Lewin	FAS	Investigational and Consumer
Total Analyzed	78	76	2	57(1)	47	11
Chrysotile Detected	57(2)	0	0	0	0	0
Tremolite Detected	NA	NA	NA	30	0	0

- (1) Includes 25 of 37 samples in which S. Z. Lewin reported presence of tremolite by x-ray diffraction. DCST detected tremolite in 22 of the 25 samples. DCST detected tremolite in 8 samples where S. Z. Lewin reported none detected.
- (2) Results on all 5 samples were ambiguous due to interferences and/or low levels of chrysotile.

HHS00000162

TABLE IV

SUMMARY OF S. Z. LEWIN'S ANALYSES OF COMMERCIAL COSMETIC TALCS
FOR TREMOLITE AND CHRYSOTILE BY X-RAY DIFFRACTION

<u>No. of Samples Analyzed</u>	<u>Samples Only Chrysotile Detected</u>	<u>Samples Only Tremolite Detected</u>	<u>Samples Tremolite and Chrysotile Detected</u>
195	6	24	13

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May 30, 1973

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Microscopic examination of cosmetic talc products for asbestos minerals

The samples of commercial cosmetic products containing talc, which were returned to us by Dr. Lewin of New York University, were examined by means of the polarizing microscope to determine whether they contain asbestos minerals. Results are reported below.

- # 58. No asbestos minerals seen.
- # 60. No asbestos minerals seen.
- # 61. No asbestos minerals seen.
- # 63. Moderate amount of tremolite.
- # 70. Small amount of tremolite.
- # 71. No asbestos minerals seen.
Considerable amount of fibrous material within refractive index range of talc.
- # 72. No asbestos minerals seen.
Large amount of very fine material which partly obscures the talc.
- # 74. Small amount of tremolite.
Large amount of corn starch.
- # 77. Small amount of tremolite.
Large amount of very fine material which partly obscures the talc.
- # 78. Moderate amount of tremolite.
- # 80. No asbestos minerals seen.
- # 85. No asbestos minerals seen.
- # 87. No asbestos minerals seen.
Large amount of very fine material partly obscures the talc.

- # 88. Large amount of tremolite.
- # 89. Large amount of tremolite.
- # 90. Large amount of tremolite.
Some talc grains ^{have} striations resembling chrysotile fibers.
- # 92. Large amount of tremolite.
Some talc grains striations resembling chrysotile fibers.
- # 93. Large amount of tremolite.
- # 94. Large amount of tremolite.
Large amount of platy material which may be antigorite.
- # 96. Moderate amount of tremolite.
Some talc grains have striations resembling chrysotile fibers.
- # 97. Large amount of tremolite.
Moderate amount of platy, striate material which may be antigorite.
- # 99. No asbestos minerals seen.
Talc not definitely identified.
Large amount of platy unidentified material.
Large amount of quartz.
- #100. Very small amount of tremolite.
Some talc grains have striations resembling chrysotile fibers.
- #101. Large amount of tremolite.
Talc not definitely identified.
Large amount of platy, striate material which may be antigorite.
- #102. Large amount of tremolite.
- #107. No asbestos minerals seen.
- #148. Small amount of tremolite.
Large amount of very fine material which partly obscures the other material.
- #149. Tremolite present.
Large amount of very fine material which partly obscures the other material.
- #152. No asbestos minerals seen.
Large amount of quartz.

#154. Small amount of tremolite.

#163. Large amount of tremolite.

#164. No asbestos minerals seen.

Some talc grains have striations resembling chrysotile fibers.

Arnold E. Schulze