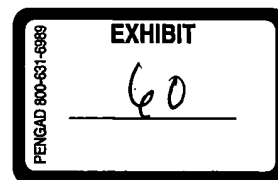


SYNOPSIS OF FINDINGS

1. Eight talcs were investigated. The talcs are clean. Each talc was found to be free from asbestiform minerals by several analytical procedures.
2. All talcs assayed greater than 90% pure talc mineral content in conformance to updated CTFA cosmetic talc definitions.
3. The report covers only eight talcs of twelve talcs expected. As of the close of 1977, J & J Japan had not yet obtained their scheduled shipments and are not represented in this issue.

Brazilian talcs, although sent to us on two occasions, never reached us and are presumed lost in U.S. Customs.

4. This report includes an important document (IC8751) recently released by the U. S. Bureau of Mines. The document officially defines specifics of asbestiform minerals. The report will provide valuable technical reference support in any future talc/asbestos controversies.



FREEDOM FROM ASBESTOS
BY ELECTRON MICROSCOPY

The talcs were examined by Scanning Electron Microscopy in a system equipped with an Energy Dispersive X-Ray Analyzer. The work was conducted at one of the leading microanalysis laboratories in the U.S.A. and xerox copies of certificates of purity for each of the talcs are presented.

Any overseas J & J affiliate requiring a photostatic copy of the original of their purity certificate, may obtain one by request to Applied Research, Baby Products Company, Raritan, New Jersey, U.S.A.

CERTIFICATE OF MICROANALYSIS FOR ASBESTOS

SAMPLE DESCRIPTION:

1977 Sample #1 - J&J Canada (V66-USA)

METHOD OF ANALYSIS: Qualitative physical and chemical characteristics of fibrous material with the scanning electron microscope and energy dispersive x-ray analyzer. Analysis of 100 fields each at 150X, 1500X and 15,000X. Approximately 100,000 particles examined.

RESULTS:

No asbestos detected.

Analyst

Date

8/26/77

John H. Hehning
Executive Vice Pres.

EMV ASSOCIATES, INC.

MICROANALYSIS LABORATORY
15825 Shady Grove Road
Rockville, Maryland 20850

CERTIFICATE OF MICROANALYSIS FOR ASBESTOS

SAMPLE DESCRIPTION:

1977 Sample #2 - J&J Mexico (Italian Talc/Mexico Grind)

METHOD OF ANALYSIS: Qualitative physical and chemical characteristics of fibrous material with the scanning electron microscope and energy dispersive x-ray analyzer. Analysis of 100 fields each at 150X, 1500X and 15,000X. Approximately 100,000 particles examined.

RESULTS:

No asbestos detected.

Analyst

John H. Hehning
Executive Vice Pres.

EMV ASSOCIATES, INC.

MICROANALYSIS LABORATORY
15825 Shady Grove Road
Rockville, Maryland 20850

CERTIFICATE OF MICROANALYSIS FOR ASBESTOS

SAMPLE DESCRIPTION:

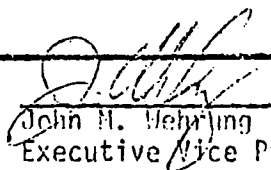
1977 Sample #5 - J&J Pakistan (Kashmiri-Grade A)

METHOD OF ANALYSIS: Qualitative physical and chemical characteristics of fibrous material with the scanning electron microscope and energy dispersive x-ray analyzer. Analysis of 100 fields each at 150X, 1500X and 15,000X. Approximately 100,000 particles examined.

RESULTS:

No asbestos detected.

Analyst


John H. Mehring
Executive Vice Pres.

EMV ASSOCIATES INC

MICROANALYSIS LABORATORY
15825 Shady Grove Road
Rockville, Maryland 20850

Date

8/26/77



CERTIFICATE OF MICROANALYSIS FOR ASBESTOS

SAMPLE DESCRIPTION:

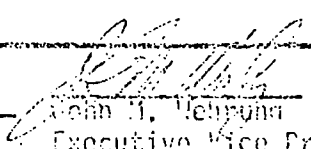
1977 Sample No. 6 - J&J Australia (Steeley Talc)

METHOD OF ANALYSIS: Qualitative physical and chemical characteristics of fibrous material with the scanning electron microscope and energy dispersive x-ray analyzer. Analysis of 100 fields each at 150X, 1500X, and 15,000X. Approximately 100,000 particles examined.

RESULTS:

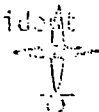
No asbestos detected.

Analyst


John H. Mehring
Executive Vice President

EMV ASSOCIATES INC

MICROANALYSIS LABORATORY
15825 Shady Grove Road
Rockville, Maryland 20850



CERTIFICATE OF MICROANALYSIS FOR ASBESTOS

SAMPLE DESCRIPTION:

1977 Sample #3 - J&J Thailand (Korean MA200 Mesh)

METHOD OF ANALYSIS: Qualitative physical and chemical characteristics of fibrous material with the scanning electron microscope and energy dispersive x-ray analyzer. Analysis of 100 fields each at 150X, 1500X and 15,000X. Approximately 100,000 particles examined.

RESULTS:

No asbestos detected.

Analyst [Signature]

Date 7/24/77

[Signature]
John H. Wehrung
Executive Vice Pres.

EMV ASSOCIATES INC

MICROANALYSIS LABORATORY
15825 Shook Grove Road
Rockville, Maryland 20850

CERTIFICATE OF MICROANALYSIS FOR ASBESTOS

SAMPLE DESCRIPTION:

1977 Sample #4 - J&J India (Indian-Besta Grade)

METHOD OF ANALYSIS: Qualitative physical and chemical characteristics of fibrous material with the scanning electron microscope and energy dispersive x-ray analyzer. Analysis of 100 fields each at 150X, 1500X and 15,000X. Approximately 100,000 particles examined.

RESULTS:

No asbestos detected.

Analyst [Signature]

[Signature]
John H. Wehrung
Executive Vice Pres.

EMV ASSOCIATES INC

MICROANALYSIS LABORATORY
15825 Shook Grove Road
Rockville, Maryland 20850

CERTIFICATE OF MICROANALYSIS FOR ASBESTOS

SAMPLE DESCRIPTION:

1977 Sample No. 7 - J&J Philippines (Korean Talc M4325)

METHOD OF ANALYSIS: Qualitative physical and chemical characteristics of fibrous material with the scanning electron microscope and energy dispersive x-ray analyzer. Analysis of 100 fields each at 150X, 1500X and 15,000X. Approximately 100,000 particles examined.

RESULTS:

No asbestos detected.

Analyst

Date

11/4/77

John H. Wehrung
Executive Vice President

EMV ASSOCIATES INC

MICROANALYSIS LABORATORY
15825 Inwood Grove Road
Rockville, Md. 20850

CERTIFICATE OF MICROANALYSIS FOR ASBESTOS

SAMPLE DESCRIPTION:

1977 Sample No. 8 - J&J England (Italian Talc 00100)

METHOD OF ANALYSIS: Qualitative physical and chemical characteristics of fibrous material with the scanning electron microscope and energy dispersive x-ray analyzer. Analysis of 100 fields each at 150X, 1500X, and 15,000X. Approximately 100,000 particles examined.

RESULTS:

No asbestos detected.

Analyst

John H. Wehrung
Executive Vice President

EMV ASSOCIATES INC

MICROANALYSIS LABORATORY
15825 Inwood Grove Road
Rockville, Md. 20850

FREEDOM FROM ASBESTOS

BY CTFA METHOD

All talcs passed the freedom from fibrous amphibole test prescribed in CTFA J4-1 as prescribed in the latest issue of Cosmetic Talc specification by the Cosmetic Toiletry and Fragrance Association of the U.S.A.

However, the Australian talc did show presence of an amphibole by the x-ray part of the test but it was easily classified as non-fibrous (non-asbestiform) by the dispersion staining technique*.

*This finding is encountered very occasionally and is no cause for concern since the dispersion staining part of the test reads non-asbestiform.

QUALITATIVE ANALYSIS OF MINERAL CONSTITUENTS
BY X-RAY DIFFRACTOMETRY

WORLD TALC SURVEY - 1977

<u>J&J Affiliate Country</u>	<u>Qualitative Analysis</u>		<u>Trace Components 0-2%</u>
	<u>Major 10%</u>	<u>Minor 2-10%</u>	
1. Canada	talc		chlorite, dolomite, magnesite, rutile
2. Mexico	talc	chlorite	magnesite, dolomite
3. Thailand	talc	dolomite	chlorite, magnesite
4. India	talc		magnesite, chlorite, dolomite
5. Pakistan	talc		chlorite, magnesite
6. Australia	talc	chlorite	calcite, amphibole (non- fibrous)
7. Philippines	talc		dolomite, chlorite
8. England	talc	chlorite	dolomite, calcite, magnesite

OPTICAL MICROSCOPY

The attached table of findings sums up Petrographic examinations. Two of the talcs are not up to the platiness of the others. Australia and Pakistan both show about 20% non-platy talc. That represents no change for Australia but the Pakistan talc of 1977 is now less platy than the 1976 sample.

The attached notation of a trace of non-fibrous amphibole perceived in the Thailand talc is for research reference only.

MICROSCOPIC EXAMINATION

Determination of crystal structure and freedom from:
quartz, amphibole minerals (e.g., tremolite), and
fibrous serpentine (chrysotile).

<u>Affiliate (J&J) Country</u>	<u>Talc</u>	<u>Structure</u>	<u>Amphibole</u>	<u>Fibrous Serpentine</u>	<u>Quartz</u>
1. Canada	V-66	Platy	none	none	trace
2. Mexico	Italian Mexico-Ground	Platy	none	none	trace
3. Thailand	Korean-NA200	Platy	trace (non-fibrous)	none	trace
4. India	Besta	Platy	none	none	trace
5. Pakistan	Kashmiri-GradeA	Platy-Granular	none	none	trace
6. Australia	Flinders	Platy-Granular	none	none	trace
7. Philippines	Korean NA325	Platy	none	none	trace
8. England	Italian	Platy	none	none	trace

OXIDE ASSAYS AND TALC CONTENT

The following table shows good uniformity of grade for each talc as compared to the same source of one year ago.

All talcs are comfortably above the 90% theoretical talc mineral content as suggested in the CTFA specification for cosmetic talcs.

WORLD TALC SURVEY - 1977

OXIDES ANALYSIS

% BY WT.

Country	SiO ₂	MgO	Al ₂ O ₃	Fe ₂ O ₃	CaO	Loss on Ignition	H ₂ O Moisture at 105°C	CO ₂	Theoretical Calculated % Talc Content
1. Canada	61.32	29.41	0.50	3.58	0.15	5.04	0.03	0.86	96.7
2. Mexico	60.46	30.82	1.51	0.97	0.39	5.76	0.04	0.77	95.4
3. Thailand	61.00	30.59	0.32	1.13	0.91	6.08	0.07	1.32	96.3
4. India	61.98	31.42	0.54	0.48	0.52	5.05	0.02	0.32	97.8
5. Pakistan	63.01	31.55	0.07	0.21	0.18	5.07	0.05	0.29	99.4
6. Australia	58.04	30.96	3.85	1.03	0.25	5.95	0.03	0.21	91.6
7. Philippines	61.07	30.65	0.54	1.26	0.69	5.63	0.06	1.08	96.4
8. England	59.68	30.65	2.16	1.33	0.41	5.79	0.05	0.49	94.2

TRACE METALS & ACID SOLUBILITY

The following two tables of data show nothing unusual in any of the 1977 talcs as compared to previous years findings.

TRACE METALS - BY ATOMIC ABSORPTION - 1977

	<u>J & J Affiliate</u>	<u>Talc</u>	<u>Fe%</u>	<u>Ni</u>	<u>Mn</u>	<u>Cr</u>	<u>Co</u>	<u>Cu</u>	<u>As</u>	<u>Heavy Metals as Lead</u>
1.	Canada	V-66	2.39	1773	46	363	69	20	NMT 2	NMT 10
2.	Mexico	Italian Mexican Grind	0.67	26	26	27	14	18	NMT 2	NMT 10
3.	Thailand	Korean NA200	0.80	22	30	18	18	17	NMT 2	NMT 10
4.	India	Besta	0.34	35	24	15	20	18	NMT 2	NMT 10
5.	Pakistan	Kashmiri Grade A	0.12	17	6	19	16	18	NMT 2	NMT 10
6.	Australia	Flinders	0.96	37	25	39	47	23	NMT 2	NMT 10
7.	Philippines	Korean NA325	0.99	36	36	26	52	24	NMT 2	NMT 10
8.	England	Italian	0.95	31	36	28	44	21	NMT 2	NMT 10

All data parts per million except Fe% by weight

U.S.A. Domestic Specs: Arsenic TM 1233 NMT(No more than) 2ppm
Heavy Metals TM 1232 NMT 10ppm

Determination of Acid Solubility of
Johnson & Johnson Affiliate Talcs

1977

Johnson & Johnson U.S.A. Specification Test Used is TM 1228

<u>Affiliate Talc & Country</u>	<u>Acid Solubility %</u>
1. J&J Canada (V-66)	1.79
2. J&J Mexico (Italian-Mexico Ground)	3.10
3. J&J Thailand (Korean NA-200)	3.67
4. J&J India (Besta)	1.98
5. J&J Pakistan (Kashmiri-Grade A)	1.63
6. J&J Australia (Flinders)	3.36
7. J&J Philippines (Korean NA-325)	3.16
8. J&J England (Italian)	3.58

U.S.A. Domestic-Specs	2.00% max.
U.K.-Specs (Italian Talc)	6.00% max.

OFFICIAL DOCUMENT

The attached Information Circular 9751 issued by the U. S. Bureau of Mines officially defines precise information and nomenclature of the minerals involved in the talc/asbestos controversy.

The circular is a valuable technical reference for all industries engaged in any aspect of talc and its allied mineral species.