



Ms. Laurie Kazan-Allen, Coordinator
International Ban Asbestos Secretariat

May 16, 2018

Address redacted

Re: Asbestos Testing of Various UK Claire's Products

Ms. Kazan-Allen,

On April 12, 2018, I received at my laboratory, Scientific Analytical Institute, three Claire's products purchased on April 8th at a Claire's store in Edgware Middlesex, which I understand is in a suburb of London. These three products included a Pink Shimmer Blusher, a UNICORN PWR Glitter Eyeshadow Compact, and a Neutral Pinks Eyeshadow Palette. Through communications with you, it was understood that you wished for my laboratory to prepare and analyze these products to determine asbestos content.

This document records my findings of that testing to date, summarizing analytical results of testing of those products specifically for the presence of asbestos using Transmission Electron Microscopy (TEM), to include examination by Selected Area Electron Diffraction (SAED) and Energy-Dispersive X-ray Analysis (EDXA; a.k.a., EDS or EDX). Polarized Light Microscopy (PLM) was also used to examine the products, with less conclusive findings than the electron microscopic analysis, which is consistent with other such powders tested.

Methods and Equipment

The products were analyzed for constituent characterization, mineral identification, and for the presence of asbestos by PLM and TEM following the analytical procedures described in the U.S. Environmental Protection Agency "Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials". Further, as the intended use and nature of the products is likely to make respirable-size fraction particles airborne, the powders were further analyzed to determine if structures consistent with the definition of countable structures by the EPA AHERA counting protocol were present in the material, and quantified on an asbestos structure per gram weight basis.

PLM analyses were conducted on a Leica DM750P petrographic microscope with cross-polarized filters, wave retardation, and dispersion staining techniques at magnifications up to 400X. TEM analyses were conducted on a JEOL 2000FX TEM equipped with EDXA and SAED at magnifications up to 50,000X, at an acceleration voltage of 100KeV.

Preparations

The samples were prepared for electron microscopy analysis by weighing and suspending portions of the samples in an alcohol/deionized water mix. Measured aliquots of the sample suspensions were then filtered through a 0.2 µm mixed cellulose ester (MCE). The final MCE filters were dried, collapsed with acetone, and coated with carbon in a vacuum evaporator. The fibers and solids collected on the carbon-coated filter replicate were transferred onto copper grids for TEM analysis.

Results

Results of analyses of these Claire's products are provided in the following sections of this report.



Claire's Pink Shimmer Blusher (Style No. 38079)



Figures 1 and 2: Pink Shimmer Blusher product as received.



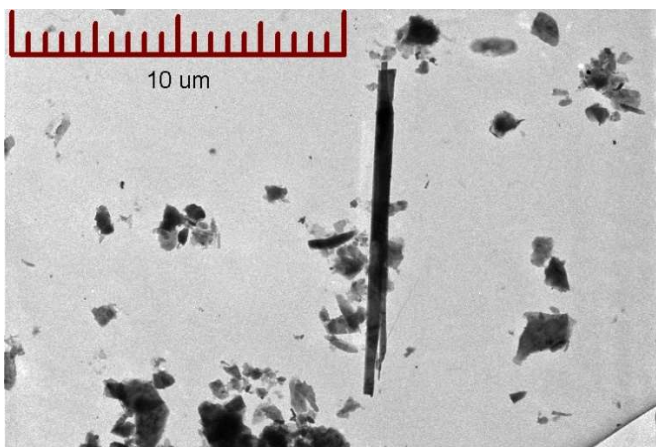
Figure 3: Pink Shimmer Blusher Product as received.



Claire's Pink Shimmer Blusher (Style No. 38079)

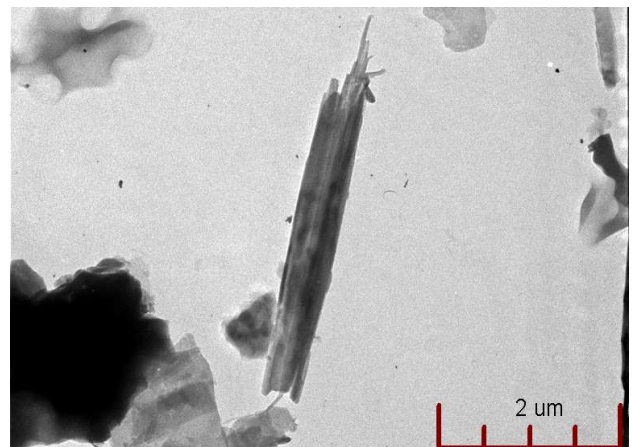
Analysis of the Pink Shimmer Blusher's mineral and possible asbestos content by TEM revealed abundant fibers and fibrous structures countable by AHERA as asbestos. **Concentrations of asbestiform fiber structures per gram (str/g) of the product were calculated at 18,100,000 tremolite asbestos structures per gram.** Representative photomicrographs taken during the analysis of this sample are provided below.

In consideration of the stated weight of the Pink Shimmer Blusher product of 6.2 grams, this product contains ***more than 112,000,000 amphibole asbestos fibers.***



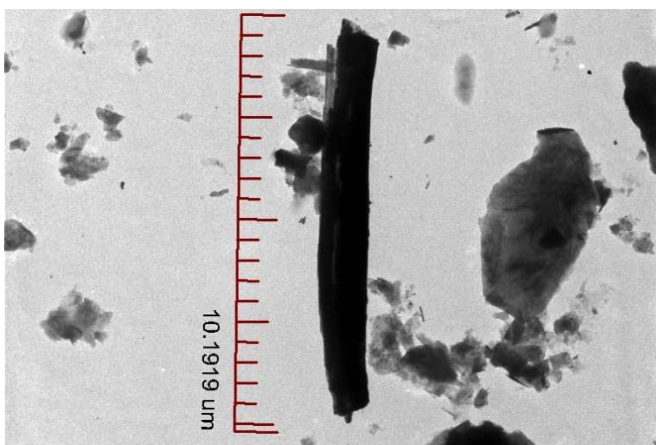
5/16/2018
HT: 100kV
TEM Magnification: 4,000x

UK Claire's Blusher Tremolite



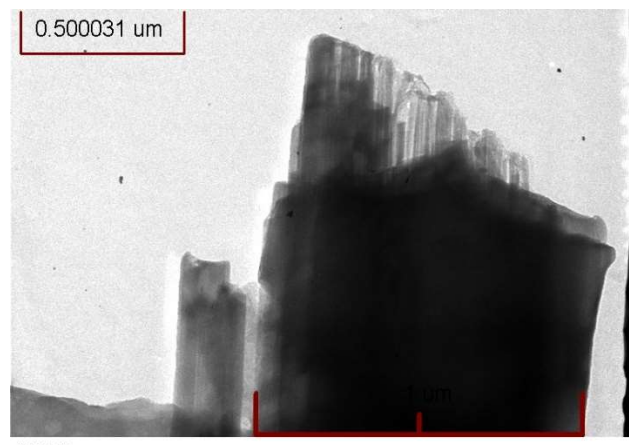
5/16/2018
HT: 100kV
TEM Magnification: 12,000x

UK Claire's Blusher Tremolite



5/16/2018
HT: 100kV
TEM Magnification: 5,000x

UK Claire's Blusher Tremolite



5/16/2018
HT: 100kV
TEM Magnification: 40,000x

UK Claire's Blusher Tremolite

Figures 4-7: Photomicrographs of tremolite in Claire's Pink Shimmer Blusher. Image #7 (bottom right) is a close-up of the top of the bundle pictured in image #6 (bottom left). Notice "bundle-of-sticks" morphology indicative of asbestiform habit.



Claire's "UNICORN PWR" Glitter Eyeshadow Compact (Style No. 57710)



Figures 8 and 9: "UNICORN PWR" Glitter Eyeshadow Compact product as received.

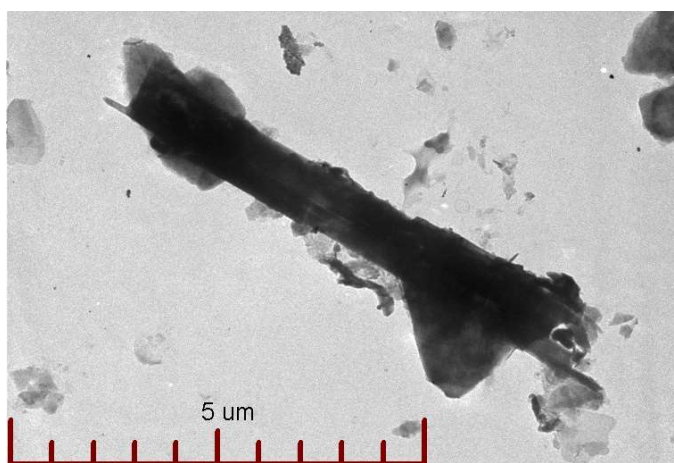


Figure 10: "UNICORN PWR" Glitter Eyeshadow Compact product tested.



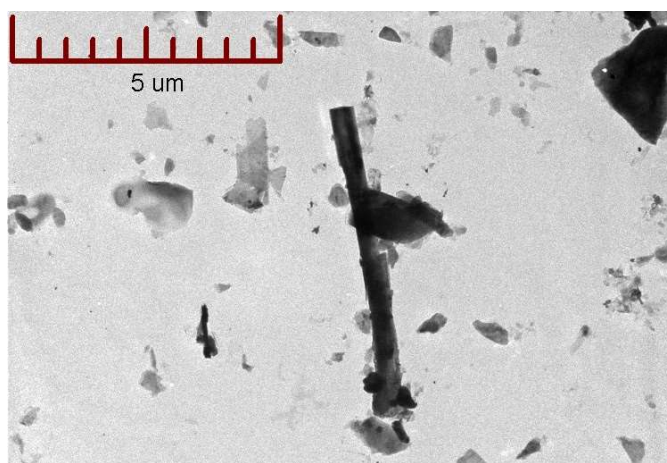
Claire's "UNICORN PWR" Glitter Eyeshadow Compact (Style No. 57710)

Analysis of the UNICORN PWR Glittery Eyeshadow Compact's mineral and possible asbestos content by TEM revealed abundant fibers and fibrous structures countable by AHERA as asbestos. **Concentrations of asbestiform fiber structures per gram (str/g) of the product were calculated at 8,750,000 tremolite asbestos structures per gram.** Representative photomicrographs taken during the analysis of this sample are provided below.



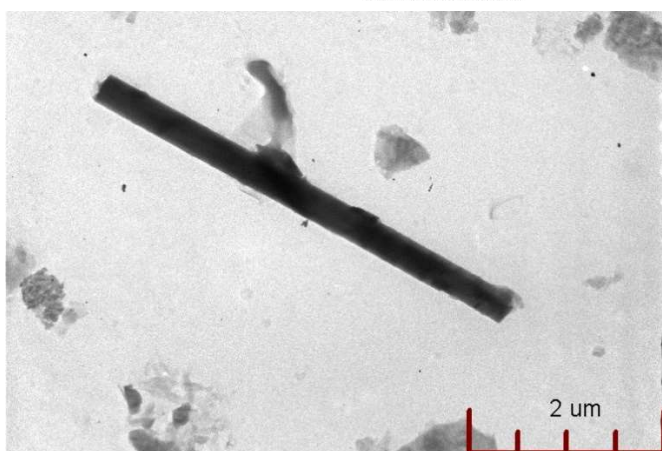
5/16/2018
HT: 100KV
TEM Magnification: 10,000x

UK Claire's Unicorn PWR Tremolite



5/16/2018
HT: 100KV
TEM Magnification: 6,000x

UK Claire's Unicorn PWR Tremolite



5/16/2018
HT: 100KV
TEM Magnification: 12,000x

UK Claire's Unicorn PWR Tremolite

Figures 11-13: Photomicrographs of tremolite in the Claire's UNICORN PWR Glittery Eyeshadow Compact.



Claire's Neutral Pinks Eyeshadow Palette (Style No. 84716)



Figures 14 and 15: Neutral Pinks Eyeshadow Palette product as received.



Figure 16: Neutral Pinks Eyeshadow Palette product tested (3 colors selected randomly).



Claire's Neutral Pinks Eyeshadow Palette (Style No. 84716)

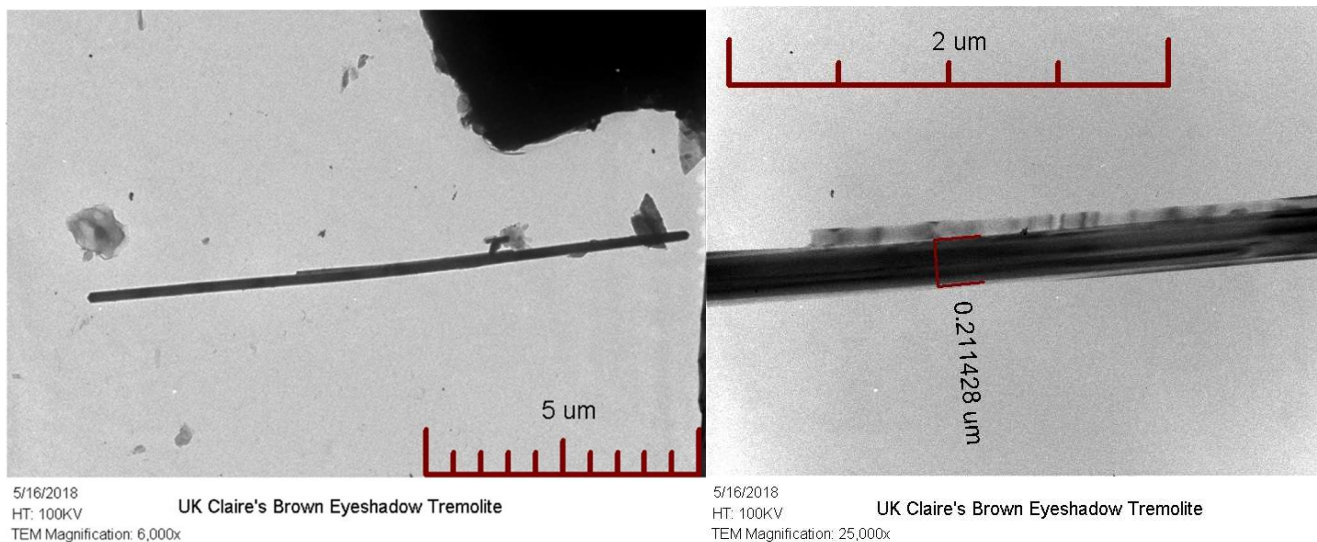
Three eyeshadows were selected from the Neutral Pinks Eyeshadow Palette for analysis of mineral and possible asbestos content: gold, brown, and taupe (lab descriptions). While no asbestos was observed in the gold, analysis of the brown and taupe colors by TEM revealed abundant fibers and fibrous structures countable by AHERA as asbestos. Concentrations of asbestiform fiber structures per gram (str/g) were calculated as follows:

Eyeshadow Color:

Brown (*lab description – sixth powder from the left*)
Taupe (*lab description – ninth powder from the left*)

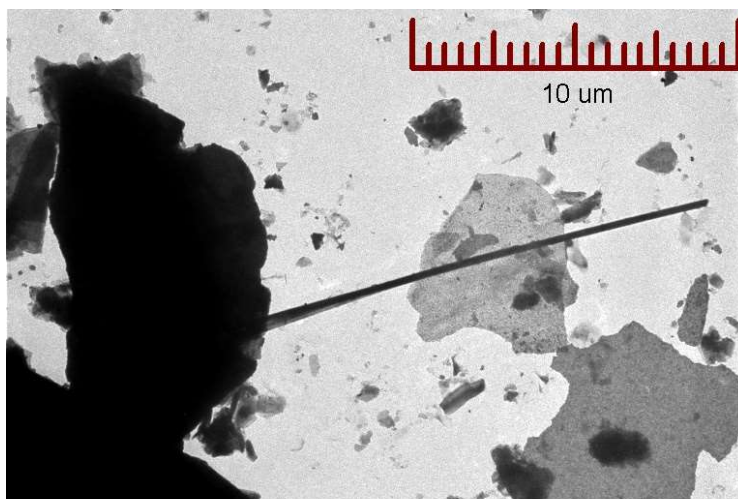
Tremolite Asbestos Concentrations:

72,400,000 str/g
18,700,000 str/g



Figures 17&18: Photomicrographs of tremolite bundle in Claire's Eyeshadow Palette, sample of brown eyeshadow. Image #18 (right) is a close-up of the center of the bundle pictured in image #17 (left). Notice "bundle-of-sticks" morphology indicative of the asbestiform crystal habit. Individual bundle fiber constituents observed at less than 1/10 of a micron wide, displaying length to width aspect ratios in excess of 100 to one ($> 100:1$).

Please note that, where the Neutral Pinks Eyeshadow Palette is concerned, upon selecting three colors, two were revealed to contain tremolite asbestos, while no asbestos was detected in the third. This illustrates that **there is no way to visibly determine the presence of asbestos in, and thus the safety or danger of, these products.** In fact, most asbestos detected in these products by TEM would escape detection by either XRD or PLM analytical methods, which are occasionally used to inappropriately assert asbestos absence by talc and talc-based product producers and manufacturers to falsely proclaim freedom from known human health hazard. As is obviously demonstrated by the asbestos fibers found throughout these friable powder products, ***use of these materials in a manner consistent with that intended would clearly pose an unnecessary preventable route for exposure to a proven Class-1 carcinogen: amphibole asbestos.*** Further, these tests are consistent with and confirmatory to the repeated finding of asbestos in Claire's makeup products tested from over a dozen different studies, in multiple laboratories, and now originating from at least six different countries all over the world- all Claire's talc-based products, marketed toward young girls, that were purchased over the counter in the last year (May 2017 to May 2018).



5/16/2018
HT: 100kV
TEM Magnification: 3,000x
UK Claire's Taupe Eyeshadow Tremolite

Figure 19: Photomicrograph of tremolite bundle in Claire's Eyeshadow Palette, taupe eyeshadow.



Figure 20: 10 mg of talc on a US penny for scale (0.75 in.; 19.05mm diameter). An equivalent amount of the Pink Shimmer Blusher, "UNICORN PWR" Eyeshadow, or the Neutral Pinks Palette purchased last month near London, England would contain between 87,500 and 724,000 asbestos fibers.

Sean Fitzgerald, PG
Director of Research and Legal Services