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Forensic Analytical

QUANTITATIVE ANALYSIS REPORT
ASBESTOS IN BULK MATERIAL
Transmission Electron Microscopy

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Page: 1 of 1
Client Number: A30388-1
Report Number: T006625
Date Received: 12/19/03
Analyst: RE
Date Analyzed: 1/5/04
Date Reported: 1/5/04

Date Collected: KORA Television/Dave Walker
Job ID:
Site:

Sample Preparation: Each sample was prepared using the following gravimetric techniques. Representative subsamples were weighed, ashed for 12 hours at 480C, and reweighed to determine the organic proportion. The ashed residues were ground in concentrated hydrochloric acid, dried, and reweighed to determine the acid-soluble component weight percent. The acidified residue was resuspended in a known volume of particle-free water and sonicated. Aliquots of this suspension were brought to 20ml and filtered through 0.22um pore-size mixed cellulose ester (MCE) membranes. After air-drying, these membranes were cut/piped, stored, carbon-coated, and mounted on 200-mesh copper TEM grids.

Analytical Method: The analysis was performed on a Philips CM12 or Hitachi H800AB TEM at 100kV accelerating voltage. An analytical method was used for large asbestos structures, followed by a high magnification analysis (-15,000x) for smaller asbestos structures. Asbestos structures were identified by morphology (Yarnell Level II identification), qualitative selected area electron diffraction (SAED), and energy dispersive x-ray analysis (EDX). In addition, the length and diameter of each asbestos structure were recorded.

Data Reduction: The asbestos concentration in each sample was calculated by first determining the volume of each asbestos structure counted, and then using magnification and density conversion factors to determine asbestos mass. The mass detected in the high magnification analysis was then normalized to the number of grid openings analyzed and the aliquot volume filtered for the low magnification analysis. Since a known residue mass was passed through a known filter area, and the filter area analyzed is also known, the normalized asbestos mass in the residue can be determined and then back-calculated to the weight percent asbestos in the original sample.

ANALYTICAL RESULTS						
Client Sample Number	Lab Sample Number	Organic Weight Percent	Acid-Soluble Weight Percent	Asbestos Weight Percent	Asbestos Type(s)	Residue Weight Percent
TEM-07 (Johnson's baby powder)	20025738	3.8%	6.7%	0.20%	AN	60.3%
TEM-03 (Ravon Blush)	20025739	29.7%	13.1%	<0.0001%	ND	57.2%

Mark S. Floyd, EM Supervisor, Heywood Laboratory

- EPA Test Method 8010-93/116, Part 2.5: Method for the Determination of Asbestos in Bulk Building Materials.
-- Asbestos types: CH-chrysotile; AM-amosite; TR-tremolite; AC-actinolite; CR-crocidolite; AN-anthophyllite; ND-not detected.

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PAGE-03



PLAINTIFF'S EXHIBIT
CAM-386

Sample Preparation: Each sample was prepared using the standard procedure. The dried residues were ground in weight, ashed for 12 hours, at 400°C, and reweighed to determine the organic component weight percent. The acidified residue was resuspended in a known volume of particle-free water and sonicated. Aliquots of this suspension were brought to 200m and filtered through 0.2µm pore-size mixed cellulose ester (MCE) membranes. After air-drying, these membranes were collapsed, rinsed, carbon-coated, and mounted on zinc mesh copper TEM grids.

Analytical Method: The analysis was performed on a Philips CM12 or Hitachi H800AR TEM at 100kV accelerating voltage. An extended low magnification analysis (~2,000x) was performed for large asbestos structures, followed by a high magnification analysis (~19,000x) for smaller asbestos structures. Asbestos structures were identified by morphology (Yamada Level I definitions), qualitative selected area electron diffraction (SAED), and energy dispersive x-ray analysis (EDX). In addition, the length and diameter of each asbestos structure were recorded.

Data Reduction: The asbestos concentration in each sample was calculated by first determining the volume of each asbestos structure counted, and then using magnification and density conversion factors to determine asbestos mass. The mass detected in the high magnification analysis was then normalized to the number of grid openings analyzed and the aliquot volume filtered for the low magnification analysis. Since a known residue mass was passed through a known filter area, and the filter area analyzed is also known, the normalized asbestos mass in the residue can be determined and then back-calculated to the weight percent asbestos in the original sample.

ANALYTICAL RESULTS						
Client Sample Number	Lab Sample Number	Organic Weight Percent	Acid-Soluble Weight Percent	Asbestos Weight Percent	Asbestos Type(s)**	Residue Weight Percent
TEM-02 (Johnson's baby powder)	20025738	3.6%	8.7%	0.20%	AN	49.3%
TEM-03 (Revlon blush)	20025739	29.7%	13.1%	<0.0001%	NO	57.2%

Mark S. Floyd, EM Supervisor, Hayward Laboratory

* EPA Test Method 600/4-93/116, Part 2.5: Method for the Determination of Asbestos in Bulk Building Materials.

** Asbestos types: CH=chrysotile; AM=amosite; TR=tremolite; AC=actinolite; CR=crocidolite; AN=anthophyllite; NO=none detected.

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PAGE 04

** TOTAL PAGE.05 **