

RESULTS OF AIR SAMPLES

RAYBESTOS-MANHATTAN
Textile Plant
Charleston, South Carolina

Report Prepared By:

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July, 1966

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U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL
INFORMATION SERVICE
SPRINGFIELD, VA 22161

REPORT DOCUMENTATION PAGE	1. REPORT NO. IWS-32.24b	2. NA	3. Recipient's Accession No. NA
4. Title and Subtitle Results of Air Samples at Raybestos-Manhattan Textile Plant, Charleston, South Carolina			5. Report Date July, 1966
7. Author(s) Lynch, J.R.			6. NA
9. Performing Organization Name and Address Industrial Hygiene Section, Industry-wide Studies Branch, Division of Surveillance, Hazard Evaluation and Field Studies, NIOSH, Cincinnati, Ohio			8. Performing Organization Rept. No. NA
12. Sponsoring Organization Name and Address Same as Above			10. Project/Task/Work Unit No. NA
			11. Contract(C) or Grant(G) No. (C) NA (G)
			13. Type of Report & Period Covered Industry-wide Study
			14. NA
15. Supplementary Notes NA			
16. Abstract (Limit: 200 words) Air sampling for asbestos (1332214) dust was conducted at the Raybestos-Manhattan Textile Company (SIC-2221) in Charleston, South Carolina, during May, 1965. Sampling was performed with an impinger and a membrane filter sampler. Impinger collected breathing zone samples contained up to 10.6 million particles per cubic foot of asbestos. Breathing zone samples taken with the membrane filter contained up to 6.4 fibers greater than 10 microns per cubic centimeter (f/cc). Personal air samples contained up to 16.2f/cc. Only concentrations in the blender area exceeded the current threshold limit value of 5mppcf of asbestos dust.			
17. Document Analysis a. Descriptors Field-study, Air-sampling, Asbestos-dust, Textile-industry, Industrial-hygiene, Dust-exposure, Health-survey, Dust-analysis, Work-environment, b. Identifiers/Open-Ended Terms Sample-collection c. COSATI Field/Group			
18. Availability Statement Available to the Public		19. Security Class (This Report) NA	21. No. of Pages 12
		20. Security Class (This Page)	22. Price

File 0327

plant #13

July 6, 1966

Mr. A. F. Heinsohn
Plant Manager
General Asbestos and Rubber Division
Raybestos-Manhattan, Inc.
North Charleston
South Carolina

Dear Mr. Heinsohn:

The analysis of the air samples collected in your plant during our survey in May 1965 has been completed and the results are attached.

The impinger samples were counted during the survey using the American Conference of Governmental Industrial Hygienists' method. The membrane filters were rendered transparent with a 50-50 mixture of diethyl oxalate, dimethyl phthalate and counted at 430X magnification with phase contrast illumination.

Most of the dust concentrations as measured by impingers were under the 5 million particle per cubic foot Threshold Limit Value currently in use. The membrane filter method is experimental and no standards have been set for its interpretation. Some relationships between the impinger and filter measurement are discussed in the enclosed preprint.

Your cooperation in this study is sincerely appreciated, and the data gained from your plant is of considerable value.

Sincerely yours,

Jeremiah R. Lynch
Senior Sanitary Engineer
Engineering Section
Research and Technical
Services Branch

Enclosures

(Bom)
cc: W. T. Linton, Director - Through State Health Officer
Dr. L. J. Cralley
Dr. C. H. Powell, Region IV Program Director

JRLYNCH:rg

Results of Air Samples of May, 1965
Raybestos-Manhattan
Charleston, South Carolina
Textile

Operation	Impinger		Membrane Filter		
	Sample #	mppcf	Sample #	Total Fibers/cc 10 μ +	
Fiber Preparation					
Blender--EZ	222	10.6	224	16.8	0.3
	206	0.0	207	0.3	0.1
	143	0.5	142	26.7	0.7
	137	0.3	136	17.5	0.2
	220	0.7	221	13.1	6.4
Personal			216	12.4	0.4
			218	10.8	0.5
			396	11.9	2.9
			468	18.9	3.6
Stock Packer--EZ	224	0.7	225	16.2	0.4
	226	0.6	227	11.2	0.1
	229	1.5	230	20.2	0.1
	233	0.5	234	23.1	2.5
Personal			217	23.0	8.9
			467	17.5	1.0
Stock Opening Op.--EZ	210	0.7	211	39.4	2.8
	111	0.0	110	14.6	0.6
Personal			466	12.1	1.0

NOTES ON ABBREVIATIONS

"Personal" refers to personal samples on membrane filters

"EZ" refers to breathing zone samples by companion impinger & membrane filter

"Seq." refers to unattended samples taken by a sequential sampler

"Gen." refers to samples of general air in the particular department

Raybestos-Manhattan

Operation	Impinger		Membrane Filter		
	Sample #	mppcf	Sample #	Fibers/cc Total 10 u +	
Fiber Preparation - Continued					
Foreman					
Personal			398	1.7	0.1
Waste Machine Op.--EZ	123	0.6	122	27.1	6.3
	125	0.1	124	0.3	0.3
	117	0.0	116	2.1	0.0
Personal			465	14.6	2.5
Wheelabrator Op.					
Personal			397	27.1	6.8
Textile Mill Clerk--EZ	126	0.1	144	5.8	0.0
Willow Operator					
Personal			219	11.5	0.8
Carding					
Card Operator--EZ	150	0.1	149	4.9	0.4
	160	0.2	159	1.0	0.4
	247	0.7	248	8.4	0.2
	245	0.3	246	3.3	0.2
	243	0.3	244	2.7	0.2
	255	0.2	256	7.9	0.0
	261	0.5	262	3.1	0.8
	327	0.0	328	1.8	0.0
	325	0.9	326	25.1	1.4
	323	0.2	324	3.3	0.0
	319	0.2	320	2.5	0.0
	317	0.1	318	4.9	0.4
	344	0.5	345	8.2	0.2
	352	0.7	353	18.7	1.0
	350	0.3	351	3.7	0.4
	358	0.2	359	1.6	0.0
	313	0.2	314	0.8	0.2

Raybestos-Manhattan

Operation	Impinger		Membrane Filter		
	Sample #	mppcf	Sample #	Fibers/cc	
				Total	10 u +
Carding - Continued					
Card Operator - Continued					
Personal			500	8.1	0.7
			502	4.1	1.5
			38	10.3	0.9
			287	9.2	1.4
			288	21.0	4.2
			289	7.3	0.9
			299	5.0	0.4
			298	20.2	7.7
			460	9.6	1.2
			401	4.2	0.9
			462	9.0	0.6
			464	11.8	0.4
Card Stocker--EZ	170	0.7	169	11.8	0.4
	166	0.5	165	11.8	0.4
	158	0.8	157	12.0	0.3
Personal			39	15.4	0.9
Finer					
Personal			501	4.6	1.6
			46	7.2	0.4
			36	4.6	0.6
			348	0	0
			297	9.5	3.1
Roving Hauler--EZ	336	0.3	337	4.5	0.0
	253	0.7	254	11.5	1.0
Personal			463	7.6	0.6
			461	9.9	1.2
			400	11.5	1.1
			290	4.3	1.5

Raybestos-Manhattan

Operation	<u>Impinger</u>		<u>Membrane Filter</u>		
	Sample #	appcf	Sample #	Total Fibers/cc 10 u +	
Carding - Continued					
Lap Card Op.--BZ	334	0.1	335	5.3	0.4
	231	0.2	232	12.6	0.3
	190	0.2	189	1.4	0.2
Oiler--BZ	315	0.2	316	7.5	0.2
Textile Mill Clerk--BZ	168	0.2	167	4.9	1.2
	Personal		285	73.8	16.2
Card Grinder--BZ	338	0.9	339	7.6	0.6
	Personal		286	3.9	0.1
Fly Puller--BZ	156	0	155	6.7	-0.1
Foreman					
	Personal		37	1.9	0.0
Lap Winder					
	Personal		349	0	0
Spinning					
Ring Spinner--BZ	381	0.2	382	4.5	1.6
	197	0.4	198	1.2	0.0
	9	0.4	8	5.8	0.6
	199	0.8	1	12.7	1.4
	363	0.3	364	3.1	0.8
	371	1.4	372	11.3	0.8
	369	0.7	370	4.3	0.0
	367	0.9	368	10.9	2.1
	365	0.8	366	8.2	0.8
	379	4.1	380	0	0
	269	2.3	270	7.2	2.5
	263	0.1	264	3.1	2.3

Raybestos-Manhattan

Operation	<u>Impinger</u>		<u>Membrane Filter</u>		
	Sample #	appof	Sample #	<u>Fibers/co</u> Total	10 u +
Spinning - Continued					
Ring Spinner - Cont'd.					
Personal			40	31.0	5.6
			42	2.7	0.1
			61	3.8	0.3
			434	5.8	0.6
			51	4.4	0.6
			48	6.4	0.6
			41	32.6	3.2
			64	67.1	9.6
			65	3.4	0.4
			430	6.4	0.3
			432	2.3	0.3
			431	4.1	0.5
			433	3.1	0.4
			435	2.8	0.2
			442	2.1	0.3
			443	4.0	0.5
			444	5.6	0.4
Mule Spinner--EZ	273	1.3	274	6.6	2.1
	271	1.3	272	11.1	2.3
	30	0.3	31	1.1	0.4
	28	0.3	29	3.8	0.0
Personal			451	2.4	0.2
			452	2.1	1.1
			450	2.9	0.3
			449	2.0	0.4

Raybestos-Manhattan

Operation	Impinger		Membrane filter		
	Sample #	appcf	Sample #	Fibers/cc Total 10 u +	
Spinning - Continued					
Yarn Hauler--EZ	6	--	7	--	--
Personal			47	8.5	1.0
			447	4.1	2.5
			66	3.4	0.2
Foreman					
Personal			429	3.6	0.3
			50	9.0	1.1
Fly Puller--EZ	15	1.2	16	8.0	1.2
Doffer					
Personal			448	1.6	0.3
			453	5.9	0.4
			49	4.1	0.4
Lab Porter					
Personal			63	1.1	0.0
Twisting					
Twister--EZ	424	--	425	1.4	0.2
	69	0.1	70	3.2	0.0
	518	0.1	519	0.6	0.0
	410	0.2	411	2.9	0.6
	412	0.1	413	4.3	1.2
	414	1.0	415	5.1	2.1
	418	1.9	419	13.1	4.7
	420	1.0	421	1.4	0.4
	471	0.2	472	0.6	0.8
Personal			92	8.3	1.3

Raybestos-Manhattan

Operation	Impinger		Membrane Filter		
	Sample #	appcf	Sample #	Total Fibers/cc 10 u +	
Twisting - Continued					
Fixer					
Personal			89	6.2	0.8
Doffer					
Personal			99	1.9	1.1
Dope Mixer--EZ	59	--	60	1.0	0.0
Winding					
Winder--EZ	526	0	527	1.3	0.0
	85	0.3	86	3.1	0.0
	71	0.2	72	7.6	1.2
	67	0.1	68	3.2	0.0
	469	0.1	470	1.8	0.4
	458	0.3	459	3.1	0.0
	456	0.1	457	2.3	0.0
	454	0.2	455	0.8	0.2
	422	0.2	423	1.0	0.0
	416	0.4	417	6.8	2.3
	507	0.4	508	7.2	0.0
	295	0.4	296	4.1	0.4
	279	1.4	280	7.2	1.0
	277	0.5	278	5.4	1.7
	275	1.0	276	5.1	3.1
Personal			93	1.3	0.8
			94	3.1	1.3
			95	1.5	1.2
			96	1.2	0.8
			97	2.1	0.9
			98	7.0	1.0
			90	0.9	0.7

Raybestos-Manhattan

Operation	<u>Impinger</u>		<u>Membrane Filter</u>		
	Sample #	mpcf	Sample #	Total	Fibers/cc 10 u +
Winding - Continued					
Winder - Continued					
Personal- cont'd.			606	4.7	0.4
			603	1.7	1.7
			602	3.2	1.6
			91	4.5	0.5
			605	5.8	0.6
			604	2.9	0.3
			601	4.4	0.4
			600	2.4	1.2
Fixer--EZ	87	0.2	88	0.7	0.5
Spool Cutter--EZ	528	0.1	529	2.9	0.4
Weaving					
Cloth Weaver--EZ					
	481	0.2	482	1.8	0.4
	473	0.3	474	1.6	0.4
	475	0.4	476	1.0	0.6
	440	0.3	441	0.8	0.0
	592	0.0	593	0.6	0.0
	584	0.3	585	0.8	0.0
	586	0.1	587	5.5	0.4
	580	0.2	581	0.6	0.4
	554	0	555	0.3	0.0
	544	0.1	545	1.0	0.3
	546	0.2	547	7.4	1.9
	541	0.1	542	1.8	0.6
	707	0.3	708	4.5	0.0
	637	0.4	636	3.8	1.2
	624	0.2	623	6.0	3.1
	626	0.8	625	4.3	1.2

Raybestos-Manhattan

Operation	Impinger		Membrane Filter		
	Sample #	mppcf	Sample #	Total	Fibers/co 10 u +
Weaving - Continued					
Cloth Weaver--EZ Cont'd.	609	0.1	610	1.8	2.1
	607	0.3	608	1.0	0.6
Personal			691	2.1	0.1
			704	1.2	0.5
			495	1.5	0.4
			493	2.2	0.5
			494	1.1	0.5
			537	2.3	0.6
			539	2.8	1.3
			701	0.5	0.2
			685	4.1	0.3
			686	1.8	0.0
			687	3.4	0.4
			688	3.1	0.3
			689	3.4	0.7
			633	1.7	0.7
			630	13.2	11.0
			631	1.9	0.7
			619	3.3	1.6
			620	2.9	1.1
			621	2.7	1.2
			622	3.3	1.2
Tape Weaver--EZ			627	4.9	2.0
			616	7.2	3.1
			617	2.2	1.2
	483	0.2	484	1.8	0.6
	445	0.1	446	0.6	0.0
	572	0.6	573	4.1	2.9
	574	1.4	575	10.4	4.3
	725	0.2	726	0.4	0.4
	705	0	706	0.7	0.3
	653	0.8	645	1.0	0.2

Raybestos-Manhattan

Operation	Impinger		Membrane Filter		
	Sample #	mpcf	Sample #	Total Fibers/cc	10 u +
Weaving - Continued					
Tape Weaver--EZ Cont'd.	648	0.7	647	15.8	0.8
	649	0.5	650	7.8	0.2
Personal			683	10.2	0.8
			684	4.0	0.4
			642	4.8	0.3
			643	4.7	0.3
			644	4.0	0.2
			646	31.7	4.0
			640	—	—
Cup Winder--EZ	489	0.1	490	1.5	0.5
	582	0.3	583	0.8	0.4
	635	0.1	634	0.7	0.2
	611	0.2	612	1.4	1.0
Personal			700	0.6	0.2
			690	0.6	0.1
			702	0.8	0.3
			540	2.1	1.1
			638	2.0	0.0
			637	3.2	0.2
			632	1.9	1.1
Banner--EZ	84	0.1	83	2.2	0.0
	584	0.6	549	5.3	2.7
Personal			618	12.1	6.4
			641	5.8	0.6
			492	1.4	0.5
			491	6.5	3.2
			703	1.3	0.6

Raybestos-Manhattan

Operation	Empinner		Membrane Filter		
	Sample #	mppcf	Sample #	Fibers/cc Total 10 u +	
Weaving - Continued					
Quill Winder--BZ	560	0	561	0.0	0.0
	652	0.1	653	0.4	0.2
Inspector--BZ	719	0.1	720	0.4	0.2
Greeler Personal			628	1.3	0.6
Calender Op. Personal			538	2.1	1.0
Rope, Wick, Cord					
Former--BZ	321	0.3	322	12.3	0.8
Finishing					
Inspector--BZ Personal	665	0.0	664	1.0	0.4
			645	4.1	0.3
			656	0.9	0.1
			657	0.6	0.1
			629	0.9	0.5
Finishing Mach Op.--BZ Personal	666	0.1	667	0.8	0.4
			699	0.1	0.1
Yarn Coater--BZ	524	0.1	525	0.6	0.0
Dryer Op.--BZ Personal			660	1.0	0.0