



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION
National Institute for Occupational Safety & Health
550 Main Street Room 7017 FOB Cincinnati, Ohio 45202

January 4, 1972

Mr. Lawrence E. Moody
General Manager
H.K. Porter Company
Thermoid Division
Charlotte, North Carolina

Dear Mr. Moody:

Enclosed are the final results of the survey conducted in your plant in March, 1971. The results are listed by operation and job, our sample number and asbestos concentration of fibers per milliliter greater than 5 μ in length. An emergency temporary standard for asbestos dust took effect upon the publication in the Federal Register on December 7, 1971. The standard states: "The 8-hour time-weighted average airborne concentration of asbestos dust to which employees are exposed shall not exceed 5 fibers per milliliter greater than 5 microns in length, as determined by the membrane filter method at 400 - 450X magnification (4 millimeter objective) phase contrast illumination. Concentrations above 5 fibers per milliliter but, not to exceed 10 fibers per milliliter, may be permitted up to a total of 15 minutes in an hour for up to 5 hours in an 8-hour day."

Average exposures in the following jobs exceeded the average standard:

1. Blending
2. Fixing
3. Flywheeling
4. Stock packing and hauling
5. Card tending
6. Card fixing
7. Grinding
8. Stocking
9. Roving hauling
10. Ring spinning
11. Twisting

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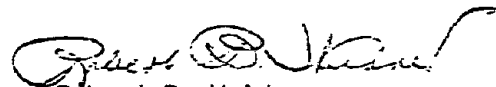
12. Weighing
13. Winding
14. Cloth weaving
15. Daffing

In addition, there were 53 samples which exceeded the 15 minute level of 10 fibers per milliliter in the above stated jobs. In the event the amosite operation is restarted, it should be noted that the average concentrations in these areas are well above the standard and these jobs should be checked for excessive exposures at that time. The remaining jobs do not appear to present any serious problems. Sampling times varied from about 30 minutes up to 2 hours. Less than 1% of the samples were collected for approximately 30 minutes, 8% for approximately 45 minutes, 22% for approximately 60 minutes, 65% for approximately 90 minutes, and 4% for approximately 120 minutes.

The results of the survey indicate that there were some definite problem areas associated with the operations and jobs mentioned above. In the event that conditions in the plant at the present time are similar to when the survey was conducted, it would appear that a serious and persistent health hazard probably exists. Corrective industrial hygiene practices are indicated in the areas where excessive concentrations were found.

If you have any questions, please feel free to contact me.

Very truly yours,



Robert B. Weidner
Acting Chief
Environmental Investigations Branch
Division of Field Studies and
Clinical Investigations

Enclosure

cc: Director, DFSCI
Acting Deputy Director, DFSCI
Regional Program Director, NIOSH, Region IV
North Carolina State Board of Health
Plant
Readers
Dictator's
Division
Central files (Cincinnati)
Region IV ✓

RESULTS OF U.S.P.H.S. SURVEY

H. K. PORTER COMPANY

CHARLOTTE NORTH CAROLINA

SURVEY DATE: MARCH 1971

<i>OPERATION and JOB</i>	<i>PERSONAL SAMPLES</i>	
	<i>SAMPLE #</i>	<i>CONCENTRATION FIBERS >5μ/cc</i>
<i>100 Fiber Preparation</i>		
Blender Operator	46	3.3
Blender Operator	49	5.7
Blender Operator	50	18.4
Blender Operator	175	7.3
Fixer	161	6.8
Fixer	165	4.6
Waste Machine Operator	176	120.3 ¹
Willow Operator (Amosite)	101	220.0 ¹
Flywheeler Operator	171	21.8
Stock Packer	47	12.9
Stock Packer	48	29.3
Stock Hauler	172	7.5
Forklift Operator	173	6.9
<i>110 Carding</i>		
Card Tender	36	5.0
Card Tender	37	9.8
Card Tender	38	6.9
Card Tender	39	29.4
Card Tender	44	13.4
Card Tender	45	14.6
Card Tender	53	9.8
Card Tender	61	47.1
Card Tender	149	13.8
Card Tender	150	38.1
Card Tender	151	9.9
Card Tender	153	18.9
Card Tender	154	7.7
Card Tender	156	35.0
Card Tender	158	35.1
Card Tender	159	15.4
Card Tender	162	6.1

H.K. Porter Company
 Charlotte North Carolina
 Survey Date: March 1971
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<i>OPERATION and JOB</i>		<i>PERSONAL SAMPLES</i>	
		<i>SAMPLE #</i>	<i>CONCENTRATION FIBERS >5μ/cc</i>
<i>110 Carding (continued)</i>			
Amosite Card Tender	119	48.5	
Amosite Card Tender	220	151.8 ¹	
Amosite Card Tender	225	44.6	
Fixer (Amosite Room)	120	72.8	
Card Fixer	40	34.7	
Card Fixer	54	15.3	
Card Fixer	55	4.5	
Card Fixer	155	18.9	
Grinder (Scratchman)	157	9.3	
Grinder (Scratchman)	41	8.3	
Stocker	70	68.0	
Stocker	152	2.7	
Roving Hauler	29	7.2	
<i>120 Spinning</i>			
Ring Spinner	1	12.8	
Ring Spinner	4	14.2	
Ring Spinner	5	5.0	
Ring Spinner	9	10.7	
Ring Spinner	10	6.6	
Ring Spinner	12	12.1	
Ring Spinner	13	9.3	
Ring Spinner	14	8.2	
Ring Spinner	15	5.6	
Ring Spinner	16	7.0	
Ring Spinner	17	7.9	
Ring Spinner	18	3.9	
Ring Spinner	19	12.2	
Ring Spinner	20	6.7	
Ring Spinner	22	4.8	
Ring Spinner	23	11.6	
Ring Spinner	25	11.5	
Ring Spinner	27	8.8	
Ring Spinner	28	6.7	
Ring Spinner	34	3.5	

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OPERATION and JOB	PERSONAL SAMPLES	
	SAMPLE #	CONCENTRATION FIBERS >5 μ /cc
120 Spinning (continued)		
Ring Spinner	35	5.1
Ring Spinner	43	7.2
Ring Spinner	97	6.9
Ring Spinner	123	5.4
Ring Spinner	128	5.0
Ring Spinner	129	7.9
Ring Spinner	130	7.6
Ring Spinner	131	2.1
Ring Spinner	132	6.2
Ring Spinner	133	5.6
Ring Spinner	134	4.7
Ring Spinner	139	16.0
Ring Spinner	140	6.1
Ring Spinner	142	9.4
Ring Spinner	144	3.9
Amosite Fixer (spinning)	224	28.9
Fixer	24	6.1
Fixer	221	0.4
Doffer	11	7.6
Doffer	21	1.0
Wegher Clerk	26	5.6
Maintenance (spinning)	3	3.0
130 Twisting		
Twister	30	7.6
Twister	31	8.7
Twister	32	12.1
Twister	33	14.2
Twister	121	8.7
Twister	122	6.6
Twister	124	11.9
Twister	126	13.2
Twister	127	9.3
Twister	135	20.5
Twister	136	4.6
Twister	137	10.0

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OPERATION and JOB		PERSONAL SAMPLES	
		SAMPLE #	CONCENTRATION FIBERS >5 μ /cc
130	<i>Twisting (continued)</i>		
	Twister	141	15.4
	Twister	143	21.5
	Twister	146	7.7
	Twister	147	16.3
	Weigh Clerk	138	7.4
	Doffer	76	3.8
	Doffer	125	5.8
140	<i>Winding</i>		
	Winder	2	13.9
	Winder	6	2.0
	Winder	7	0.7
	Winder	51	6.6
	Winder	69	10.6
	Winder	72	3.3
	Winder	73	14.5
	Winder	79	5.1
	Winder	81	3.6
	Winder	87	7.4
	Winder	88	4.7
	Winder	145	7.7
	Winder	148	18.5
	Winder	160	9.5
	Winder	192	4.2
	Winder	193	5.5
	Winder	195	5.8
	Winder	196	1.6
	Winder	197	2.0
	Winder	198	2.2
	Winder	205	6.7
	Yarn Hand	199	2.0
150	<i>Weaving</i>		
	Cloth Weaver	56	8.9
	Cloth Weaver	68	4.6
	Cloth Weaver	71	7.9
	Cloth Weaver	77	1.1
	Cloth Weaver	78	10.4
	Cloth Weaver	85	7.5
	Cloth Weaver	89	11.9

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<i>OPERATION and JOB</i>		<i>PERSONAL SAMPLES</i>	
		<i>SAMPLE #</i>	<i>CONCENTRATION FIBERS >5μ/cc</i>
150	<i>Weaving</i>		
	Cloth Weaver	91	9.7
	Cloth Weaver	92	4.5
	Cloth Weaver	93	9.3
	Cloth Weaver	94	0.2
	Cloth Weaver	95	5.1
	Cloth Weaver	96	6.3
	Cloth Weaver	168	4.4
	Cloth Weaver	169	18.1
	Cloth Weaver	170	2.4
	Cloth Weaver	183	5.2
	Cloth Weaver	184	8.1
	Cloth Weaver	186	4.9
	Cloth Weaver	188	5.9
	Cloth Weaver	189	13.3
	Cloth Weaver	190	1.9
	Tape Weaver	57	5.9
	Tape Weaver	63	3.0
	Tape Weaver	64	2.2
	Tape Weaver	66	4.0
	Tape Weaver	67	5.4
	Tape Weaver	112	2.1
	Tape Weaver	167	2.2
	Tape Weaver	179	1.6
	Tape Weaver	217	1.4
	Tape Weaver	218	2.8
	Amosite Weaver	118	124.3 ¹
	Creeler	52	7.6
	Creeler	62	0.9
	Creeler	65	2.6
	Creeler	74	5.1
	Creeler	75	2.5
	Creeler	84	4.1
	Creeler	166	1.4
	Creeler	182	3.5
	Creeler	202	12.4
	Creeler	203	7.2
	Creeler	204	1.8

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OPERATION and JOB	PERSONAL SAMPLES	
	SAMPLE #	CONCENTRATION FIBERS >5μ/cc
150 Weaving (continued)		
Warper	58	3.2
Warper	59	2.2
Warper	83	3.7
Warper	86	6.7
Warper	200	2.4
Warper	201	1.2
Doffer	90	12.7
Doffer	180	3.8
Doffer	187	6.8
Fixer	60	3.1
Fixer	181	2.8
Warper Serviceman	80	2.5
Warper Serviceman	194	4.5
160 Rope, Wick, Braid, Cord		
Rope Braider	163	4.6
Rope Braider	164	3.9
Braider	111	1.5
Braider	219	1.4
Tubing Twister Operator	117	3.4
170 Finishing		
Cloth Inspector	98	0.7
Cloth Inspector	102	2.2
Cloth Inspector	105	1.1
Cloth Inspector	107	1.5
Cloth Inspector	108	1.9
Cloth Inspector	109	0.1
Cloth Inspector	206	0.6
Cloth Inspector	207	2.1
Cloth Inspector	208	0.7
Cloth Inspector	209	2.5
Cloth Inspector	210	0.6
Cloth Inspector	211	1.7
Tape Inspector	99	1.7
Tape Inspector	106	2.0
Tape Inspector	178	3.8
Tape Inspector	191	2.5

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OPERATION and JOB	PERSONAL SAMPLES	
	SAMPLE #	CONCENTRATION FIBERS >5u/cc
170 <i>Finishing (continued)</i>		
Treater Operator	113	0.5
Treater Operator	114	0.6
Treater Operator	115	1.1
Treater Operator	116	1.5
Treater Operator	214	0.5
Treater Operator	215	1.2
Treater Operator	216	0.2
Packer	103	0.8
Packer	104	1.0
Packer	212	1.8
Shipping Clerk	100	0.4
180 <i>Miscellaneous</i>		
Vacuum Cleaner Operator	42	8.9
Forklift Operator	177	0.8
Janitor	185	4.5
Winding Foreman	82	3.6
Winding Foreman	110	0.7
Finishing Foreman	213	0.9

¹ *Filters too heavy with asbestos fibers to get an accurate count. Figures given are estimates.*

SUMMARY TABLE EXCLUDING AMOSITE OPERATION¹

H. K. PORTER

CHARLOTTE NORTH CAROLINA

SURVEY DATE: MARCH 1971

	<i>Operation (# Samples)</i>	<i>Concentrations fibers >5μ/cc</i>					
		<i>Low</i>	<i>High</i>	<i>Mean</i>	<i>% Conc. >2</i>	<i>% Conc. >5</i>	<i>% Conc. >10</i>
100	Fiber Preparation (12)	3.3	120.3	20.4	100.0	91.7	41.7
110	Carding (26)	2.7	68.0	18.7	100.0	92.3	53.8
120	Spinning (41)	0.4	16.0	7.1	95.1	80.5	17.1
130	Twisting (19)	3.8	21.5	10.8	100.0	89.4	47.3
140	Winding (22)	0.7	13.5	6.3	91.0	54.5	18.2
150	Weaving (57)	0.2	18.1	5.0	86.0	40.4	10.5
160	Rope, Wick, Braid, Cord (5)	1.4	4.6	3.5	60.0	0.0	0.0
170	Finishing (27)	0.1	3.8	1.3	21.0	0.0	0.0
180	Miscellaneous (6)	0.7	8.9	3.2	50.0	16.7	16.7

¹ *Amosite operation discontinued since survey was made.*

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15. Supplementary Notes NA				13. Type of Report & Period Covered Industry-wide Study
				14. NA
16. Abstract (Limit 200 words) Worker exposures to asbestos (1332214) were surveyed in March 1971 at H.K. Porter Company Thermoid Division, in Charlotte, North Carolina. Asbestos fiber concentrations in the fiber preparation, carding, spinning, twisting, winding, weaving, finishing, miscellaneous and rope, wick, braid and cord areas were 3.3 to 29.3, 2.7 to 151.8, 0.4 to 28.9, 3.8 to 21.5, 0.7 to 18.5, 0.2 to 124.3, 0.1 to 3.8, 0.7 to 8.9, and 1.4 to 4.6 fibers greater than 5 microns per cubic centimeter, respectively. The OSHA standard for an 8 hour time weighted average airborne concentration of asbestos dust is 5 fibers per milliliter greater than 5 microns in length; concentrations above 5 fibers but not exceeding 10 fibers per milliliter greater than 5 microns in length may be permitted for up to 15 minutes per hour for up to 5 hours in an 8 hour day. Average exposures in 15 jobs exceeded the 8 hour time weighted average standard and 53 samples exceeded the 15 minute standard. The author concludes that a serious asbestos health hazard exists and recommends corrective industrial practices.				
17. Document Analysis a. Descriptors Asbestos-dust, Dust-exposure, Dust-analysis, Health-survey, Air-sampling, Standards, Industrial-health, Industrial hygiene Field-Study, b. Identifiers/Open-Ended Terms c. COSATI Field/Group				
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