PLAINTIFF'S EXHIBIT

UC-4944

AIRBORNE ASBESTOS COUNTS

for

Kentile Floors, Inc.
Chicago, IL

Date Sampled: April 30,1980
Date Reported: May 9, 1980

Samples Collected By: F. L. Smith -Union Carbide Corporation
G. L. Dickson- " " "

Samples Analyzed By: F. L. Smith
Union Carbide Corporation

Reported By: F. L. Smith
Union Carbide Corporation

Union Carbide Corporation
Metals Division
Niagara Falls, New York

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SAMPLE EQUIPMENT AND TEST PROCEDURES

Sampling and dust counting were carried out in accordance with OSHA Regulation 1910.1001, based on NIOSH Analytical Method P&CAM 239 and OSHA methods; reference - Occupational Safety and Health Administration Methods, W. C. Dixon, pp 431, NBS special publication No. 506, U.S. Department of Commerce, November 1978.

Battery-powered air pumps (M.S.A. type), calibrated to 2 liters per minute, were used to collect personal breathing zone and environmental samples on Millipore membrane filters of 0.8 micron porosity.

Fiber counting was performed on a Nikon phase contrast microscope at 400X utilizing a Porton reticle for sizing and field definition.

Two results have been reported for each sample - they are:

1. Chrysotile Asbestos - Any fiber having an aspect ratio ≥3 and a length ≥5μ that is in the operator's judgement chrysotile. In the event of doubt and in the absence of further information, any fiber having the above physical dimensions will also be counted as chrysotile.

2. Possible Asbestos - Any fiber having an aspect ratio ≥3 and a length ≥5μ that is not obvious to be material other than asbestos. This includes all amphiboles and material similar in appearance.

COMMENTS

The OSHA regulations permit a maximum limit of 2 fibers greater than 5 microns in length per cubic centimeter of air sampled on an 8-hour, time-weighted average (TWA). The formula $\frac{C_1T_1 + C_2T_2 + C_nT_n}{\Sigma T}$ describes the TWA

where C = fiber count in fibers/cc and T = time.

The regulations also stipulate a ceiling concentration of 10 fibers/cc greater than 5 microns which is not to be exceeded at any time.

TEST RESULTS

The details of sample collection and resultant fiber counts are listed in the attached table(s).

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OBJECTIVE:

To monitor airborne asbestos concentrations at the subject company's production facilities during the use of "Calidria" SG-104. (Bulk)

OPERATION DESCRIPTION:

SG-104 is used in the production of a vinyl asbestos floor tile along with pigment, resin and scrap material. These dry ingredients are prepared by weighing the materials in portable batch containers which are then dumped into a Banbury mixer. The asbestos is carried to the scale location by means of a closed conveyor system that is timed to deliver the correct weight to the batch container.

Personal samples were obtained from the asbestos scale operator and the scrap scale operator on two production lines adjacent to each other (~30 ft.). The asbestos scale operator charges the batch container to the proper weight and then moves the container to the scrap scale. The scrap scale operator continues the charging with scrap material, pigments, etc., and moves it along the conveyor to the Banbury. These operations total approximately 2-3 minutes and are done on a continuous basis throughout the work day.

A negative exhaust is provided at both scale locations and all workers were observed to be wearing disposable filter masks. A large dust collector provides additional room ventilation. One worker is assigned to vacuum ~~split~~ spilled material and housekeeping around the lines is good.

REMARKS:

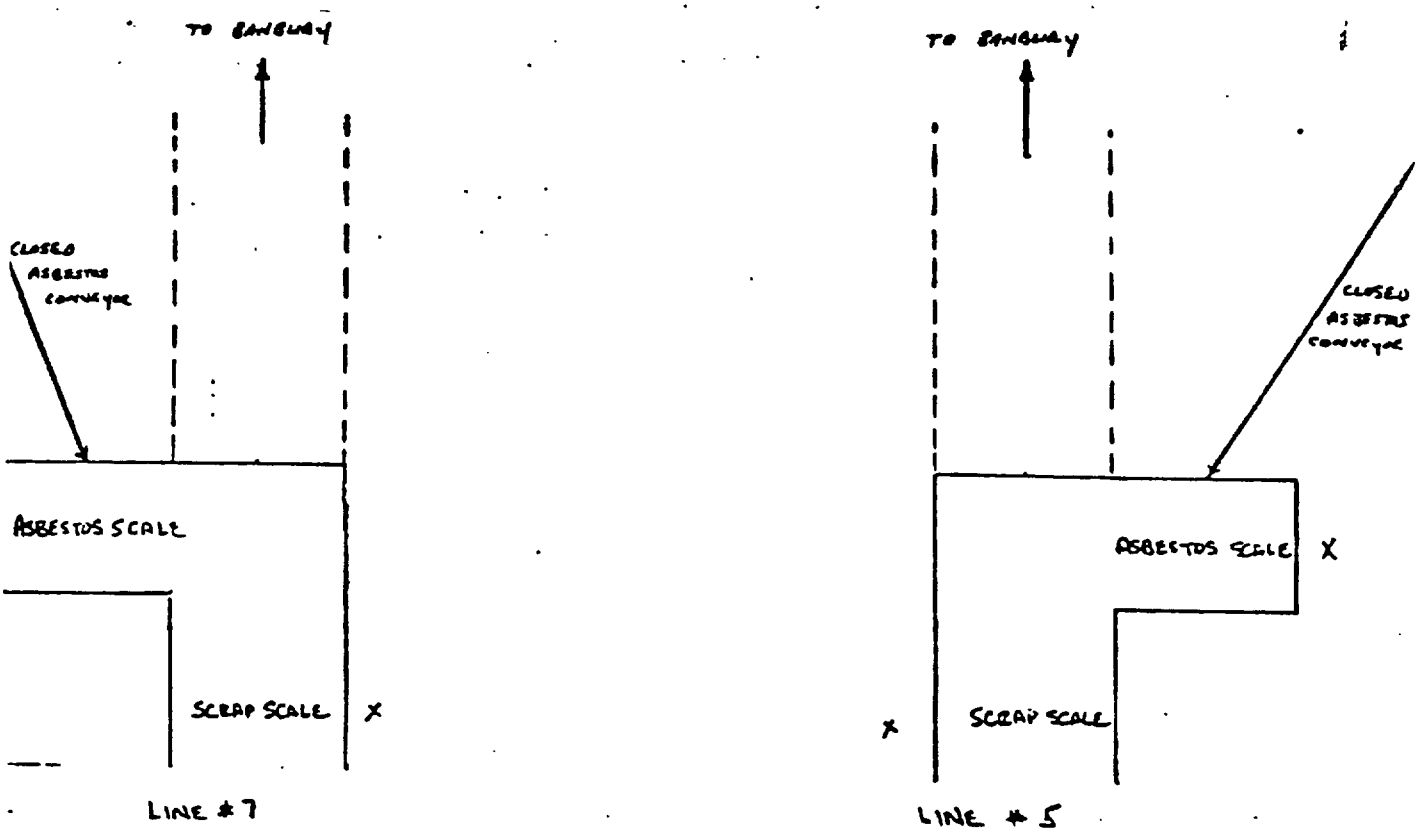
The data show exposure concentrations for the scrap scale operator on Line #7 to be significantly higher than the other personnel monitored. TWA values range from 0.4 - 0.5 for the other three operators while this operator exhibits a TWA value of 1.1 fibers/cc. These higher concentrations may be caused by the resulting air flow to the main dust collector. This ventilation pattern puts the scrap scale between the asbestos scale and the inlet of the main dust collector (see Figure 1). The downstream position of this location is considered to be a contributing factor in these higher exposure concentrations.

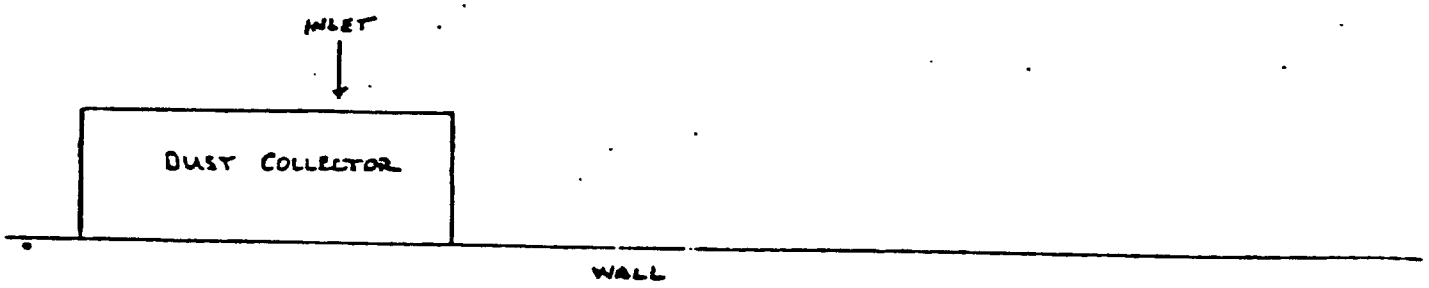
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Figure I

Production Line Floor Plan





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SUMMARY OF FIBER COUNTS

Sample No.	Air Sample Time	Minutes	Operation Description	Airborne Fiber Count (fibers/cc >5u); Crysotile Asbestos	Possible Amphibole Asbestos
A-17	9:23A-10:30A	67	Personal Sample - Asbestos weigh scale operator Line #5.	0.6	0.1
A-28	11:00A-11:23A 11:50A- 1:02P	95	Personal Sample - Asbestos weigh scale operator Line #5. Switches to scrap scale @ 11:50A.	0.5	0.1
R-16	1:03P- 1:29P 1:45P- 2:25P	66	Personal Sample - Asbestos weigh scale operator Line #5. Still performing scrap scale duties.	0.6	<0.1
	TWA Chrysotile = $\frac{128.324}{238}$ = 0.5		TWA Amphibole = $\frac{14.459}{238}$ = 0.1		
R-55	9:22A-10:30A 11:00A-11:10A	78	Personal Sample - Scrap scale operator Line #5.	0.6	0.1
A-26	11:11A- 1:00P	109	Personal Sample - Scrap scale operator Line #5. Switched to asbestos scale @ 11:50A.	0.5	<0.1
R-11	1:01P- 2:00P 2:10P- 2:35P	84	Personal Sample - Scrap scale operator Line #5. Still performing asbestos scale duties.	0.4	0.1
	TWA Chrysotile = $\frac{136.877}{271}$ = 0.5		TWA Amphibole = $\frac{16.241}{271}$ = 0.1		
R-75	9:18A-10:45A	87	Personal Sample - Asbestos weigh scale operator Line #7.	0.4	<0.1
R-72	11:06A- 1:06P	120	Same as R-75.	0.3	<0.1
A-36	1:07P- 1:46P 2:02P-2:30P	67	Same as R-75.	0.4	0.1
	TWA Chrysotile = $\frac{104.92}{274}$ = 0.4		TWA Amphibole = $\frac{10.729}{274}$ = <0.1		
A-18	9:19A-11:08A	109	Personal Sample - Scrap scale operator Line #7.	1.1	0.1
A-39	11:25A- 1:04P	99	Same as A-18. A23843	0.8	0.1
A-30	1:05P- 1:32P 1:49P- 2:30P	68	Same as A-18.	1.7	0.1
	TWA Chrysotile = $\frac{316.371}{276}$ = 1.1		TWA Amphibole = $\frac{30.249}{276}$ = 0.1		

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SUMMARY OF FIBER COUNTS

ıple lo.	Air Sample Time	Minutes	Operation Description	Airborne Fiber Coun (fibers/cc >5u) Chrysotile Asbestos	Possible Amphibole Asbestos
·66	9:33A - 11:54A	141	Personal Sample - Asbestos weigh scale operator Line #3.	0.8	0.0
·30	11:55A - 2:20P	145	Same as R-66	0.6	0.1
·49	2:21P - 3:15P	54	Same as R-66	0.4	0.1
	TWA Chrysotile = $\frac{223.738}{340}$ = 0.7		TWA Amphibole = $\frac{11.343}{340}$ = <0.1		
·71	9:38A - 11:53A	135	Personal Sample - Scrap scale operator Line #3.	0.2	<0.1
·45	11:54A - 2:09P	135	Same as R-71	0.2	<0.1
·22	2:10P - 3:15P	65	Same as R-71	0.2	0.1
	TWA Chrysotile = $\frac{60.34}{335}$ = 0.2		TWA Amphibole = $\frac{8.575}{335}$ = <0.1		
·70	9:45A - 11:58A	133	Personal Sample - Asbestos weigh scale operator Line #8.	1.2	0.1
·20	11:59A - 2:25P	146	Same as R-70	0.4	0.1
·29	2:26P - 3:15P	49	Same as R-70	0.8	0.2
	TWA Chrysotile = $\frac{260.22}{328}$ = 0.8		TWA Amphibole = $\frac{38.583}{328}$ = 0.1		
·74	9:46A - 11:57A	131	Personal Sample - Scrap scale operator Line #8.	0.3	<0.1
·50	11:58A - 2:11P	133	Same as R-74	0.1	<0.1
·33	2:12P - 3:15P	63	Same as R-74	0.4	0.1
	TWA Chrysotile = $\frac{74.8}{327}$ = 0.2		TWA Amphibole = $\frac{16.199}{327}$ = <0.1		

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