

AIRBORNE DUST COUNTS

for

Conwed Corporation
Cloquet, Minnesota

August 28, 1972

Personnel Present: E. J. Kleber
Customer Service Representative
Union Carbide Corporation

T. P. Norris
Midwest Region Sales Manager
Union Carbide Corporation

E. McGuillvary
Environmental Control
Conwed Corporation

UNION CARBIDE CORPORATION
Mining and Metals Division
Niagara Falls, New York

X410505

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The results of microscope counts for air samples collected at Conwed Corporation, Cloquet, Minnesota, August 9th and 10th, 1972 are attached.

Apparatus & Procedure

Sampling and dust counting were carried out in accordance with OSHA Regulation 1910.93a.

Unico Personal Air Samplers, 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 Leitz microscope utilizing phase contrast illumination at 400X and a Patterson Globe and Circle reticle.

Total dust was determined by light field microscopy at 100X.

Test Results

Three figures have been reported for each sample. They are:

1) Total Fiber - Any material 5 microns or longer having an aspect ratio of 3 or greater. Reported as fibers per milliliter.

2) Asbestos Fiber - Any material, 5 microns or longer, having an aspect ratio of 3 or greater, which in the judgement of the operator could possibly be asbestos. Reported as fibers per milliliter.

3) Total Dust - Any fiber or particle present. Reported as million particles per cubic foot.

Enclosed for reference is a copy of the OSHA Standard for exposure to asbestos dust, which includes silica and inert dust limits.

X410506

SUMMARY OF DUST COUNTS

N.B. No.	Description	Asbestos Fiber Count Fibers/ml > 5μ	Total Fiber Count Fibers/ml > 5μ	Total Dust mmppcf
	BOARD & PULP MILL			
1929-2-1	Personal (7.67 min.) - Bulk fiber bagger - operator	0	0	0.16
1929-2-2	Environmental (114 min.) - No. 3 board machine run-out section- 4' from end of conveyor dumping mineral wool into stock chest	0.15	1.01	0.55
1929-2-3	Environmental (132 min.) - Mineral slurry hydropulper tub - eye level above tub 2 bags asbestos dumped every 20 minutes (HP Pellets)	0.19	1.40	1.02
1929-2-4	Personal (2.08 min.) - Same as #3, during dumping	1.03	2.06	0.85
	COATING MAKE-UP AREA			
1929-2-5	Environmental (145 min.) - Coating make-up deck between #35 mix tank and separan tank	0	0	2.85
1929-2-6	Personal (9.33 min.) - Coating make-up deck on coating make-up man as batch of #31 coating is prepared	0	0	31.38
	FINISHING DEPARTMENT			
1929-2-7	Environmental (43 min.) - No. 3 trimmer - operator's desk	0.20	0.40	1.09
1929-2-8	Environmental (46 min.) - No. 4 trimmer - 9' off floor on catwalk by 2nd arbor	0.28	1.68	0.58
1929-2-9	Environmental (115 min.) - Between #1 and #3 board dryers - by W. broke hydropulper 6' off floor	0.15	0.60	0.53
1292-2-10	Environmental (194 min.) - No. 3 dry end coating line - slitter area - south side - 6' off floor	0.09	0.64	0.51
1292-2-11	Environmental (138 min.) - No. 3 dry end coating line - station B. East grading station - 6' off floor	0.16	0.50	0.43
	TUFFLEX DEPARTMENT			
1929-2-12	Environmental (75 min.) - No. 2 Tufflex line - shredder area eye level mount between cotton linter feeder and E. Shredder [10 min. blow-down with 3 air hoses during sampling]	0	0.17	1.20

X410507

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BANK OF CALIF. N.A.
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8/15/72

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40 pt - $
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W. CT 1027

X410509

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N.B. No.	Description	Asbestos Fiber Count Fibers/ml > 5μ	Total Fiber Count Fibers/ml > 5μ	Total Dust mmpcf
1929-2-13	Personal (9.75 min.) - No. 2 Tufflex machine - transfer section on backtender's helper	0.88	1.76	2.68
	CONWED FABRICS DEPARTMENT			
1929-2-14	Personal (7.0 min.) - Conwed Farbics fiber preparation room - operator feeding cotton linters into P&S feeders	0	5.51	2.35
	LO-TONE DEPARTMENT			
1929-2-15	Environmental (104 min.) - Lo-Tone #4 - line grinder area 6' off floor	0.16	1.44	0.76

X410510

Count Sheet

Sample #	20	48	13	3	27	23		3
time								
flow								
1	463	19	511	187	1746	520	400	270
2	574	6	680	247	2034	360	210	282
3	673	9	703	141	2073	380	351	470
4	525	9	601	183	2141			
5	472	11	578	184	2027			
6		15		141				
7		11		193				
8		8		180				
9		8		143				
10		7		190				
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
						1260	1314	
TOTAL	2707	85	3073	178.9	10,021	~~1260~~	320	1022
AVG	541.4	8.5	614.6	178.9	2004.2	420	463	340.67
Field area	.0998							
Filter area	855							
Volume	6.1044	.4502	4.403	.5723	.5476	6.75	252	6.6918
Concentration	0.76	0.16	1.20	2.68	31.38	0.53	1.49	0.55

Filter cut × Filter area / Field area × Sample vol. ml

X 4 10 5 12

X410513

CONWED CORP
DUST SAMPLING 8/9+10/72
By UNION CARBIDE'S EOKLEBER
TOM NORRIS
(CONWED - EDMT)

No.	Filter No.	Type	Description
1	✓ 48	P.S.	Bulk Fiber Bagger - operator
Board & Pulp Mill			
2	✓ 3	E.S.	No. 3 Board Mach. Run out Section (4' from end of Conveyor dumping mineral wool into stock chest)
3	✓ 26	E.S.	Mineral Slurry Hydropulper Tub (Eye level above Tub)
4	/ 35	P.S.	Slurry Hydropulper operator (same as 26 above)
COATING MAKE UP			
5	✓ 14	E.S.	Coating Make-up deck - Between #35 mix tank and Separan tank
6	/ 27	P.S.	Coating Make-Up deck - on Coating make-up man as batch of #31 Ctng is prepared.
Finishing DEPT			
7	/ 8	E.S.	No. 3 Trimmer Operators desk
8	✓ 43	E.S.	No. 4 " - 9' off floor on catwalk by 2nd Arbor
9	/ 23	E.S.	Between #1+3 Board Dryers by W. Beck Hydropulper - 6' off floor
10	/ 17	E.S.	No. 3 Dry end Coating line - Slitter Area - South Side - 6' off floor
11	— 21	E.S.	No. 3 Dry end Coating line - Station B E. grading station 6' off floor

XA10514

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No.	Filter No.	Type	Description
Turftex Dept			
12	13	E.S.	No. 2 Turftex line - Shredder Area eye level mount between Cotton linter feeder & E. Shredder C10 min. blowdown with 3 air hoses during sampling
13	31	P.S.	No. 2 Turftex Mach. - Transfer section on backtender helper's belt
Conwed Fabrics Dept			
14	28	P.S.	Conwed Fabrics Fiber Prep. room operator feeding Cotton linters into P & S feeders
Co-Tone Dept			
15	20	E.S.	Co-Tone # 4 Line Grinder Area 6' off floor

X410515

COUNT SHEET

	21	21	21	13	13	13
Sample #	F10	DUST	ASB	F10	DUST	ASB
Time	138	138	138	75	75	75
Flow	2 l/m					
1	0	223	0	0	141	0
2	0	152	0	0	221	0
3	2	159	1	1	289	0
4	0	178	0	0	195	0
5	0	226	0	0	173	0
6	0	263	0	0	126	0
7	0	159	0	0	223	0
8	1	121	1	0	156	0
9	0	173	0	0	237	0
10	2	103	0	0	146	0
11	0		0	0		0
12	0		0	0		0
13	1		0	0		0
14	0		0	0		0
15	1		1	0		0
16	1		0	1		0
17	1		0	0		0
18	0		0	0		0
19	3		1	1		0
20	4		0	0		0
TOTAL	16	1757	5	3	1947	0
AVG	.8	175.7	.25	.15	194.7	0
Field Area	.006	.1067	.006	.006	.1067	.006
Filter Area	855					
Volume	276 l	276 l	276 l	150 l	150 l	150 l
		9.74 ft³			5.295 ft³	
Concentration	.413	.145	.077	.1425	.294	0

Fiber Cnt x Filter Area / Field Area x Sample Vol

X410516

COUNT SHEET

Sample #	26	17	28	①	35	84	99	89
time								
flow								
1	~~264~~ 891	618	98	78	81	180	7	194
2	891	642	71	72	39	120	63	151
3	1061	663	88	108	71	108	30	133
4	823	742	102	84	48	103	6	87
5	921	736	74		97	133	9	118
6			130					
7			121	35				
8			86					
9			77	3				
10			73	14				
11				4				
12				11				
13								
14				8				
15								
16								
17								
18								
19								
20								
TOTAL	4599	3401	1124		336	649	115	683
AVG	919.8	680.2	112.4		67.2	128.8	23	136.6
FIELD AREA								
FILTER AREA								
VOLUME			.411	.8				
CONCENTRATION	1.02							
					653	5.45	1.68	1.28
FIBER CNT × FILTER AREA / FIELD AREA × SAMPLE VOL. ml								

XA 0517

CONWED CORP
DUST SAMPLING 8/9+10/72
By UNION CARBIDE'S EDKLEBER
TOM NORRIS
(CONWED - EDMTG)

No.	Filter No.	Type	Description
1	48	P.S.	Bulk Fiber Bagger - operator
Board & Pulp Mill			
2	3	E.S.	No. 3 Board Mach. Run out Section (4' from end of Conveyor dumping mineral wool into stock chest)
3	26	E.S.	Mineral Slurry Hydropulper Tub (Eye level above Tub)
4	35	P.S.	Slurry Hydropulper operator (same as 26 above)
COATING MAKE UP			
5	14	E.S.	Coating Make-up dock - Between #35 mix tank and Separan tank
6	27	P.S.	Coating Make-Up dock - on Coating make-up man as batch of #31 Ctng is prepared.
Finishing DEPT			
7	8	E.S.	No. 3 Trimmer Operators desk
8	43	E.S.	No. 4 " - 9' off floor on catwalk by 2nd Arbor
9	23	E.S.	Between #1+3 Board Dryers by W. Biele Hydropulper - 6' off floor
10	17	E.S.	No. 3 Dry end Coating line - Slitter Area - South Side - 6' off floor
11	21	E.S.	No. 3 Dry end Coating line - Station B E. grading station 6' off floor

X410518

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No.	Filter No.	Type	Description
Tufflex Dept			
12	13	E.S.	No. 2 Tufflex line - Shredder Drop eye level mount between Cotton linter feeder & E. Shredder (10 min. blowdown with 3 air hoses during sampling
13	31	P.S.	No. 2 Tufflex Mach. - Transfer section on backtender helper's belt
Conwed Fabrics Dept			
14	28	P.S.	Conwed Fabrics Fiber Proj. room operator feeding Cotton linters into P & S feeders
Co-Tone Dept			
15-	20	E.S.	Co-Tone # 4 Line Grinder Area 6' off floor

X410519

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COUNT SHEET

	10	2	9	7	3	14		
Sample #	17	3	23	8	26	28		1
time								
FLOW								
			141					
1	712	293	~~160~~	181	652	191		225
2	809	279	221	217	714	103		118
3	783	297	173	148	710	183		218
4	773	174	209	173	564	138		
5	831	236	164	203	708	154		
6		299	253	144		114		
7		283	184	208		116		
8		325	191	187		188		
9		294	149	238		153		
10		360	178	163		129		
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
TOTAL	3908	2842	1863	1862	3348	1470		
AVG	781.6	284.2	186.3	186.2	669.6	147.0		197
FIELD AREA	855	855	855	855	855	855		
FILTER AREA	.0654	→	→	→	→	→		
VOLUME	11.3878	6.69	6.75	2.52	7.75	0.4109		
CONCENTRATION	0.89	0.55	0.36	0.96	1.13	4.67		

FIBER CNT X FILTER AREA
FIELD AREA X SAMPLE VOL. ml

X410520

Calidria ASBESTOS

UNION CARBIDE CORPORATION • MINING & METALS DIVISION • P.O. BOX 579 • NIAGARA FALLS, N.Y. 14302 • TEL: 716-285-3311

UNION CARBIDE
THE DISCOVERY COMPANY

RECEIVED
SEP 25 19[illegible]
UCC-CALIDRIA
[illegible], N.Y.

September 1, 1972

Conwed Corporation
Cloquet, Minnesota 55720

Dear Sir:

We would like to have your permission to use the information obtained in the course of the tests conducted at your facility and to furnish it to other parties without identifying your facility as the location at which measurements were taken. The tests shall consist of taking measurements by the membrane filter method of airborne asbestos fiber generated in the course of one or more phases of your manufacturing operations.

If you agree to the foregoing, please so indicate by signing and returning the enclosed copy of this letter. Such action on your part shall constitute authorization to take such measurements at your facility and to use and disclose said information as detailed in this letter.

Very truly yours,

E. J. Kleber
Customer Service Representative

Accepted and Agreed to

this 20 day of

September, 1972

Director of Manufacturing-Cloquet

X410511

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