



DOW CHEMICAL U.S.A.

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TEXAS DIVISION
FREEPORT, TEXAS 77541

PLAINTIFF'S EXHIBIT

DOW-651

ENVIRONMENTAL HEALTH REPORT

AIRBORNE ASBESTOS SURVEY
PERSONNEL MONITORING
CHLOR-ALKALI, A-108

FILE NO. A1-822

DATE February 19, 1976

AUTHOR H. N. Edwards

CHECKED R. L. Daniel

DATE Feb. 20, 1976

Summary

Sixty workmen within the Chlor-Alkali area were monitored for potential exposure to airborne asbestos. No workman exceeded the present or proposed levels for a Time Weighted Average (TWA), but five workmen have a potential for exceeding the proposed peak values.

It is recommended that peak level evaluations be made during the year.

It is also recommended that your present personnel protective procedures be continued.

It is further recommended that each workman be informed of the results of this survey, the hazards of overexposure to asbestos, and re-informed on the proper methods of control. This informing should be documented.

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AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

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INTRODUCTION

The Occupational Safety and Health Act (OSHA) requires that occupational exposures to airborne asbestos be controlled so that no worker is exposed to more than 5.0 asbestos fiber per cubic centimeter of air based on a count of fibers greater than 5 micrometers in length. These are determined by a Time-Weighted Average (TWA) exposure for an eight hour work day, and no peak concentrations of asbestos more than 10.0 fibers per cubic centimeter as determined by a minimum sampling time of 15 minutes.

In July, 1976, the limit will be lowered to 2.0 fibers per cubic centimeter.

It is now proposed to lower the limit to 0.5 fibers per cubic centimeter with a peak of 5.0 fibers.

This survey was conducted at Chlor Alkali I to evaluate the worker exposures by personnel monitoring. The tests were taken from November 4, 1975 - December 16, 1975.

METHODOLOGY

Airborne samples were collected using a Bendix Permissible air sampling pump (Bendix Corp., Baltimore, Md.). The fibers were collected by pulling air through a Millipore filter (AAWG 03700) mounted in an open face Millipore disposable cassette. Flow rates for the pumps were calibrated at 1500 cubic centimeters per minute and sampling times were two hours or greater (Table I). All samples were collected by Wayne King of Chlor-Alkali I.

Samples were analyzed by Lee Martin of Central Laboratory using the following technique:

Four marked squares are cut from a filter about halfway from the edge to the center. This section is then placed on a drop of clearing solution¹ and placed on a microscope slide. The sample is covered with a cover slip and allowed to clear (about 15 min.). The sample count is made on a Reichert Zetopan Optical microscope using Normaraki interference contrast at 500 magnification. Counts are made for particles greater than 5.0 microns, and reported as fibers per filter square.

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Clearing solution: 0.1 g/ml clean Millipore filter paper in 1:1 diethyloxalate: dimethylphthalate.

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RESULTS

Results of the airborne sample analyses are shown in Table I. All levels are below the new proposed standards.

DISCUSSION

Samples collected during these dates show no levels above the 0.5 fiber, new recommended standard, although several of these workmen do show a potential for overexposure, by possibly exceeding the peak of 5.0 fibers/cc.

If a workman did receive all of the sample that is shown in Table I, in a 15 minute period, and then no other exposure for the rest of the day, then those whose levels are 0.156 (Table I) and above, would be over the 5.0 peak level. Five workmen would exceed this new limit.

CONCLUSIONS

Since an asbestos dust respirator is required by the workman handling the dry asbestos, no workman is likely to be over-exposed even to the new standard.

RECOMMENDATIONS

1. It is recommended that peak level evaluations be made during the year.
2. It is also recommended that your present personnel protective procedures be continued.
3. It is further recommended that each workman be informed of the results of this survey, the hazards of overexposure, and they be reformed of the proper methods of control. This informing should be documented.

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TABLE I
ASBESTOS ANALYSES
CHLOR-ALKALI I
FIBERS/CC

NAME	MASTER NO.	DATE	JOB CLASSIFICATION	SAMPLE TIME-MIN.	WORK AREA	FIBERS/CC >5.0 μ m
D. E. Billings	132154	11-4-75	Production Supt.	120	Office	0.006
D. R. Reichel	132251	12-4-75	Asst. Product. Supt.	210	Office	0.002
A. M. Davila	302093	11-5-75	Sr. Prod. Engr.	150	Power Area	0.002
H. M. Moore	134802	12-3-75	Production Engr.	240	Office	0.001
Bill Winkler	134126	11-3-75	Engineer	480	Office	0.001
E. C. Kotis	136016	12-10-75	Engineer	210	Cell Area	0.021
Z. A. Webb	122998	11-5-75	Production Foreman	150	CA 1	0.003
S. A. Dupont	111551	11-4-75	Production Foreman	510	Cell Area	0.008
R. W. Schroeder	135675	12-8-75	Production Foreman	420	Maint. Shop	0.001
B. L. Neel	134265	12-4-75	Rot. Shift Foreman	210	Control Room	0.021
C. L. Rabon	116103	12-4-75	Rot. Shift Foreman	210	Control Room	0.009
J. W. Woodall, Jr.	115089	12-13-75	Rot. Shift Foreman	450	C.A. 1	0.018
D. E. Ballard	134422	11-25-75	Parts Technician	240	Parts Room	0.001
R. A. Rudy	133664	11-5-75	Instr. Technician	150	CA 1	0.021
W. C. Gernand	136593	12-11-75	Instr. Processman	210	Instr. Shop	0.002
J. D. Todd	137824	11-14-75	Instr. Processman	180	CA 1	0.008
Paul Williams	139129	11-25-75	Instrumentation	210	CA 1	0.006
W. King	136162	11-21-75	Lab Technician	420	Lab	0.010
J. F. Blakenship	132515	12-10-75	Lab Technician	210	Lab	0.022
J. S. Maples	116260	11-4-75	Production Clerk	330	Office	0.000
O. L. Wise	111013	12-3-75	Boilermaker Crewleader	210	Maint. Shop	0.006
L. R. Scheffer	113871	12-3-75	Boilermaker	210	Maint. Shop	0.018
W. Kristof	106299	11-13-75	Electrician	150	Maint. Shop	0.126
C. R. Phelps	134894	11-13-75	Electrician	180	Maint. Shop	0.018
J. L. Gill	132863	11-19-75	Machinist	180	Maint. Shop	0.102
A. G. Ransom	133177	11-20-75	Machinist	210	Maint. Shop	0.211
R. E. Mickens	135686	12-12-75	Machinist Trainee	210	Maint. Shop	0.008
B. E. Rougers	132921	11-13-75	Machinist Trainee	180	Maint. Shop	0.061
P. Holler	136725	11-20-75	Machinist Trainee	210	Maint. Shop	0.030

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TABLE I
(Continued)
ASBESTOS ANALYSES

NAME	MASTER NO.	DATE	JOB CLASSIFICATION	SAMPLE TIME-MIN.	WORK AREA	FIBERS/CC >5.0 μ M
O. D. Stine	115936	12-10-75	Painter	180	Maint. Shop	0.062
J. B. Lamar	109955	11-21-75	Pipefitter Crewleader	240	Maint. Shop	0.102
W. L. Jones	132590	11-19-75	Pipefitter	220	Maint. Shop	0.006
R. Lara	134894	11-14-75	Pipefitter	180	Maint. Shop	0.006
L. Sims, Jr.	132717	11-14-75	Pipefitter	180	Maint. Shop	0.018
S. Tims	134953	12-11-75	Pipefitter	180	Maint. Shop	0.127
J. E. Wartelle	131863	11-14-75	Pipefitter Trainee	180	Maint. Shop	0.031
P. D. Broussard	132495	11-12-75	Control Op. A	240	Control Room	0.010
A. L. Carr	108758	11-25-75	Control Op. A	240	Control Room	0.003
C. L. Leverich, Jr.	132293	11-20-75	Control Op. A	240	Control Room	0.008
P. E. Manning	118737	12-2-75	Control Op. A.	240	Control Room	0.016
R. L. Barnhart	134674	12-12-75	Control Op. B	315	Liquefaction	0.009
E. R. Brigrance	135737	11-20-75	Control Op. B	270	Power Area	0.009
D. L. Collins	135300	11-12-75	Control Op. B	180	Cell Area	0.462
J. N. Matt	132743	11-21-75	Control Op. B	210	Liquefaction	0.006
L. E. Williams	112977	12-2-75	Control Op. B	240	Liquefaction	0.008
W. J. Williams	135572	11-13-75	Control Op. B.	180	Maint. Shop	0.002
R. B. Windsor	133162	11-12-75	Control Op. B	180	Caustic Area	0.013
F. A. Boren	116972	12-16-75	Control Op. C	330	Power Area	0.061
E. W. McCann	133163	11-12-75	Control Op. C	180	Power Area	0.008
A. Walker, Jr.	134752	12-14-75	Control Op. C	420	Power Area	0.008
M. E. Decas	117937	11-20-75	Class 1 Op.	180	Cell Area	0.413
T. H. Enderbee	135555	11-20-75	Class 1 Op.	240	Cell Area	0.202
R. M. Gayle	133989	11-20-75	Class 1 Op.	180	Cell Area	0.061
T. C. Lee	138472	11-19-75	Class 1 Op.	180	Cell Area	0.311
S. A. McCann	137551	12-11-75	Class 1 Op.	180	Cell Area	0.106
C. A. Owens	131742	11-25-75	Class 1 Op.	240	Cell Area	0.055
R. W. Stayton	138293	12-2-75	Class 1 Op.	240	Cell Area	0.489
F. A. Corona	139124	12-13-75	Class 2 Op.	510	Loading Rack	0.008
J. G. Gonzales	137523	11-19-75	Class 2 Op.	210	Loading Rack	0.016
K. P. Lassiter	136611	12-12-75	Class 2 Op.	480	Loading Rack	0.009

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