DOW CHEMICAL U.S.A.

50883

TEXAS DIVISION
FREEPORT, TEXAS 77541

ENVIRONMENTAL HEALTH REPORT

AIRBORNE ASBESTOS SURVEY
PERSONNEL MONITORING
CHLOR ALKALI I
BUILDING A-108

FILE NO. Al-1418
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AUTHOR H. N. Edwards
CHECKED R. L. Daniel
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Summary

Sixty seven employees within the Chlor-Alkali area were monitored for potential exposure to airborne asbestos. No employee exceeded the present or proposed levels for a time-weighted average (TWA), but four employees have a potential for exceeding the proposed peak values.

It is recommended that your present personal protective procedures be continued. It is also recommended that each employee be informed of the results of this survey, the hazards of overexposure, and they be reinformed of the proper methods of control. This informing should be documented.

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bbs

Distribution
D. E. Billings A-108
W. H. Caines OCD
R. E. Flake B-101
W. King A-108
O. F. Schumm B-101
D. A. Van Westenburg A-1201
File

(2) R. R. Langner 1803 Midland
Marlene Swank 1803 Midland
Donna J. Roberts 2020 Midland
* F. D. Axe - Pittsburg
* C. E. Halphen - Plaquemine
* J. B. Kaye - Strongsville
* Neil Murray Sarnia
* R. D. Olson - 607 Midland
* C. H. VanMetre - OCD

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 2.0 asbestos fibers 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.

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 employee exposures by personnel monitoring. The tests were taken from November, 1977 through January, 1978.

METHODOLOGY

Airborne samples were collected using a Bendix Micronair 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 are shown in Table I.

All samples were collected by Wayne King of Chlor-Alkali I and analyzed by A. Herron 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 solution[1] and placed on a microscope slide. The sample is covered with a cover slip and allowed to clear (about 15 minutes). 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.

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

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 employees do show a potential for overexposure, by possibly exceeding the peak of 5.0 fibers/cc.

If an employee 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. Four employees would exceed this new limit.

CONCLUSIONS

Since an asbestos dust respirator is required by employees handling asbestos, no employee is likely to be overexposed to even the new standard.

RECOMMENDATIONS

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

2. It is also recommended that each employee be informed of the results of this survey, the hazards of overexposure, and they be reinformed of the proper methods of control. This informing should be documented.

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TABLE I

AIRBORNE ASBESTOS MONITORING
CHLOR-ALKALI I
FIBERS/CC >5.0 uM

NAME	MASTER NO.	JOB CLASSIFICATION	DATE	TIME (MIN.)	RESULTS FIBERS/CC
D. E. Billings	132154	Production Supt.	1-20-78	180	< 0.1
W. E. Noack	131993	Manufacturing Supv.	1-16-78	240	< 0.1
. D. Earls	113794	Sr. Res. Chemist	1-18-78	240	< 0.1
J. C. Myers	101970	Prod. Rep.	1-18-78	240	< 0.1
D. L. Rasco	136024	Sr. Prod. Engineer	12-30-77	240	< 0.1
E. Winkler	134126	Sr. Prod. Engineer	1-13-78	240	< 0.1
. E. Rademacher	506930	Res. Engineer	12-30-77	240	< 0.1
R. A. Boyd	139547	Engineer	1-16-78	240	< 0.1
F. C. Ybarra, Jr.	139852	Engineer	11-28-77	240	< 0.1
L. A. Schultz	118926	Foreman	12-20-77	240	< 0.1
S. A. Dupont	111551	Foreman	1-13-78	240	< 0.1
O. L. Bellar	131083	Rot. Shift Foreman	1-29-78	150	< 0.1
R. L. Benn	111014	Rot. Shift Foreman	1-6-78	180	< 0.1
W. B. Jacobs	138519	Rot. Shift Foreman	12-5-77	210	< 0.1
C.L. Rabon	116103	Rot. Shift Foreman	12-1-77	360	< 0.1
G. F. Tate	113848	Rot. Shift Foreman	1-8-78	240	< 0.1
W. C. Gernand	136593	Instr. Technician	1-13-78	240	< 0.1
J. D. Todd	137824	Instr. Technician	12-23-77	210	< 0.1
D. Mendoza	136845	Instr. Technician	1-8-78	180	< 0.1
H. Montes	136364	Instr. Trainee	1-18-78	240	< 0.1
W. King	136162	Lab. Technician	12-5-77	240	< 0.1
J. Blankenship	132515	Technician	12-23-77	240	< 0.1
. S. Maples	116260	Prod. Clerk	1-13-78	240	< 0.1
H. H. Maresh, Jr.	137282	Equipment Clerk	1-4-78	240	< 0.1
L. R. Scheffer	113871	Boilermaker	1-6-78	240	< 0.1
G. D. Bull	136696	Welder	12-29-77	360	< 0.1
W. Kristof	106299	Electrician	12-28-77	330	< 0.1
C. R. Phelps	113649	Electrician	12-28-77	330	< 0.1
L. New	136264	Machinist	1-11-78	240	< 0.1
J. L. Gill	132863	Machinist	1-4-78	240	< 0.1
O. D. Stine	115936	Machinist	1-19-78	180	< 0.1
L. Hall	118775	Machinist	1-11-78	240	< 0.1
K. J. Lewis	110043	CrewLeader-Pipefitter	12-29-77	360	< 0.1
W. L. Jones	132590	Pipefitter	1-11-78	150	0.2
L. Sims, Jr.	132717	Pipefitter	1-6-78	240	< 0.1
S. Tims	134953	Pipefitter	12-22-77	300	< 0.1
D. Dickey	13[illegible]68	Pipefitter	1-11-78	240	< 0.1
C. D. Cook	1[illegible]95	Pipefitter	1-4-78	240	< 0.1

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TABLE I (continued)

NAME	MASTER NO.	JOB CLASSIFICATION	DATE	TIME (MIN.)	RESULTS FIBERS/CC
L. E. Laplant	117055	Welder	12-29-77	360	< 0.1
S. D. Brigance	136859	Control Operator A	12-9-77	240	< 0.1
A. L. Carr	108758	Control Operator A	1-20-78	240	< 0.1
M. E. Decas	117937	Control Operator A	1-19-78	150	< 0.1
C. L. Leverich, Jr.	132293	Control Operator A	12-1-77	360	< 0.1
H. A. Reid	132621	Control Operator A	12-5-77	180	< 0.1
R. L. Barnhart	134674	Control Operator B	12-1-77	300	< 0.1
J. E. Bryan	138658	Control Operator B	12-9-77	240	< 0.1
P. A. Corona	139124	Control Operator B	11-29-77	180	< 0.1
T. C. Lee	138472	Control Operator B	1-18-78	240	< 0.1
J. N. Matt	132743	Control Operator B	12-9-77	360	< 0.1
S. A. McCann	137551	Control Operator B	1-19-78	150	< 0.1
F. S. Reid	140144	Control Operator B	1-16-78	180	< 0.1
F. A. Boren	116972	Control Operator C	12-9-77	360	< 0.1
E. W. McCann	133163	Control Operator C	12-5-77	270	< 0.1
T. D. Rowland	137427	Control Operator C	1-16-78	180	< 0.1
E. E. Taylor	138418	Control Operator C	11-29-77	180	< 0.1
D. H. Alsobrook	139701	Class 1 Operator	11-29-77	180	< 0.1
D. K. Fountain	138528	Class 1 Operator	1-20-78	120	< 0.1
K. P. Lassiter	136611	Class 1 Operator	1-19-78	120	< 0.1
R. D. Leggett	140219	Class 1 Operator	11-28-77	120	< 0.1
J. G. Gonzales	137523	Class 1 Operator	1-11-78	180	< 0.1
C. A. Owens	131742	Class 1 Operator	1-8-78	240	< 0.1
A. Walker, Jr.	134752	Class 1 Operator	1-19-78	120	< 0.1
R. M. Gayle	133989	Class 1 Operator	1-19-78	120	< 0.1
J. R. Peveto	140365	Class 2 Operator	1-19-78	180	0.2
S. G. Riner	140358	Class 2 Operator	12-1-77	240	0.2
T. J. Romero	134781	Class 2 Operator	12-5-77	180	< 0.1
R. Thompson	138918	Class 2 Operator	1-19-78	180	0.2