

AR 226 - 3469

6PP

RECYCLED

CHAMBERS WORKS
FLUOROCEMICALS IN BLOOD STUDY

- (1) RESULTS OF STUDY - LEVELS OF FLUORINE IN THE BLOOD OF
CHAMBERS WORKS EMPLOYEES. (INORGANIC AND LOW VOLATILITY
ORGANIC FLUORINE)
- (2) INDUSTRIAL HYGIENE SURVEY
 - MANUFACTURE OF [REDACTED]
 - MANUFACTURE OF [REDACTED] [REDACTED] [REDACTED]
[REDACTED]

R. D. RICHARDSON/AMB
18 MAY 1979

Company Sanitized. Does not contain TSCA CBI

ORGANIC FLUORINE IN BLOOD

GROUP (SAMPLE SIZE)

PPM ORGANIC FLUORINE*

3M DATA

GENERAL POPULATION (106)

0.002 TO 0.13
[0.02]**

PLANT OFFICE WORKER

0.01 TO 0.06

PLANT WORKER - GENERAL

0.13 TO 1.18

PLANT WORKER - LONG

SERVICE IN F/C AREA

NEWER PLANT

0.9 TO 9.1

OLDER PLANT

5.9 TO 71

DU PONT DATA

WILMINGTON CONTROL GROUP (25)

(23 OF 25) 0 - 0.38 ***
[0.094]

CHAMBERS WORKS GROUP (55)

(54 OF 55) 0 - 0.37 ****
[0.15]

CONCLUSIONS

- CHAMBERS WORKS EMPLOYEES DO NOT HAVE ELEVATED LEVELS OF ORGANIC FLUORINE IN THEIR BLOOD AS WAS REPORTED FOR 3M WORKERS.
- THE MEAN VALUE FOR CHAMBERS WORKS EMPLOYEES WAS SLIGHTLY HIGHER THAN THE WILMINGTON CONTROL GROUP [0.15 VERSUS 0.094], BUT ALL VALUES ARE CONSIDERED TO BE "NORMAL" (<1 PPM) EXCEPT ONE VALUE IN THE WILMINGTON CONTROL GROUP (10.6 PPM).

* BY DIFFERENCE BETWEEN
TOTAL AND INORGANIC FLUORINE

*** EXCEPT 2 VALUES 10.6;
0.78

** [MEDIAN VALUES]

**** EXCEPT 1 VALUE 0.89 PPM

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CHAMBERS WORKS FLUOROCHEMICALS COHORT

- CHAMBERS WORKS EMPLOYEES WERE IDENTIFIED WHO
 - (1) HAVE HAD JOB ASSIGNMENTS WITH POTENTIAL FOR EXPOSURE
 - (2) ARE STILL ACTIVE OR ARE READILY AVAILABLE ON SITE
- BLOOD SAMPLES TAKEN AT REGULARLY SCHEDULED PHYSICAL EXAMINATION

<u>JOB ASSIGNMENT</u>	<u>LOCATION</u>	<u>NUMBER IDENTIFIED</u>	<u>NUMBER CHECKED TO DATE</u>	<u>(%)</u>
R & D	JACKSON LAB. TECHNICAL LAB.	50	18	(36)
DEVELOPMENT MANUFACTURING	SPEC. CHEM. WEST	36	6	(17)
MANUFACTURING	SPEC. CHEM. EAST	84	26	(31)
	OTHER	29	5	(17)
		<u>199</u>	<u>55</u>	(28)

- INFORMAL CHECK WITH SUPERVISION INDICATED THAT GROUP (55) SAMPLED WAS REPRESENTATIVE OF COHORT (199).

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CONCLUSIONS - INDUSTRIAL HYGIENE SURVEY

A) [REDACTED]

- 1) ENVIRONMENTAL MONITORING DATA SUGGESTED CONDITIONS IN THE MANUFACTURING FACILITIES TO BE NORMALLY $<5 \text{ mg/m}^3$ [REDACTED] (8 HRS.). HOWEVER, EXCURSIONS TO RAISE THIS LEVEL TO 30 TO 40 mg/m^3 [REDACTED] (8 HRS.) HAVE BEEN OBSERVED ON MULTIPLE OCCASIONS.
- 2) ADDITIONAL ENVIRONMENTAL MONITORING REQUIRED TO IDENTIFY EXPOSURE SOURCES AND DEFINE POTENTIAL EXPOSURE LEVELS. (IN PROGRESS)
- 3) MOST PROBABLE EXPOSURE SOURCES ARE DRUMMING AND ~~DEDRUMMING~~ FACILITIES, AND TO A LESSER EXTENT SAMPLING EQUIPMENT AND PROCEDURES.
- 4) DRUMMING, ~~DEDRUMMING~~ AND SAMPLING FACILITIES ARE OF A LOW STANDARD FOR CONTAINMENT BY ENGINEERING CONTROLS, (NOT ENCLOSED, NO LOCAL VENTILATION)
- 5) A CONTRIBUTING FACTOR IS THAT THE FACILITIES ARE ENCLOSED IN A BUILDING. PROMPT ELIMINATION OF PROCESS LEAKS AND MAINTAINENCE OF VENTILATION IS ESSENTIAL.

B) [REDACTED]

USE AREAS

LIMITED, AVAILABLE, ENVIRONMENTAL DATA SUGGEST THE POTENTIAL FOR EXPOSURE TO [REDACTED] TO BE LOW.

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RECOMMENDATIONS

- 1) DISCONTINUE PROGRAM TO DETERMINE FLUORINE IN BLOOD,
- 2) ADVISE EMPLOYEES THAT BLOOD ANALYSIS PROGRAM HAS BEEN DISCONTINUED DUE TO UNIFORMLY FAVORABLE RESULTS.
- 3) UPGRADE FACILITIES, IF REQUIRED, TO MEET HASKELL LABORATORY EXPOSURE LIMIT GUIDELINES WHEN THESE ISSUE.

18 MAY 1979

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