



INTER-OFFICE CORRESPONDENCE

To: F. C. Dehn
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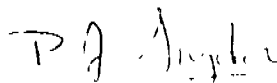
Date: March 2, 1977
From: P. J. Snyder
Location: 10 West
Subject: Revised VDC Monitoring
Summary

Please find attached a revision of my initial summary of the Division's Vinylidene Chloride (VDC) Air Monitoring Data that is presently available.

This re-evaluation was conducted to determine the degree of compliance with three specific levels of VDC, 1.0, 2.5, and 10.0 ppm.

The available monitoring data suggests that the plants are generally within the present guideline of 10 ppm, but over either 1.0 or 2.5 ppm (TWA).

Lake Charles data show 12% over 2.5 and 22% over 1.0 ppm, overall. Based on a limited amount of information, the 3 jobs of highest anticipated exposure have 63% over either 1.0 or 2.5 ppm (TWA).


P. J. Snyder

/alc

Attachment

INTRODUCTION

Based on available personnel and area air monitoring data, an evaluation was conducted in order to ascertain the impact of a 1, 2.5 and 10 ppm Vinylidene Chloride Standard, (VDC). This information has been categorized by plant location and by the time period for which data is available.

DATA SUMMARY: PERSONNEL MONITORING DATA

Location: Lake Charles

Period: 4/75-4/76

Two hundred thirty one (231) VDC personnel samples are on file, of these 60 or 26% were analyzed in excess of 1 ppm. Although each of these were not identified as TWA, short-term or ceiling samples, it is estimated that approximately one-half of these 60 samples, are time weighted averages. Samples in excess of 1 ppm were recorded for 14 job categories, representing at least 83 individual employees. Adequacy or coverage of the sampling protocol was not done, therefore, the total number of employees potentially exposed to VDC is unknown at this time. The sampling results for this time period point to eight potential problem areas.

- | | |
|------------------|-----------------------|
| 1. EDC Operator | 5. MC Operator |
| 2. Loader | 6. MC Aux. Operator |
| 3. Loader Helper | 7. P/T Still Operator |
| 4. Pipefitter | 8. P/T Aux. Operator |

PERIOD: 6/1/76 - 12/13/76, 60 personnel samples are on record, and 13 or 22% were analyzed to be in excess of 1 ppm with 7 or 12% over 2.5 ppm. None of the monitoring results were in excess of 10 ppm. Table 1 below provides a specific breakdown of the monitoring data for this period.

<u>SAMPLE TYPE</u>	<u>NO. SAMPLES TAKEN</u>	<u>NO. SAMPLES > 10 PPM</u>	<u>NO. SAMPLES > 2.5 ppm</u>	<u>NO. SAMPLES > 1.0 ppm</u>
CEILING	0	0	0	0
SHORT TERM	11	0	1	2
TWA	49	0	6	11
TOTALS	60	0	7(12%)	13(22%)

Personnel monitoring was conducted on 20 Job categories, with concentrations greater than 1 ppm reported for 5 jobs. The number of personnel that this figure represents is undetermined at this time. The highest value recorded is 6.3 ppm VDC, (MC. Aux Operator). This monitoring data indicated most the same job categories as mentioned above as representing the problem areas. Table 2 below provides a more specific breakdown for three job categories that have a direct involvement with VDC.

DEPARTMENT: TRI ETHANE - VDCM-MC

	<u>NO. SAMPLES TAKEN</u>	<u>TWA DATA</u>	<u>OTHER DATA</u>
EDC OPER	1	0.45	-
TRI ETHANE OPER	3	3.70	-
		2.70	-
		0.90	-
TRI ETHANE AUX OPER	8	6.30	1.80
		5.00	0.78
		4.50	0.12
		0.470	0.00

SL 073733

Location: Corpus Christi

Period: 7/1/76-12/31/76

Thirty (30) personnel samples were recorded, and none were found to be greater than .86 ppm. It should be noted that all 30 samples were obtained in the laboratory. This data indicates that this represents 15 employees actual exposures.

Location: Barberton

Period: 7/1/76-12/31/76

A single personnel sample was taken on a "Technical Chemist". A concentration of 0.1 ppm was recorded.

Data Summary: Area Monitoring Data

Location: Chemical Division

Period: 7/1/76-12/31/76

Two hundred sixty four (264) area samples were recorded across the Division for VDC during this time period. Except for three measurements at Natrium and ten at Lake Charles, all area monitoring was conducted at Corpus Christi. The highest two readings were both taken at Lake Charles (Per/Tri-Tetra) and were recorded as 14.9 and 3.2 ppm, (short term monitoring).

CONCLUSIONS

1. Records show that 322 VDC personnel air monitoring samples were taken over the two time periods 4/75 - 4/76 and 7/76 - 12/76, (Lake Charles (6/76 - 12/76)).
2. 73 or 23% of these 322 samples were analyzed to be in excess of 1ppm.
3. Most personnel samples are taken at Lake Charles, most area at Corpus Christi. The highest area sample was recorded to be 14.9 ppm (Lake Charles).
4. Lake Charles has 8 job categories in particular that have most of the highest exposures to VDC.
5. The three job categories expected to have the highest exposures to VDC have a total of 8 TWA samples for the last six months of 1976.
6. Based on the available monitoring data, respirators are not worn for exposure to VDC.

KE CHARLES VDC MONITORING RESUL

TABLE III

4/75-4/76

Impact of a IPPM Standard

	<u>No. Samples 4/75-4/76</u>	<u>Highest Value</u>	<u>No. Samples > 1.0</u>	<u>No. Employees Sampled</u>
EDC Operator	16	5.6	7	6
MC. Operator	20	12.5	12	7
MC. Aux. Oper.	25	43.0	17	6
P/T RX Oper.	21	2.8	1	6
P/T Still Oper.	24	15.6	9	8
P/T Aux. Oper.	16	8.4	5	7
VC Proc. Oper.	15	.38	-	11
VC Furn Oper.	16	1.0	-	11
EC Operator	9	1.2	1	8
P/T Tetra Oper.	6	1.5	1	6
OHC Operator	10	.60	-	5
OHC Aux. Oper	10	.32	-	6
P/T Lead Oper.	3	.33	-	3
Lab Assoc.	12	4.1	1	5
Lab Assist	2	1.12	1	2
Lab Anal.	4	.10	-	6
Lab Sr. Anal.	1	.11	-	2
Loader	9	2.8	1	8
Load Helper	8	10.0	2	6
Pipefitter	2	96.0	1	5
Maint. Helper	2	1.7	1	3
	231	96.0	60	

PERSONNEL VDC MONITORING RECORDS

TABLE IV

6/1/76 - 12/31/76

PLANT: LAKE CHARLESDepartment: EDC Liquid Phase

<u>Job Title</u> <u>Recorded</u>	<u># Samples</u> <u>Taken</u>	<u>Highest</u> <u>Value</u>	<u># Samples</u> <u>> IPPM</u>	<u># Employees</u> <u>Sampled</u>	<u>Total #</u> <u>Employees</u> <u>on Job</u>
EDC Operator	1	0.4	-	1	?
<u>Ethyl Chloride</u>					
EC HCL Oper	2	0.39	-	2	4
<u>Per/Tri-Tetra</u>					
P/T Lead Oper.	1	0.27	-	1	17
P/T RX Oper	3	1.00	-	2	3
P/T Still Oper	3	1.5	1	3	6
P/T Aux. Oper	7	2.6	2	4	12
Shift Repairman	1	0.11	-	1	
Welder	1	0.10	-	1	
<u>Shipping</u>					
Loader	4	1.0	-	2	18
Load Helper	4	3.8	2	3	13
<u>Technical</u>					
Lab Assoc.	2	0.00	-	2	9
<u>Trieth-VDCM-MC</u>					
EDC Operator	1	0.45	-	1	?
Tri-Ethane Oper.	3	3.70	2	3	5
Tri-Ethane Aux. Op.	8	6.30	4	6	12
<u>OHC-EDC</u>					
OHC Auxiliary Oper.	1	0.00	-	1	
OHC Operator	1	0.00	-	1	
Tetra Operator	1	0.00	-	1	

SL 073736

PLANT: Lake Charles (Continued)

Vinyl Chloride

EC HCL Oper.	3	0.11	-	3	4
Oper.-VCM-Furn.	6	0.10	-	5	?
Oper.VCM-Proc.	7	0.29	-	6	?
Sub Totals	60	6.3	11		

PLANT: CORPUS CHRISTI

Department: Research

Analyst	1	.07	-	1
Chemist	7	.30	-	3
Lab. Anal.	4	.60	-	2
Technician	5	.10	-	2
Technic. Sr.	8	.86	-	3

Research/Laboratory

Chemist	4	.10	-	3
Lab Tech.	1	.05	-	1
Sub Total	30	.86	-	

PLANT: Barberton

Department: Research/Laboratory

Tech Chemist	1	0.10	-	1
Division Totals	91	6.3	11	

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