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A SUBSIDIARY OF UNION CARBIDE CORPORATION

Quality Emulsion Polymers

2043 STEEL DRIVE

TUCKER GEORGIA 30084

404 - 939-9327

RECEIVED
JUL 7 1975
H. V. HOOPER

July 2, 1975

RECEIVED

JUL 08 1975

R. N. WHEELER, JR.

TO: C. H. Greenert
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Subject: Vinyl Chloride
Monitoring Program

*Info cc: RN Wheeler ✓
HG Morlock*

Gentlemen:

Since the new OSHA regulations became effective on April 1, 1975 about 60 ambient air samples have been collected during U-1000 manufacture at Tucker and analyzed for vinyl chloride along with about 30 samples from the Somerset plant. The samples collected at Tucker include personal carbon tube samples (usually over a 15 min. period), grab samples taken with a 50 cc syringe (mainly trouble shooting), and 8-hr area samples collected in 12-liter aluminized Mylar bags using EMI pulse pumps with an 18 sec/2 sec. off/on cycle. All samples received from Somerset have been of the 15 min. carbon tube variety.

Analysis of these data suggest the following:

1. During routine operation both plants are in compliance with the 15 min., 5 ppm ceiling standard.
2. The Tucker facility is in compliance with the 8 hr. TWA 1 ppm exposure limit but may have difficulty staying under the "action level" of 0.5 ppm 8-hr. TWA.
3. Consecutive monitoring over an 8 hr. period or covering a complete U-1000 production run has not been done at Somerset (to my knowledge) but data collected suggest they are in the same position as we are.
4. At Tucker the highest exposures usually occur during the "blow down" period.

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Obviously, it is easier to comply with the 5 ppm 15 min. standard than the 8 hr. TWA limit of 1 ppm or the "action level" of 0.5 ppm, especially if the samples are collected during periods other than "blow down".

The 8 hr. bag samples collected at Tucker accurately represent the average vinyl chloride level in that particular area over an 8 hr. period but do not necessarily reflect the personnel exposure during this period, since the bags are usually located where VCI level is expected to be highest and the worker is in and out of this area many times during his shift. Apparently, the only way to accurately determine TWA 8 hr. average exposures is to collect a series of consecutive personal air samples that completely cover the duration of exposure in the 8 hrs. We plan to do this in the future.

The attached tables include all of the air samples collected at Tucker and Somerset since the new regulations went into effect April 1, 1975. Keep in mind that the "grab" samples were for trouble shooting purposes, do not reflect personnel exposure, and were often taken where high VCI concentrations were known to exist.

During future runs we plan to sample the vent stream and determine how much VCI we are currently releasing to the atmosphere.

Very truly yours,

John L. Ferrell

John L. Ferrell

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VINYL CHLORIDE MONITORING - TUCKER

15-min. Personal Exposure Samples

<u>Date</u>	<u>Location & Comments</u>	<u>PPM VCI</u>
5/16	Relocation of VCI lines outside Process Bldg. Lead Mechanic wearing fresh air equipment	24.8
5/21	Repair of high pressure pump outside pro. bldg.	0.35
5/21	Mezzanine area during mono feed	< 0.25
5/21	Mezzanine area during blow down	0.97
5/28	W/O area pulling monomer	< 0.25
5/28	Floor area during top heat	nil
5/29	Rx 3 Mezzanine area	nil
5/29	Rx 3 mezzanine & floor	0.26
6/18	W/O area pulling monomer	< 0.25
6/18	Mezzanine & floor area during mono feed	< 0.25
6/18	High pressure pump area - leak - 5 ft. away	0.47
6/18	W/O area pulling monomer	0.26
6/18	Mezzanine - initial soap & mono charge - leaking valve	1.2
6/19	W/O area pulling monomer	nil
6/19	Mezzanine during mono feed	< 0.25
6/25	Mezzanine during blow down	0.47
6/25	Floor and mezzanine area during blow down	0.30

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VINYL CHLORIDE MONITORING - TUCKER

Grab (syringe) samples

<u>Date</u>	<u>Location & Comments</u>	<u>PPM VCI</u>
5/16	Relocating VCI Monomer lines	4.0
5/21-8:15 a.m.	Walking thru process bldg. following high press pump leak	0.25
5/21-8:15 a.m.	1.5 ft. from H. P. pump packing	15.1
5/21-10:15 a.m.	Inside H. P. pump case 1 in. from packing nut - leak	108
5/21-10:15 a.m.	H. P. pump area 5 ft. away	0.4
5/21-11:15 a.m.	Inside H. P. pump case 1 in from packing nut	276
5/21-11:15 a.m.	H. P. pump area 5 ft. away	1.4
5/21-1:25 p.m.	Inside pump case 1 in. from packing	668
5/21-1:25 p.m.	H. P. pump area 5 ft. away	0.5
5/21-2:30 p.m.	Inside pump case, etc.	776
5/21-2:30 p.m.	H. P. pump area 5 ft. away	0.4
5/29-2:18 p.m.	Floor area between BT 3 & CT 3	0.92
5/29-2:40 p.m.	Inside H. P. pump case	92.5
5/29-2:40 p.m.	H. P. pump area	0.76
5/29-4:00 p.m.	#3 Soap pump 5 in. from packing - leak	12.3
5/29-4:00 p.m.	# 3 Soap pump 5 ft. away	0.8
6/18-10:15 a.m.	W/O area 1 in. from mono meter - leak suspected	4.23
6/18-11:10 a.m.	Mezzanine between Rx 3 & CT 3	< 0.25
6/18-11:40 a.m.	Inside H. P. pump case	60.7
6/18-12:15 p.m.	Mezzanine Rx 3 area	< 0.25
6/18-12:30 p.m.	H. P. pump area.	0.29
6/18-8:30 p.m.	Between CT 3 & BT 3 floor during blow down	7.9
6/18-10:00 p.m.	Between CT 3 & BT. 3 floor after blow down	2.8
6/18-10:15 p.m.	Inside H.P. pump case	5.5
6/18-10:35 p.m.	Inside H. P. pump case	8.2
6/19-12:45 p.m.	Inside H. P. pump case	0.28
6/19-1:40 p.m.	Mezzanine Rx 3 Area	nil
6/19-1:45 p.m.	Inside H. P. pump case	0.88
6/19-2:05 p.m.	W/O area	< 0.25
6/24-1:00 p.m.	Inside product storage tank-empty-contained U-1000	nil
6/25-1:20 p.m.	Mezzanine CT 3 area during blow down	0.74
6/25-1:20 p.m.	Mezzanine BT 3 5 in. from manhead cover - blow down	0.74
6/25-2:00 p.m.	Floor around dump valve Rx 3	0.27

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VINYL CHLORIDE MONITORING - TUCKER

8 hr. Bag Samples

<u>Date</u>	<u>Location & Comments</u>	<u>PPM VCI</u>
5/29	On top of CT 3 - mezzanine	0.78
6/18	On top of CT 3	0.40
6/18	Mezzanine Rx 3 area	0.36
6/25 9:00 a.-5:00 p.	On top of CT 3	0.57
6/25 9:00 a. - 5:00 p.	W/O area - floor - 25 ft. from BT 3	1.25
6/25 5:00 p. - 1:00 a.	On top of CT 3	0.49
6/25 5:00 p. - 1:00 a.	W/O area, etc.	0.26

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VINYL CHLORIDE MONITORING - SOMERSET

15-min. Carbon Tube Samples

<u>Date</u>	<u>Location & Comments</u>	<u>PPm VCl</u>
4/3	VCl disconnect -10 ft upwind (1hr. sample)	120.6
4/3	VCl disconnect 10 ft downwind (1 hr. sample)	3.4
4/7	Rx 1 - Rx 3 area	1.09
4/8	Rx 3 area	0.55
4/7	Outside process bldg.	0.25
4/8	Rx 3 area	0.85
5/15	Screening area - 5131	0.28
5/15	Screening area - 5131	0.25
5/15	Screening 5131	0.25
5/15	Screening 5131	0.25
5/15	Screening 5131	nil
5/19	Rx 3 area	0.25
5/19	Rx 1 & Rx 2 area	0.25
5/19	Rx 3 floor	0.25
5/19	Rx 3 area	0.49
5/19	Rx 1 & Rx 2 area	nil
5/19	Floor area	0.25
5/19	W/O area	0.25
5/28	Rx 1 & Rx 2 area	0.43
5/28	W/O area	0.88
5/28	Rx 3 Area	0.68
5/28	Rx 1 & Rx 2 area	0.98
6/9	Rx 3 area	2.7
6/9	Mezzanine	1.6
6/9	General floor	0.24
6/9	Rx 1 & Rx 2 area	nil

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VINYL CHLORIDE MONITORING - SOMERSET

15 - mil. Carbon Tube Samples

<u>Date</u>	<u>Location & Comments</u>	<u>PPM VCI</u>
6/10	Rx 3 Area	0.37
6/10	Rx 1 & Rx 2 area	0.24
6/10	W/O area	0.66
6/10	General floor & monomer feed area	1.14

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