

- ① Cpy for GAA (date 12-21-72)
 ② BRL Cpy sent to CHK, WMI, NAM

UNIROYAL, Inc.

Oxford E-G-1

(Location)

TO: D. E. Dudrow
 R. E. Lowell

FROM: W. D. Harris, Ph. D.
 Corporate Industrial Toxicologist

DATE: December 18, 1972

SUBJECT: Painesville Plant Visit, December 12 and 13, 1972

RECEIVED BY BRL		
DEC 21 '72		
ROUTE		
ORDER	TO	DATE RELEASED
	LEB	
	JHC	
	CHK	
	REH	
	WMI	
	NAM	
	DLM	
	LPM	
	BRL	XX
	F	

Upon my arrival at Painesville, I went into a meeting with the following people present.

B. R. Leach	Factory Manager
C. H. Kim	Technical Superintendent
C. J. Urbanski	Production General Foreman- Area #4
C. B. Westerhoff	Chief Chemist
N. R. Walter	Safety Supervisor
Raymond Kenney	Utilities Engineer
W. M. Iliff	Plant Engineer
Michael Jasman	Chief Process Engineer
R. E. Holman	Production Superintendent

I explained the TLV concept and various sampling approaches. There was general agreement that it is advisable to get better data than they now have. Mr. Leach summarized facts which Mr. Westerhoff had given him.

- | | |
|--|---|
| a. Lower Explosive Limit (LEL) 4% | = 40,000ppm |
| b. 10% LEL | = 4,000ppm |
| c. TLV | = 200ppm |
| d. Possible limit based on Dow
and other work | = 50ppm |
| e. Test limit | = 0.5ppm |
| f. Odor threshold about | = 250ppm |
| g. Concentration which will
anaesthetize | = 16,000ppm in 5 min.,
6,000ppm in several hours |

Possible trouble spots in Area #4

1. Second floor at polys during drop
2. Slurry tank
3. Poly during jetting
4. Second floor at compressors
5. Dryer outlet

INTERCOMPANY CORRESPONDENCE

UNIROY000816

Mr. Westerhoff then took me on a tour of #4 Area (PVC and Paracril). It was very obvious that grab samples unless very numerous, would be of little value. We agreed that it would be well to get four grab samples on Wednesday morning. Mrs. Stoll will have them run thru the chromatograph but will not be able to interpret the curves until she has run some knowns in the expected concentrations. She may not be able to do this until after Christmas.

Jack Porter took me through Area #1, the old PVC plant, in the afternoon. The process is somewhat different and does involve use of a modest amount of vinyl acetate about one week in four. They are also working on THF cleaning of polys but do not have this process in regular use. Both vinyl acetate and THF have a much stronger odor than vinyl chloride. Some sampling should be done on both. TLV's are as follows:

Vinyl acetate	10
THF	200

There are several possible sampling and analytical approaches, each with certain advantages and disadvantages.

Analytical

1. Gas chromatograph Can be very specific and precise. Each analysis takes about one hour. Each sample is a grab sample so a large number of samples is required due to frequent movement of worker and wide variation in concentration with time at a given position. The same method can be used for vinyl chloride, THF, vinyl acetate, acrylonitrile, acrolein, etc. It is necessary to work with knowns to establish Rf value for each material.
2. Permanganate oxidation followed by chloride determination This method can be made very specific and adequately sensitive. It lends itself to an integrating sampling procedure. It can probably be used in a personal sampler attached to the worker, greatly reducing the number of samples required. Reasonable results could be obtained by sampling at a number of carefully chosen fixed points and calculating time weighted average based on a time study of worker habits. This method is useful for VC only.
3. Analysis of breath of worker following a full work shift and comparing with a standard curve This gives an integrated time weighted average exposure.
4. Possible use of existing sequential sampling set-up with a more sensitive analyzer

It was agreed during the close-out discussion that sampling should be done and that it will be best for Painesville to do it. We will cooperate and will evaluate results. They will explore method 4 at once to see if hardware is available and at what cost.

W. D. Harris

W. D. Harris

WDH:rg

cc: L. F. Dieringer
B. R. Leach ✓

VCM CONCENTRATION
24 HOUR SAMPLES-NIDAH RESULTS

<u>DATE</u>	<u>BLDG.</u>	<u>LOCATION</u>	<u>RANGE, ppm</u>	<u>AVE., ppm</u>
2/12/74	117	2nd Floor @ Charge Station		52
2/13/74	117	1st Floor @ Stripper H		36
2/14/74	117	1st Floor @ #7 Compressor		528
2/15/74	117	2nd Floor @ Exhaust Fan		148
2/18/74	107	2nd Floor @ Weighing Bench		52
2/19/74	107	2nd Floor Between A&B Strippers		25
2/20/74	107	Air Above Manhole During Jetting	32-230	90 (40 min.)
2/20/74	107	Poly Cleaner Entered @ 26 ppm	26	
2/20/74	107	Poly Cleanout Matl. in Drum (2/3 full)	6"abv. drum 40	
2/20/74	107	" " " " " "	6"into drum 75	
2/20/74	107	1st Floor Catwalk Under #17	2-1100	120 (22 hrs.)
2/21/74	107	2nd Floor Exhaust Fan	26-1000	120 (4 hrs.)
2/21/74	107	With Poly Cleaner in #15		1630 (chromato
2/22/74	414	2nd Floor Exhaust Fan	20-1050	88
2/23/74	414	2nd Floor 2' East of Poly #11	0-1640	88
2/24/74	414	1st Floor Exhaust Fan	3-1600	100
2/25/74	414	1st Floor Between Strainers	0-1600	160
2/26/74	415	Bagger Station	20-160	26
2/27/74	117	Poly 10 Jetting	70-745	265 (30 min.)
2/27/74	117	Poly 6 Jetting	50-1095	260 (24 min.)
2/27/74	117	Poly 6 Jetting-next shift	160-1600+	380 (17 min.)
2/27/74	117	SE Exhaust Fan-2nd Floor	80-530	160 (16 hrs.)
2/27/74	108	Centrifuge Catwalk	0-950	65
3/1/74	108	Swenson Bagger		30 (30 min.)
3/1/74	108	Bowen #1		15 (6 hrs.)
3/1/74	107	Poly 22 with Poly cleaner	120-580	185 (75 min.)
3/1/74	107	Poly 22 with increased air		25
3/2/74	108	Catwalk @ Bowen #2 Derrick	35-800+	250
3/4/74	414	1st Floor Exhaust Fan	8-360	60 (2.5 hrs.)
3/4/74	414	Poly 5 Jetting	100-320	160 (8 min.)
3/4/74	414	Poly Cleaner in #5	10-25	15 (23 min.)
3/5/74	414	1st Floor Exhaust Fan	10-380	40 (4 hrs.)
3/5/74	414	Jetting #4		1600+ (7 min.)
3/5/74	108	Feed Chute to Wms. Mills	5-100	25 (11 hrs.)
3/6/74	117	Between Compressors 7&8	160-550	270
3/6/74	107	2nd Floor Exhaust Fan	50-1040	120 (19 hrs.)
3/7/74	107	Poly Cleaner in #16	50-150	80 (70 min.)
3/7/74	107	2nd Floor Exhaust Fan	50-160	70 (2 hrs.)
3/8/74	108	Locker Room	0	0 (3.5 hrs.)
3/8/74	117	2nd Floor Exhaust Fan	25-800	90 (18 hrs.)
3/9/74	100	Break Room	4-14	8
3/10/74	108	Locker Room	2-190	5
3/11/74	108	Sock Change-Bowen #2	15-26	20 (15 min.)
3/11/74	108	Pilot Plant	0-700	14 (10 hrs.)