

Vinyl Chloride file

UNIROYAL, Inc.

OXFORD
(Location)

September 16, 1975

TO: D. E. Dudrow
FROM: L. F. Dieringer
SUBJECT: Status Report, Plastics Division Vinyl Chloride Standard Compliance, September 1, 1975.

The results of vinyl chloride air sampling carried out to determine compliance with the vinyl chloride standard, are found in the attached Mishawaka report of May 28, 1975 and compilation of results received for the other Plastic Division Plants. In line with the standard, sampling was discontinued where concentrations below the 0.5 ppm action level were found. Until recently, the charcoal tube-gas chromatograph monitoring method was employed. About a month ago the Plastics Division purchased an MDA continuous Vinyl Chloride Monitor, which it plans to move from plant to plant, depending on need and supplementing with charcoal tube sampling where necessary.

Compliance with the standard has been obtained with the following exceptions:

- 1.) Masland - Concentrations up to 4 ppm have been found at the churn mixing prior to dumping into the Banbury, when Marvinol PVC is used, while less than 0.2 ppm was found when Tenneco PVC was used. No action has been taken to comply with the standard when using Marvinol - training, medical surveillance, proper monitoring.
- 2.) Masland - Concentrations above 20 ppm have been found under the storage silo with Marvinol and below 0.3 ppm with Tenneco. No action has been taken to comply with the standard when using Marvinol - posting the area, use of respirators.
- 3.) Truck transportation of bagged PVC - certain plants receive palletized bags of Marvinol by trailer truck. When back doors of trucks initially opened at plants, vinyl chloride concentrations are above the allowable limit. To prevent hazardous exposure during unloading, the Plastic Division had adopted policy of parking trailer in the open away from the unloading dock for at least thirty minutes, then moving truck to dock to unload.
- 4.) Chicago - Up to 2 ppm has been found in Warehouse 24 hours after unloading palletized bags from truck. Since there is no mechanical ventilation in Warehouse, if conditions permit openings to outdoor are left open for 48 hours. It is doubtful that exposure is hazardous, as employees are in and out of Warehouse and exposure is intermittent.

LFD/df

cc: W. D. Harris, Ph.D.
J. D. Forbes, M.D. ✓

INTERCOMPANY CORRESPONDENCE

URL 01855

Return

L. J. Grecco
May 28, 1975

cc: L. E. Dieringer - Oxford - E-G-1
R. W. Mallory " D-2-2
R. P. Braun E. L. Loeffler
C. R. Brown G. W. Ouellette
P. P. D'Eletto L. J. Primeau
D. L. Frey R. L. Schmitt
H. L. Haskell R. H. Schiffer

RECEIVED
MAY 30 1975
MEDICAL
DEPARTMENT

J. R. Sellers

Re: Mishawaka Plant - Vinyl Chloride Monomer -
Air Sampling and Operator Exposure

Air sampling of environment and storage areas and operator monitoring has been conducted at the Mishawaka Plant for the past year. During the course of this testing we did find several areas which would have been in violation of the Federal Standard, which became effective on January 1, 1975. With the cooperation of our engineering, safety and production groups, the major problems have been resolved with the addition of ventilation in the silo areas, hopper car unloading area and the Ko Kneader mixing area. The purging of trailer trucks for 30 minutes before unloading has proven to be effective and will be continued. Our warehouse and storage areas have varied from time to time and some static tests taken on the skids do exceed the 0.5 PPM standard, operator exposure in these areas will be below the standard on a time weighted average. Some additional air movement will be considered after we have conducted additional tests with the continuous monitor we have requested.

URL 01856

Building 2 $\frac{1}{4}$ (half floor) cannot be used as a storage area for PVC resin due to inadequate ventilation. Mr. R. H. Schiffer has been advised. Signs will have to be posted on each of our silos and in each of our storage areas. This will be coordinated by the writer with the responsible production and safety representatives.

The attached tables will show the air sampling results since the previous report. The effectiveness of our programs can be seen in the areas discussed above.

A training program is being outlined and will be completed by June 15, 1975. In accordance with the Federal Standard, any employee exposed to Vinyl Chloride will have to be instructed in the potential danger of Vinyl Chloride and our programs to reduce the amount of exposure and continued testing. This program will be coordinated by the writer with the respective production organizations in the plant and in our division.

Attach - 3

URL 01857

L. J. Grecco
May 28, 1975

MISHAWAKA PLANT
VINYL CHLORIDE TESTING

<u>LOCATION/OPERATION</u>	<u>DATE</u>	<u>TYPE TEST</u>	<u>PVC USED</u>	<u>VCM (PPM)</u>	<u>REMARKS</u>
Ko Kneader Mixing	5/23/74	Operator	VR-23	3.80	
	5/28/74	"	"	2.33	
	7/10/74	"	"	0.61	Wall Exhaust Fan Used
	9/6/74	"	"	0.61	
	10/28/74	"	"	0.68	
	4/1/75	"	"	0.04	Hopper Exhaust Installed
	4/29/75	"	"	0.00	
Silos - PVC Storage	5/24/74	Static	VR-22	1.25	
	5/30/74	"	"	2.50	
	7/7/74	"	"	7.10	
	7/8/74	"	VR-23	4.57	
	4/14/75	"	VR-22	0.59	Exhaust Fans Installed
	4/15/75	"	VR-23	0.45	

MASHAMAKA PLANT - VINYL CHLORIDE TESTING

URL 01858

<u>LOCATION/OPERATION</u>	<u>DATE</u>	<u>TYPE TEST</u>	<u>PVC USED</u>	<u>VCM (PPM)</u>	<u>REMARKS</u>
Coated Fabrics - CF-6 Banbury	5/23/74	Operator	VR-22,24	0.00	
	6/7/74	"	"	0.45	
	7/9/74	"	"	0.00	
	8/19/74	"	"	0.00	
CF-8 Banbury	5/23/74	"	"	0.14	
	6/11/74	"	"	0.30	
	8/16/74	"	"	0.17	
CF-6 Calender	5/23/74	"	"	0.15	
	6/7/74	"	"	0.10	
	7/9/74	"	"	0.00	
	8/19/74	"	"	0.00	
CF-8 Calender	5/23/74	"	"	0.22	
	8/16/74	"	"	0.17	
Bldg. Unloading PVC Bags	6/7/74	Operator	VR-24	0.40	
	7/9/74	"	"	0.00	
	8/21/74	"	"	0.23	
Hobart Mixer	6/10/74	"	"	0.03	
ENSOLITE Laminator	8/29/74	"	VR-22	0.00	

RESINURCA PLANT - VINYL CHLORIDE TESTING

URL 01859

-3-

<u>LOCATION/GENERATION</u>	<u>DATE</u>	<u>TYPE TEST</u>	<u>PVC USED</u>	<u>VCM (PPM)</u>	<u>REMARKS</u>
ENSOLITE Oven	9/16/74	Operator	VR-22	0.00	
CE-11 Embosser	9/20/74	"	VR-22 & 24	0.07	
Bldg. 53 Comet Machine	10/17/74	"	VR-22	0.00	
Bldg. 61-3 Storage	4/23/75	Static	VR-23	0.61	
	4/23/75	"	VR-22	0.27	
Bldg. 80 Unloading PVC	4/29/75	Operator	VR-22	0.03	Above Hopper Car
	4/29/75	"	"	0.00	Ground Level

URL 01860

August 8, 1975

MASLAND PLANT

<u>LOCATION/OPERATION</u>	<u>DATE</u>	<u>TYPE TEST</u>	<u>COMPOUND</u>	<u>VCM (ppm)</u>	<u>REMARKS</u>
#1 Banbury Mixer	10/31/74	Operator	9949K	0.55	Marvinol
	4/7/75	"	1056	1.67	Marvinol
	6/2/75	"		2.27	Marvinol
	"	"		0.09	Tenneco
	6/25/75	"	1495-S	0.15	Tenneco
	"	"	1056-SH	0.04	Tenneco
#2 Banbury Mixer	4/9/75	Operator	Clad Duran Slabs	0.13	Marvinol
	6/2/75	"		0.45	Marvinol
	"	"		0.05	Tenneco
#4 Banbury Mixer	10/31/74	Operator	9530	0.56	Marvinol
	4/7/75	"	8683-53	1.66	"
	5/5/75	"	8647-FR	3.00	"
	5/7/75	"	4669-V3	1.51	"
	6/25/75		2950-53	0.07	Tenneco
	"		7516-53	0.0	"
#5 Banbury Mixer	10/31/74	Operator	1240-5-3	0.30	Marvinol
	4/7/75	"	5456-X3	3.24	"
	5/5/75	"	5350-X3	3.84	"
	6/25/75	"	5750-X3	0.05	Tenneco
	"	"	"	0.05	"
#1 Banbury Drop Mill	10/31/74	Operator	9949A	0.00	Marvinol
	4/8/75	"	DC5010	0.17	"

URL 01861

<u>LOCATION/OPERATION</u>	<u>DATE</u>	<u>TYPE TEST</u>	<u>COMPOUND</u>	<u>VCM (ppm)</u>	<u>REMARKS</u>
#2 Banbury Drop Mill	1/31/74	Operator	8754	0.10	Marvinol
#4 Banbury Drop Mill	10/31/74	Operator	2509	0.00	Marvinol
	4/7/75	"	8683-53	0.00	"
#5 Banbury Drop Mill	10/31/74	Operator	3527	0.20	Marvinol
	4/8/75	"	5250-X3	0.24	"
#1 Calendar Warming Mill	10/31/74	Operator	9949A	0.00	Marvinol
#2 Calendar Warming Mill	10/31/74	Operator	8754	0.00	Marvinol
#4 Calendar Warming Mill	10/31/74	Operator	2509	0.10	Marvinol
	"	"	2509	0.00	"
#5 Calendar Warming Mill	10/31/74	Operator	3527	0.20	"
5.10 (enclosure under 5.10)	10/31/74	Operator	VR22	1.90	Marvinol
	"	Static	"	29.40	"
	4/7/75	"	"	46.20	"
	5/7/75	"	"	21.07	"
	"	"	"	16.77	"
	6/25/75	"	"	0.22	Tenneco
	"	"	"	0.09	"

Note: No detectable vinyl chloride concentrations at puff oven, Building 1 and printing operations, Building 2.

URL 01862

August 8, 1975

STOUGHTON PLANT

<u>LOCATION/OPERATION</u>	<u>DATE</u>	<u>TYPE TEST</u>	<u>COMPOUND</u>	<u>VCM (ppm)</u>	<u>REMARKS</u>
Master Batch Mixer	6/17/74	Operator		0.0	VR53, Ethyl 255
	11/19/74	"		0.0	VR53
	1/30/75	"		0.02	VR53, Geon 124
	"	"		0.09	Pliovic W02, Geon 124
Primary Mixer	6/17/74	"	4426	0.0	VR53, 5051
	"	"	9754	0.0	VR53
	1/30/75	"		0.10	5051, VR10, Pliovic, Geon 124
	"			0.02	5051, Pliovic, Geon 124
Three Roll Mill	6/17/74		4426	0.0	VR53, 5051
	"	"	4426, 9754	0.0	VR53, 5051
	11/19/74	"	3411	0.0	
	3/27/75	Static	FM 3132	0.20	
PVC Storage Area Main Floor	6/17/74	Static		0.0	VR10, VR53, 5051, UC vinyl dispersion Ethyl EHC19
	11/19/74	"		0.0	VR10, VR53
	12/6/74	"		0.0	5051
	3/27/74	"		0.17	Scrap
Basement Storage Area	6/17/74	Static		2.0	VR23, UC Vinyl Dispersion Pliovic W02, Ethyl 218, 255 (VR23 unloaded from trailer in morning 6/17/74)
	11/19/74	Static		0.0	Various
	12/6/74	"		0.10	"

URL 01863

<u>LOCATION/OPERATION</u>	<u>DATE</u>	<u>TYPE TEST</u>	<u>COMPOUND</u>	<u>VCM (ppm)</u>	<u>REMARKS</u>
Trailer truck prior to unloading	6/17/74	Static		106.0	VR23, VR53
	6/18/74	"		4.0	VR5051
	11/19/74	"		0.0	UC Vinyl dispersion OYJV 5870
	12/6/74	"		1.40	VR5051 (Truck #1)
	"	"		0.74	VR5051 (Thirty minute purge)
	"	"		18.00	VR5051 (Truck #2)
	"	"		6.00	VR5051 (after three minute purge with pedestals fan)
Unloading Trailer Truck	6/17/74	Operator		3.0	VR23, VR53
	6/18/74	"		0.0	VR5051
	11/19/74	"		0.16	VR53
	"	"		0.0	UC OYJV 5870
	12/6/74	"		0.02	VR5051 (Truck #1)
	"	"		0.32	VR5051 (Truck #2)
Ink Room	6/17/74	"		0.0	VR23 (Slip solution)
	11/19/74	"	379-91D	0.0	Slip solution
	1/30/75	"		0.08	VR23 (Slip solution)
	"	"		0.14	(Urethane Coating)
	3/27/75	Static		0.0	Slip solution

Note: No detectable vinyl chloride concentration detected at coating, printing and embossing.

URL 01864

August 8, 1975

PORT CLINTON

<u>LOCATION/OPERATION</u>	<u>DATE</u>	<u>TYPE TEST</u>	<u>COMPOUND</u>	<u>VCM (ppm)</u>	<u>REMARKS</u>
Enclosed area under North Silo	7/18/74	Static		0.80	VR22 (minimal Employee exposure)
	12/11/74	"		0.14	VR22 " " "
	"	"		0.16	VR22 " " "
Banbury Tower during transfer	7/18/74	Static		2.3	VR22 (minimal employee exposure)
	12/11/74	"		0.11	VR22 " " "
Banbury Operator	7/18/74	Operator		0.0	
	12/11/74	"		0.0	
Banbury Drop Mill	7/18/74	Operator	95201 WBMK 40995	0.0	VR22
	12/11/74	"	65211-EE 40763	0.0	VR22
Compounding Room	7/18/74	Operator		0.0	VR10, VR53 (Slip solution)
	12/11/74	"		0.14	
Receiving Warehouse	7/18/74	Static		0.0	
	12/11/74	"		0.11	VR5051, VR5056

Note: No detectable vinyl chloride concentrations at calendering printing and coating operations.

August 6, 1975

URL 01865

CHICAGO PLANT

<u>LOCATION/OPERATION</u>	<u>DATE</u>	<u>TYPE TEST</u>	<u>COMPOUND</u>	<u>VCN (ppm)</u>	<u>REMARKS</u>
Warehouse	11/12/74	Operator		0.28	VR24
	"	Static		0.14	VR24 (above pallet)
	4/24/75	"		0.15	VR23 (" ")
	"	"		0.15	VR23 (floor level)
	"	"		0.10	VR24 (above pallet)
	"	"		0.48	VR24 (near fan)
	4/30/75	Static		0.94	VR23
	"	"		1.57	VR24
	"	Operator		2.00	VR23 & 24
	5/13/75	Static		0.09	Northwest
	"	"		0.10	South
Trailer Truck	5/13/75	Static		2.10	
Unloading Trailer	5/13/75	Operator		0.08	
Banbury Operator	11/12/74	Operator		0	
	5/13/75	"		0.04	

Note: No detectable vinyl chloride concentrations found at other operations.

WARSAW, WASHINGTON

No detectable vinyl chloride concentrations found at operations involving using PVC.



VCM - Employees Info.
Letter for
PVC Fabricator
Workers.



UNIROYAL, Inc.

Mishawaka, Ind. 46544

September 2, 1975

Dear Fellow Employee,

Subject: Vinyl Chloride Training Program

In October of 1974, a new Federal Standard was published reducing the permissible exposure of employees to vinyl chloride monomer (VCM) from 25 parts per million parts of air (PPM) to 1 (PPM) averaged over an eight hour workday known as a time weighted average (TWA).

Early in 1974, when reports that VCM gas was suspected of producing a rare liver cancer were published, our analytical laboratory developed a testing method to measure the amount of VCM gas present in all areas of the Mishawaka Plant where polyvinyl chloride resin is received, stored and used. This testing has continued and many of you were tested during your normal working operations with a small pump and a charcoal filled tube. The results of these tests were excellent and we are pleased to report we have no employee exposure above the permissible limit or above the action level which is one-half of the permissible limit. Your cooperation in these tests has been greatly appreciated.

Although we have met the standard with our testing program to date and additional testing is not required, we have continued our tests and plan to test in the future to be sure the PVC material we purchase does not contain higher amounts of VCM gas.

Recently we purchased a continuous monitor which measures the amount of VCM in an area. Some of you have seen this instrument in use and many more of you will in the next few months.

Attached you will find a booklet entitled, "What Every Employee Should Know About Polyvinyl Chloride", which is the most concise and informative information published to date on this subject. If, after you have read the booklet, there are some unanswered questions, you may direct them to the undersigned through your foreman and they will be answered.

G. W. Ouellette
Manager, Safety

L. J. Grucio
Manager, Technical Services

Attach - 1

URL 01866