



THE DOW CHEMICAL COMPANY

MIDLAND, MICHIGAN 48674

January 28, 1987

R&S 020255

ST0161877

Fred Sabel
268 Building

Dow Chemical Confidential Information Released Pursuant
To Public Law 94-171
February 11, 1977
Environmental Protection Agency
Washington, D.C. 20460
Western District of New York

cc: E. A. McLaren

We have begun to collect and computerize the work histories for the vinyl chloride update study. In the process, we have discovered several job departments and titles which we are unsure whether to include in the study. In the original study, Jerry Ott included five production units and employees who began work between 1942 and 1960. Their work experience was considered through 1972. In this study, we will be updating the work histories and exposures for the cohort members through 1977 and hence there may be departments and job titles which were not considered in the previous study.

As background, I am enclosing a copy of the original vinyl chloride study and some exposure notes which Jerry had included in our epidemiology files. Please review these notes and I will contact you in three to four weeks to schedule a meeting for us to discuss the exposure categorization.

Let me know if you have any questions about the materials enclosed.

Wendy Sobel
Wendy Sobel
Epidemiology
1803 Building
636-8102

rt

Enclosures

BACKGROUND ON OTT VINYL CHLORIDE STUDY

The mortality experience of individuals occupationally exposed to vinyl chloride and lesser amounts of vinylidene chloride was studied

Employees were grouped into four exposure categories (high, intermed low, unmeasured) according to highest level of vinyl chloride exposure experienced for at least one month.

Dow Chemical Confidential Material Produced Pursuant
To Protective Order
E. O. 12958, Reg. Case No. 99-4837

Dow Chemical Company
6000 Frankford Avenue
Westborough, Massachusetts 01581
Western District of New York

HISTORY

Research involving vinyl chloride began in mid 1930's

1941 - small copolymer plant
4 operators, 2 miller-packers, 1 foreman, 1 superintendent

Late 1940's - 2 asst. operators added, larger dept. with more
operating, clerical and supervisory personnel

Late 1940's - smaller unit to produce VCM and copolymer semiplant
were operated

1952 - outdoor homopolymer (PVC) and copolymer plant built

Third copolymer unit begun

1969 - PVC production discontinued . Facilities were used to
modernize copolymer production. Plant built in 1941 closed.

Original study - Population defined as those who began work between
1942 and 1960 . Exposure considered until 1972.

Five Production Units Included :

Unit I	Copolymer	1942-1960
Unit II	PVC and copolymer	1953-1960
Unit III	VC Monomer	1947-1954
Unit IV	Copolymer Semi Plant	1946-1955
Unit V	Vinyl Latexes and Polymer Plant	1946-1960

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VINYL CHLORIDE INDUSTRIAL HYGIENE DATA
(From Ott report)

Western Industrial Group

Surveys were made during the period 1950-1959

Production Unit I - copolymer plant (Saran Plant/Saran Polymer)

Wet end and dry end operations

All job classifications except below	200-300 ppm	1/41-12/59 A
	<25 ppm	1/60 + C
Monomer Still and Flash Drier Operator	25-200 ppm	1/57-12/59 B
	<25 ppm	1/60 + C

Production Unit II- PVC and Copolymer (Saran V1V2)

All job classifications except below	25-200 ppm	2/52-12/66 B
	<25 ppm	1/67 + C
Coagulator Operator or Tank and Wheel Operator	200-300 ppm	2/52-12/66 A
	25-200 ppm	1/67 + B
Foreman, Utility Man, Janitor, Handyman	<25 ppm	2/52 + C

Production Unit III- Vinyl Chloride Monomer Plant (1947-1954)

Production Unit IV- Copolymer Semiplant (1946-1955)

Production Unit V- Vinyl Latexes and Polymer Plant (1946-1960)

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indeterminate

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1/30/87

Wendy,

I was thinking last night that we need
Fred Label to evaluate exposure not only to vinyl chloride
but also to PVC dust. The emphysema excess in
the CRR sponsored study was in PVC workers whose
principal exposure I believe would be dust.

Gay

2101000

R&S 020258

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To Protective Order
Re: Case No. 82-1007
Captioned: As above
Signed: The Honorable Judge Gregory
Dated: 1/29/87
Western District of North Carolina

Vinyl Chloride

March 24 - met with Greg Spill

Reviewed dept. notes - These included excluded + questionable
I provided Fred with list of B.I.G. and list of job
titles

Fred will contact other I.H.'s and notify VC employees
We anticipate completing categorization by late April.

April 27 - Talked w/ Fred Sabel

I will call him on May 11 to set up a final date
to do exposure categorization that week. He should
be ready by the end of that week.

May 13 - Met with Fred Sabel (Greg + Elsie)

Fred has categorized job titles/department H, M, L VL - 45 ppm
category added.
Dust exposures - low, see exposure categorization notes
Fred's work is essentially finished.

Done in accordance with the Federal Pursuant

to the

Case No. 4357

Case No.

Case No. 4357

Case No. 4357

Case No. 4357

COPOLYMER PLANT

Table 1.—Summary of Vinyl Chloride Measurements, by Job Classification, in Production Unit I, 1950-1959

Job Classification	TWA 8-hr ppm by Volume
Dry end operations	
Foreman	5
Shipping clerk	5-10
Utility	5-10
Packer	5-10
Assistant operator	5-10
Shift miller	5-10
Wet end operations*	
Foreman	10-50
Crew leader	10-50
Mechanic	50
Polymer assistant operator	120-385
Class 1 operator	120-385
Class 2 operator	120-385
Alternate	120-385
Spare	120-385
Dryer operator	95-350
Monomer still operator	50-85
Flash dryer operator	15-100
Tankcar unloader	100
Monomer transfer operator	100

* Excursions up to 4,000 ppm were measured in the wet end operations.

Table 2.—Summary of Vinyl Chloride Measurements, by Job Classification, in Production Unit II, 1953-1959
PVC + COPOLYMER

Job Classification	TWA 8-hr ppm by Volume
Foreman	5-10
Utility	10
Janitor	10
Handyman	10
Alternate	50-65
Blender-Packer	10-25
Tank and Wheel operator	125-140
Dryer operator	50-60
Polymerizer operator*	50-65
Clerk	5
Mechanic	50
Coagulator†	135-825

* Excursions up to 600 ppm were measured.

† Excursions up to 1,300 ppm were measured.

Table 3.—Summary of Vinyl Chloride Measurements, by Job Classification, in Production Unit I, 1960-1963

Job Classification	TWA 8-hr ppm by Volume
Dry end operations	
Foreman	5
Shipping clerk	5
Utility	5
Packer	5
Assistant operator	5
Shift miller	5
Wet end operations	
Foreman	10
Crew leader	10
Mechanic	25
Polymer assistant operator*	25-80
Class 1 operator*	25-80
Class 2 operator*	25-80
Dryer operator	25-85
Monomer still operator	25-45
Flash dryer operator	10-15
Tankcar unloader	25
Monomer transfer operator	25

* Excursions up to 500 ppm were measured.

Table 4.—Summary of Vinyl Chloride Measurements, by Job Classification, in Production Unit II, 1960-1966

Job Classification	TWA 8-hr ppm by Volume
Foreman	5
Utility	10
Janitor	5-15
Handyman	5-15
Spare	30-40
Alternate	20-50
Blender-packer	10-20
Tank and wheel operator*	140-240
Dryer operator	20-100
Polymerizer operator	20-50
Clerk	5
Mechanic	50
Coagulator	30-240

* For excursion levels see Baretta et al.¹⁷

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Vinyl Chloride

ACGIH TLV = 5 ppm

Ala. OSHA PEL = 1 ppm

Give Chemical Confidential Material Pursuant
To Protect and To
Enforce the provisions of the
Chemical Safety and
Hazard Investigation Act
Case No. 100-100000
Western District of New York

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