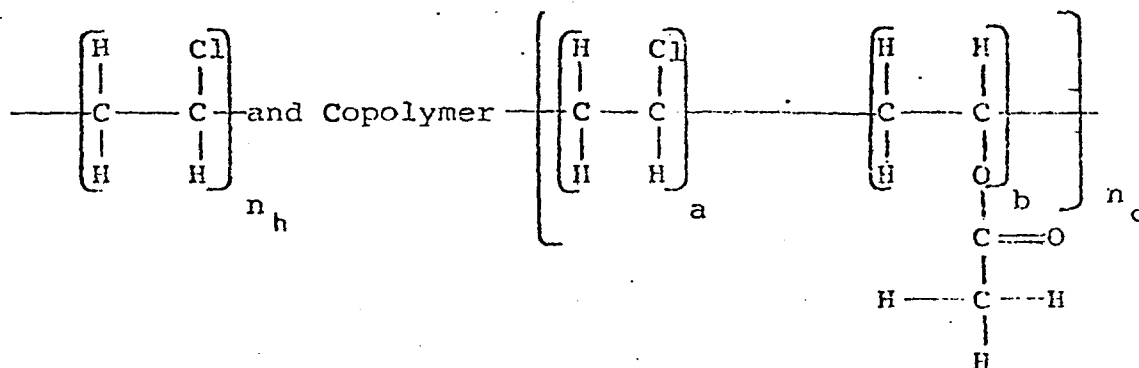


RIDER

Re: Maliko, et al vs. Union Carbide, et al

Interrogatory No. 1: (continued)



- n_h - The average number of vinyl chloride molecules in the homopolymer resin molecules.
- a/b - The ratio of vinyl chloride molecules to a molecule of comonomer.
- n_c - The average number of vinyl chloride - comonomer groups in the copolymer molecule.

Interrogatory No. 2:

The average monthly shipments of all resins containing vinyl chloride (which average was compiled from available documents) were as follows:

<u>YR</u>	<u>lbs/month</u>	<u>YR</u>	<u>lbs/month</u>
1960	No shipments	1964	6,083,300
1961	No shipments	1965	5,608,331
1962	No shipments	1966	6,099,975
1963	4,750,000	1967	4,599,998

RNW 0450

<u>YR</u>	<u>lbs/month</u>	<u>YR</u>	<u>lbs/month</u>
1968	5,841,660	1972	5,466,660
1969	6,166,640	1973	4,416,665
1970	6,416,600	1974	3,724,998
1971	5,841,660		

Interrogatory No. 13:

Essentially all vinyl resins were shipped to ATC in large closed aluminum boxes holding approximately 1400-1500 cubic feet of resin, which weighed approximately 35,000-50,000 pounds. This resin was repackaged by ATC in bags or bulk containers such as closed hopper trucks or closed rail cars. Most of the resin bagged (solvent and non-solvent) contained little or no residual vinyl chloride monomer.

Interrogatory No. 21:

The polyvinyl chloride suspension resin as well as all other vinyl resins shipped to ATC showed no known toxic effect on human tissue. Insofar as the interrogatory requests information regarding products other than those shipped to ATC, Union Carbide objects to the interrogatory as being irrelevant to the subject matter of the suit and, insofar as the interrogatory requests expert opinion, Union Carbide objects on the grounds set forth in the answer to Interrogatory 20.

Interrogatory No. 26:

Union Carbide assumes that this interrogatory is requesting the individual or collective conclusions contained in the list of References and Other Data Sources. Those conclusions can be determined by a reading of the papers by the plaintiffs, their attorney or their experts and it is improper, burdensome and harassing to request Union Carbide to set forth those conclusions.

Interrogatory No. 27:

Union Carbide objects to this interrogatory on the ground that it is improper because it is irrelevant to the subject matter of the Complaint, which is concerned with injuries to the plaintiffs allegedly sustained as a result of certain working conditions at ATC. Therefore, the working conditions at Union Carbide's plants are not subject to discovery. Notwithstanding this objection, but without waiving same, Union Carbide answers as follows. Union Carbide's practice has been to minimize employee exposure to any chemical. On the completion of the MCA acroosteolyses study Union Carbide subscribed to a target concentration of 50 ppm VCM maximum in the work space air. Analytical techniques to measure this level were not perfected until 1972 but best efforts were made to minimize exposure and to measure such exposure.

Interrogatory No. 29:

Union Carbide objects to this interrogatory on the same ground as it objects to Interrogatory 27. Notwithstanding this objection, but without waiving same, Union Carbide answers as follows:

Protective clothing was used as protection against corrosive or irritating chemicals as a matter of good practice since approximately 1940. It was not specifically provided for vinyl chloride or PVC protection.

Similarly self-contained breathing apparatus was provided for plant emergencies for all types of exposure. Hose fed respirators were provided for tank entry and other activities where oxygen might be deficient or acute chemical exposure could disable the employee. This too was considered good practice.

Specific respirator protection against low limits of VCM (over 50 ppm) was not started until 1974 at Texas City, Texas and South Charleston, West Virginia, plants. These respirators were generally hose fed half or full face masks.

Interrogatory No. 31:

In 1962 the American Congress of Governmental Industrial Hygienists (ACGIH) recommended that vinyl chloride exposure for workmen not exceed 500 ppm for an eight-hour time weighted average. Limits are set at concentrations believed to cause no adverse effect with repeated exposure.

In 1963 the ACGIH changed their recommendations to a 500 ppm threshold limit value.

On October 18, 1972, the Occupational Safety and Health Administration set the vinyl chloride exposure limit at a ceiling value of 500 ppm (1300 mg/m³).

In 1972 the ACGIH lowered its recommended vinyl chloride exposure limit to 200 ppm TLV. OSHA made no change in its standard.

On April 5, 1974, OSHA set its temporary Vinyl Chloride Standard limit at 50 ppm ceiling.

On April, 1975, the OSHA permanent standard became effective, lowering the vinyl chloride exposure limits to 1 ppm maximum for an eight-hour time weighted average or 5 ppm maximum for any period not exceeding fifteen minutes.

UNION CARBIDE CORPORATION MATERIAL THROUGH A.I.C.

MM LBS

MATERIAL SHIPPED	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963
POLYETHYLENE												
SEAL BINS	--	--	--	2.4	7.2	12.0	18.7	25.1	29.3	26.0	38.5	23.9
HOPPER CARS & TRUCKS	148.2	143.4	146.9	117.0	118.4	106.0	112.9	100.1	96.9	71.9	53.1	30.3
50# Bags	76.1	61.9	67.1	55.7	87.0	72.1	88.8	82.6	74.9	81.3	60.5	33.7
Cartons & Drums	51.9	45.9	39.3	35.7	40.1	19.8	23.6	20.1	22.6	16.5	18.5	15.9
Bulk to Bulk	14.2	6.5	5.3	6.6	3.2	5.7	5.8	0	0	0	0	0
TOTAL	290.4	257.7	258.6	217.4	256.6	215.6	249.8	227.9	223.7	195.7	170.6	103.8
POLYVINYL CHLORIDE												
HOPPER CARS & TRUCKS	12.3	12.3	28.4	31.0	39.2	34.4	27.6	20.6	21.6	17.6	16.8	11.6
50# Bags	32.4	40.7	37.2	39.1	37.8	39.6	42.5	34.6	51.6	49.7	36.2	41.4
TOTAL	44.7	53.0	65.6	70.1	77.0	74.0	70.1	55.2	73.2	67.3	73.0	57.0
POLYSTYRENE												
TOTAL	9.7	10.0	11.2	10.2	11.9	9.6	10.2	9.5	10.2	9.3	8.1	5.4
2,2-Bis(4 Hydroxyphenol)												
PROPANE												
HOPPER CARS & TRUCKS	37.3	24.3	0.4	-	-	-	-	-	-	-	-	-
50# BAGS	14.8	10.2	0.6	-	-	-	-	-	-	-	-	-
TOTAL	52.1	24.5	1.0	-	-	-	-	-	-	-	-	-
GRAND TOTAL	396.9	345.2	336.4	297.7	345.5	299.2	330.1	292.6	307.1	272.3	251.7	166.2

RNW 0454

CERTIFICATION

I certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

R. W. Whelan Jr

DATED: November 29, 1977

RNW 0455