



CHEMICAL MANUFACTURERS ASSOCIATION

October 6, 1988

To: Z. Bell
J. Barter
B. Dickson
S. Hearn
J. Norris

Re: Draft Letter to EPA

Enclosed, for your review and comment is the draft letter to EPA submitting industrial hygiene data from PPG and Dow.

Please call me with your comments by October 11, 1988 so I can submit these data to EPA by our mid-October target date.

Very truly yours

A handwritten signature in dark ink, appearing to read "E. Moran", is written over a faint, circular stamp.

Elizabeth D. Moran, Ph.D.
Manager
Vinylidene Chloride Program



CHEMICAL MANUFACTURERS ASSOCIATION

DRAFT

September 28, 1988

Michele Bree
Chemical Engineer
Chemical Engineering Branch (TS779)
U.S. Environmental Protection Agency
410 M Street, SW
Washington, DC 20460

Dear Ms. Bree:

In February 1988, you requested additional information on work place exposure to vinylidene chloride (VDC) from the VDC manufactures. Specifically you were interested in information such as the number of sites, the number of producers and users, the number of employees at manufacturers' facilities and the potential exposure levels at such facilities.

Much of the information regarding sites and companies producing or using VDC was provided in our earlier correspondence with the Office of Air Quality Planning and Standards (OAQPS). Copies of those earlier submissions, including CMA survey data, are enclosed. There are only two manufacturers of VDC -- The Dow Chemical Company and PPG Industries Inc. Enclosed are statements from each producer regarding the number and type of employees and the potential workplace exposure. Workplace exposure is kept far below the ACGIH TLV of 5 ppm.

Technological improvements are continually being made to reduce workplace exposure. For example, improvements in ventilation, closed loop sampling systems, purging of lines to a collection device, and technology to recover and contain unreacted monomer in processing applications have all helped reduce potential exposure to VDC. Ventilation has been installed in loading and drumming operations to reduce potential exposure in those operations. Where non-routine tasks have the potential for higher exposure levels, respirator protection is provided. Annual training and safety reviews are conducted with employees in the various facilities with regard to chemical hazards. Material safety data sheets (MSDS's) are available to employees, and hazard communications programs have been in place for many years. Respirator fit testing is provided for employees who use respirators in the normal course of their work. Improvements continue to be developed and implemented.

In February the OAQPS concluded that testing of VDC was not warranted at this time, based in part on emissions data submitted by CMA. For this reason OAQPS withdrew the request to the Test Rules

Development Branch for a test rule on VDC. (A copy of the letter dated February 18, 1988 from Nancy B. Pate to Dr. Robert Romano is attached.)

CMA believes that the record does not support the proposed test rule for VDC. This belief is based, not only on the low levels of potential exposure, but also on the large number of existing studies of VDC. The many studies addressing both potential oncogenic effects and pharmacokinetic and metabolic effects were submitted by CMA for inclusion in the rulemaking record. In view of these studies the Agency cannot conclude that the record contains insufficient data upon which the effects of manufacture or processing can reasonably be determined (as it must under Section 4(a) (1)(A)(ii) of the Toxic Substances Control Act (TSCA)). Nor can the Agency conclude that the proposed testing will significantly improve its ability to assess potential human risks arising from manufacture and processing (as it must under Section 4(a) (1) (A) (iii) of TSCA). Finally, the evidence of minimal exposure, the information regarding inter-species metabolic differences, the negative oncogenicity test data and the negative epidemiology data demonstrate that EPA may not make the requisite "may present" finding for VDC (as it must under Section 4(a) (1) (A) (i) of TSCA). For all these reasons, we believe that the Agency would be correct in withdrawing the proposed test rule.

We hope that the enclosed information is sufficient for your review of the potential for workplace exposure. If any questions remain, please do not hesitate to contact us.

Very truly yours,

Elizabeth J. Moran, Ph.D.
Manager
Vinylidene Chloride Program

SL 061880



DOW CHEMICAL U.S.A.

2020 WILLARD H. DOW CENTER
October 5, 1988

WILLARD H. DOW CENTER
MIDLAND, MICHIGAN 48674

RE: INDUSTRIAL HYGIENE INFORMATION ON VINYLIDENE CHLORIDE

At the request of EPA personnel, Dow Chemical facilities which either manufacture or process vinylidene chloride (VDC) were contacted to obtain information regarding potential occupational exposures to VDC.

Approximately 130 personnel at Dow were identified from 1987 surveys as having the potential for occupational exposure to VDC through its manufacture or processing. These employees are distributed in the following job assignments:

TABLE 1

Number of Employees with Potential
Exposure to VDC at Dow Chemical
Manufacturing or Processing Plants
(1987 Survey Data)

Operators	41
Control Room Personnel	24
Supervision	34
Maintenance	26
Laboratory Personnel	3

Dow Chemical uses the American Conference of Governmental Industrial Hygienists' (ACGIH) Threshold Limit Value (TLV) as an 8-hour time weighted average (TWA) industrial hygiene guide (IHG). The ACGIH TLV

for VDC is 5 ppm (8 hour TWA) with a 20 ppm STEL. Potential 8-hour TWA exposures for VDC are provided in Table 2. Exposures reported here should be considered as potential in that respiratory protection in the form of cartridge respirators or breathing air units were worn during many of the sampling activities reported. Values reported in parentheses indicate the minimum analytical sensitivity for that particular sample series. Data reported are from 1987 industrial hygiene surveys.

TABLE 2

Employees' Potential 8-hour TWA
Exposure to VDC, 1987 Surveys
(parts per million, ppm)

<u>Facility</u>	<u>No. of Samples</u>	<u>Mean</u>	<u>Range</u>
Plant A	26	<0.5	ND (0.04) - 3.5
Plant B	4	<0.3	ND (0.08) - 1.1(a)
Plant C	11	4.4	<0.01 - 21(b)
Plant D	41	2.21	ND (0.01) - 31

- (a) The two highest samples from this survey, 13 and 21 ppm (8-hour TWA) are based on short term exposures that occurred during the addition of chemical inhibitors. The plant plans to revise this addition system to reduce the exposure during this short term job. Currently, respiratory protection is worn to reduce exposures. If the two highest samples are excluded, the mean becomes 1.3 ppm with a range of <0.01 - 3.7 ppm.
- (b) Two high values were caused by unusual conditions in the plant. A 27 ppm value was caused by upset conditions in the plant, not normal operation. A 31 ppm value was caused by a plugged vent line on a filter. The filter could not be vented during a filter change. Filters are changed every 30 to 60 days. Respiratory protection was worn during these periods. If these two values are excluded, the mean becomes 0.84 ppm with a range of ND (0.01) - 3.3 ppm.

Certain non-routine tasks may have the potential for higher exposure levels. Respiratory protection is provided to serve as personnel protection when non-routine tasks are performed and the potential for higher exposure levels exists.

Many technological improvements have been made in the last 20 years to reduce exposure. The use of ventilation, closed loop sampling systems, purging of lines back to a collection device, and technology to recover and contain unreacted monomer in processing applications have helped reduce exposure to VDC. Ventilation has been installed in drumming operations to reduce personnel exposure in that operation. Improvements continue to be explored and implemented.

One location reports that there are three continuous air monitoring systems in the plant which are designed to alarm when the VDC concentration exceeds desired levels. A total of 41 locations in that plant are monitored with Bendix gas chromatographs. The units are checked daily by an automatic calibration unit employing a standard gas cylinder. These units are present primarily for the detection and warning of leaks rather than for personnel monitoring (industrial hygiene). The presence of such warning systems greatly reduces the likelihood for overexposure of employees.

Annual training and safety reviews are conducted with employees in the various facilities with regard to chemical hazards. Material safety data sheets (MSDS) are available to employees and hazard communication programs have been in place for many years. Respirator fit testing is provided for employees who use respirators in the normal course of their work.