

A G E N D A

Japanese PVC Association

July 9, 1974

1. Operation Environment

(1) OSHA Hearings - Proposed Permanent Standard Levels

(June 25 - July 12 (?), 1974)

Present temporary - 50 ppm (v/v) ceiling

Proposed permanent - "1 ppm ceiling"

SPI recommendations -

Polymer Plants

Oct. 5, 1974 40 ppm ceiling 25 ppm TWA

Oct. 5, 1975 25 ppm ceiling

Oct. 5, 1976 25 ppm ceiling 10 ppm TWA

Monomer Plants

Oct. 5, 1974 25 ppm ceiling 10 ppm TWA

Oct. 5, 1975 10 ppm ceiling 5 ppm TWA

In each case, workers would be required to wear practical and effective respiratory protection when vinyl chloride levels exceed the applicable ceiling value.

(2) Emergency Situations

There is no single answer to the questions as to how much and where - potentially the total amount contained in the vessel.

(3) Regular Operations

Old plants may lose 3% of VCM charged.

New plants may lose less than 2% of VCM charged.

~ 25% - polymerization area

~ 25% - in the slurry handling

~ 25% - in the drier

~ 25% - fugitive losses

(4) B. F. Goodrich has developed a Hydraulic Reactor Cleaning System that has reduced polymerizer entry dramatically. It is available for license at modest cost.

(5) Exposure levels of our poly operators have been reduced substantially since installation of portable and fixed VCM monitoring systems. These still vary widely from day to day, plant to plant, and location to location. Excursions above 50 ppm have been reduced, and time below 10 ppm has been increased. Averages have been cut in half, but are now leveling out. It will be very difficult to achieve and maintain a TWA of 10 ppm in older plants.

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(6) Safety Respirators

This is an unresolved problem. There are places for many varieties, and management should be allowed maximum flexibility in judgment to suit the occasion and the available equipment.

(7) VCM Levels in PVC Processing Plants

When closed PVC containers are opened, significant VCM can be found in the headspace, depending on the residual VCM in the polymer, the temperature and time of storage. Further VCM releases can occur in the high intensity mixers. It is advisable to warn customers of this possibility. We have found very little VCM exposure in other work areas of PVC processing plants.

(8) Government Actions

The OSHA law prescribes the ability to regulate and enforce by inspections. Industry is required to comply, seek variances, pay fines or shut down.

(9) Union leaders have been quite vocal in the VCM matter.

2. Health Control

(1) The seven B.F. Goodrich angiosarcoma cases are all at one plant.

(2) Many people have worked only a short time in VCM exposure areas and gone on to other employment. These are hard to find.

(3) Various estimates have been made, but the figures are approximately:

1,500 VCM manufacture
5,000 PVC manufacture
20,000 to 40,000 - PVC processing
700,000 - PVC product fabrication

(4)&(5) No data of this type is absolute.

The words in the Temporary Standard have not been refuted. There is no doubt that in some mice and some rats, exposed to as low as 50 ppm of VCM for six to 12 months, there has been observed angiosarcoma of the liver and an increase in other neoplastic tumors.

Many animal exposure studies are continuing in both the USA and Europe, and it will be at least two to three years before the results of these studies will be available.

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(4)&(5) - cont'd

Meanwhile it is evident that the VCM/PVC industry must make every effort to reduce exposure level of its people to the lowest feasible level and to reduce the residual VCM in PVC resin to negligible levels as soon as possible.

Attached statements to the OSHA hearing
Society Plastics Industry
B.F. Goodrich Chemical Company
Tenneco

3. Food Packaging and Others

- (1) We have no information on planned actions by FDA, but we are concerned that they will include controls on potable water pipe. The only answer is to reduce the residual VCM in PVC resins.
- (2) Fabricators are concerned and will demand very low residual VCM in the resins and compounds that they buy.
- (3) Food product manufacturers will abide by the law and regulations when they are available.
- (4) PVC is not an important food packaging material in the USA, except for red meat wrap.
- (5) It will be some time before PVC liquor bottles will be considered again in the USA.
- (6) There has been no FDA action to date on cosmetic/pharmaceutical bottles made from PVC.
- (7) ISO extraction conditions for potable water pipe are made at 130°F for 72 hours. Such a test seems likely for VCM in the future.
- (8)&(9) There are wide ranges in residual VCM content of U.S. commercial resins today. Emulsion resins are the lowest, most being below 20 ppm and many having no detectable content. Suspension resins vary from no detectable for some to as high as 1,000 ppm. Copolymer resins also vary from no detectable to as high as several thousand ppm. The industry has announced a goal through SPI testimony of less than 100 ppm by 1977.
- (10) Consumer groups will be testifying at the OSHA hearings in Washington this week.
- (11) Covered above.

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4. General Environment

- (1) EPA has publicly stated that they find no cause for panic based on their ambient air sampling of the past three months. We expect, they will establish regulations after OSHA makes a ruling, unless forced by activist groups. Extensive reductions in VCM emissions by plants will be required ultimately, and industry is working towards this goal.
- (2) There is no evidence for build-up of VCM in the atmosphere, so it must be oxidized with light fairly rapidly.

5. Analytical Methods

- (1) L. B. Crider VCM Monitoring Report
- (2) E. DeCapita VCM in PVC Report
- (3) E. DeCapita VCM in Alcohol Report
- (4) EPA Procedure for Ambient Air
- (5) What do you have?

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