

What's ahead for vinyl makers: Slowdown or end of the road?

Uncertainty beclouds industry as OSHA weight testimony on proposal for sharp cut in VCM emissions within plants

Scores of chemical and plastics companies will be on tenterhooks during the next few weeks or months while Secretary of Labor Peter Brennan and his associates are deciding what safety standards will be required in U.S. plants that produce vinyl chloride monomer, process it into polyvinyl chloride resins and mold those resins into plastic pipe, phonograph records, sports car tops and vinyl flooring.

The immediate question: How much VCM gas should be permitted as an air contaminant in all those plants? Until this question is resolved, management people in this \$65-billion/year business will not know whether to invest additional capital in plant expansion, research and marketing programs. Moreover, their suppliers will not be able to project how much ethylene, chlorine, plasticizers and molding equipment will be needed.

In last week's public hearing in Washington, it became clear that this vinyl factory hygiene matter has become the biggest and most controversial case that has yet been faced by the Labor Dept.'s three-year-old Occupational Safety and Health Administration. Because some vinyl plant workers have contracted a rare and fatal cancer of the liver (angiosarcoma), OSHA in April issued a temporary regulation that the VCM concentration in the air in such plants must not exceed 50 parts per million. Now the agency is proposing as a permanent rule that the limit be set at "no detectable level," which in practice would mean a maximum of only about 1 ppm.

Costs, Jobs, Health: Such an "excessively and unrealistically restrictive" standard is not technologically feasible, and its adoption "would shut down the industry," according to Anton Vittone, president of B. F. Goodrich Chemical Co. and chairman of a special PVC standards committee set up by the Society of the Plastics Industry.

As the industry's principal spokesman in last week's hearing, Vittone proposed that the present temporary emergency standard of 50 ppm. for PVC plants be lowered in several stages to 25 ppm. by Oct. 5, '75, with further imposition of a time-weighted average limit of 10 ppm.

Standards for VCM production, he said, could be more restrictive—10 ppm. by Oct. '75, and a time-weighted average maximum of 5 ppm.

Meeting these suggested standards would be costly and difficult, Vittone said. "These proposals represent ambitious, difficult levels of operational exposure dependent on large expenditures of money, reduced capacity, and the development of technology not currently in hand."

But trying to meet the no-detectable-level standard would be prohibitively expensive if not impossible, he warned. Putting OSHA's proposed regulation into effect, he added, "could displace not only the 6,500 VCM and PVC production workers but also hundreds of thousands of other employees in companies that use PVC."

Cutbacks and Renovation: A contrary view was presented in a Labor Dept. report asserting that the no-detectable-level standard's only over-all impact on the PVC industry would be curtailed production. The report's authors conceded, however, that some "marginal" companies might need federal loans to finance the plant alterations necessary to meet the more stringent standard.

That standard was defended at the hearing by Daniel Boyd, director of OSHA's Office of Standards Development—where OSHA staff members will analyze the exhaustive and conflicting testimony given by the 147 scheduled witnesses during the five-day hearing.

Boyd emphasized that he regards the no-detectable-level standard as only a proposal, but added: "It represents our best judgment based on the information available to us on May 10. We do not claim to know all the answers to all the problems associated with employee exposure to VCM. I am . . . asking for your help, your input, so that we can promulgate a standard based on the best and most recent information available."

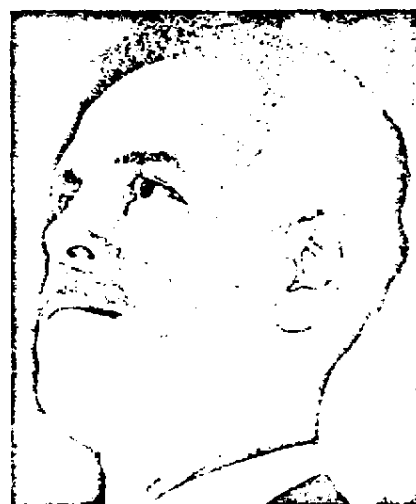
Gas Masks, Chromatographs: Under the Labor Dept.'s proposal, the first step for employers would be to reduce VCM emissions by adopting new engineering controls and production methods "as soon as feasible," Boyd explained that



OSHA'S BOYD: 'As soon as feasible' will depend on cost and available technology.



SPI'S VITTON: No-detectable-emission standard 'would shut down the industry.'

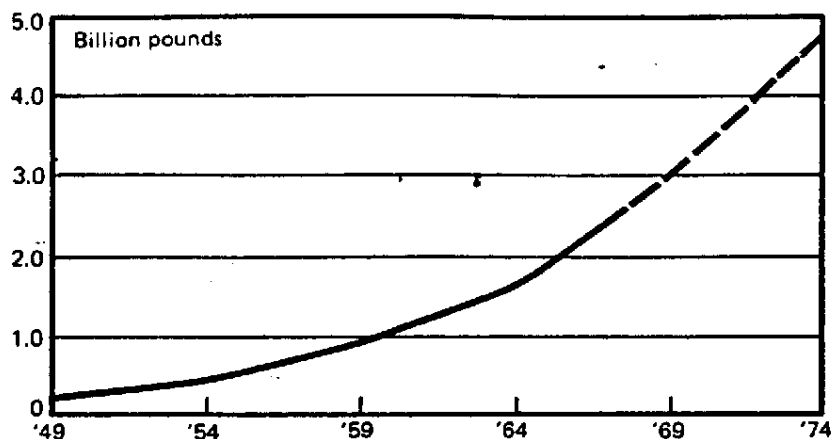


URW'S BOMMARITO: 'The medical facts are in, and the problem is now political.'

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PVC success story: 25-year U.S. growth averages 12.74% a year



Sources: U.S. Tariff Commission; Society of the Plastics Industry; CW estimate for '74.

feasibility refers to both technological and economic considerations: "On the one hand, does the technology exist that would allow the employer to achieve compliance? And on the other, What are the costs associated with the application of these technologies?"

If the very low level of VCM concentration could not be attained immediately, employees would be required to wear air-filtering devices known as continuous-flow and demand respirators. Commented Boyd: "We recognize that respirators are not popular with employees and that employees may have difficulty wearing them 40 hours a week. However, in balancing the feasibility of engineering controls and work practices, respirators and the hazards associated with VCM, we feel that respirators are a necessary temporary means of avoiding employee exposure to VCM."

As to in-plant monitoring, OSHA shied away from designating any specific techniques for measuring VCM concentration in the air. "But a gas chromatograph is fully capable of measuring VCM at the levels required," Boyd stated.

Methods Are Optional: OSHA's proposal is essentially only a performance standard, Boyd pointed out. "We recognize," he said, "that each employer should be allowed to utilize the engineering controls and work practices that are best suited for his plant. However, the proper application of ventilation systems and further enclosure of exposure sources appears to be a rational approach. It is entirely possible that a reduction of the 10-12% unreacted monomer content, which often occurs at the polymerization

stage, will reduce some of the VCM exposure problems associated with PVC."

More aggressive support for the no-detectable-level proposal came from organized labor. Union officials denied that such a standard would necessarily result in any extensive shutdown of PVC plants, but declared that even the loss of many jobs would be preferable to continued exposure of employees to higher VCM concentrations.

Peter Bommarito, president of the United Rubber Workers and chairman of AFL-CIO's health and safety committee, demanded Congressional investigation of industry efforts to stir up "hysterical" opposition to OSHA's proposal.

"Today, this nation will be blackmailed," Bommarito averred. "Management will tell you that the proposed standard—which they assume without hard data is not feasible—means an end to 1.6 million or more jobs and national disaster. This country survived for nearly 200 years without PVC and we can survive in the future without it."

Bommarito suggested the possibility of a health hazard that had not previously been discussed in connection with PVC: the chance that even a trace of VCM in a pregnant woman's bloodstream might damage the fetus.

Evaluating the Evidence: Bommarito asserted that "the medical facts are now in, and the problem is now in the social and political arena." But industry representatives said that the medical and scientific data are far from conclusive.

In fact, one industry spokesman contended, it's conceivable that OSHA's present temporary standard of 50 ppm.

may be entirely adequate. Researchers may never know whether it is or not, he continued, because it takes 11-20 years for angiosarcoma to develop, and so it's possible that the liver ailments turning up now may have been initiated before manufacturing operations provided the present degree of protection for workers.

Nevertheless, OSHA is expected to rely to a considerable extent on data developed by Director Cesare Maltoni of the Istituto Di Oncologia, a tumor research institute, in Bologna, Italy, and by scientists at Industrial BIO-TEST Laboratories (Northbrook, Ill.). The work at Bologna was sponsored by several large European producers of VCM; the studies at Northbrook were commissioned by the Manufacturing Chemists Assn. In both cases, the researchers have reported that angiosarcoma was contracted by rats and mice that had been exposed to VCM at various levels down to 50 ppm.

"On the basis of what facts we have been given," testified Dr. Herman Kraybill of the National Cancer Institute, "VCM appears to be a potent hepatocarcinogen. If man responds to low-level exposure to VCM as has the rodent, a low-level continuous exposure of 50 ppm. for man would have a high probability for inducing liver cancer."

Deciding on Dickey Data: Jerome Heckman, general counsel for SPI, summed up the industry feelings as to the inadequacy of present scientific information: "Many of these decisions will necessarily have to be based on the rules of probability rather than irrefutable fact. Much of the scientific data obtained by researchers to date is quite inconclusive. A great deal of data remains to be acquired and evaluated. At this precarious state of our knowledge, we believe that misplaced reliance on mere suspicions rather than proved data, or precipitous and emotional reaction to such incomplete information, together with a narrowly construed interpretation of interests, could lead to major economic consequences."

As the hearing ended, Washington observers were predicting that OSHA would stick with the no-detectable-level limit, with some leeway in timing for older plants to install the necessary safeguards.

Meanwhile, the vinyl industry is operating at close to 100% of capacity, and numerous plant expansion projects are under way. If producers can meet the new standards without an exorbitant increase in manufacturing costs, it would seem reasonable to expect PVC demand to keep right on growing at 10-15%/year (chart, above).