The vinyl-chloride fight is on

Chemical companies are filing objections to the Occupational Safety and Health Administration's proposed permanent exposure standards for vinyl chloride (*CW, May 15, p. 25*). But despite the outlook for prolonged hearings and accumulated data from many studies, OSHA is still hoping to adopt the standards, which call for "no detectable level" of VCM, by October.

Calling the proposed standards "impractical," "unachievable" and "a disaster for the industry," producers of vinyl chloride and polyvinyl chloride are basing objections on three main points. These are, they allege, the unavailability of manufacturing technology to eliminate VCM completely, the economic impact on the industry (they contend that plants will be closed, jobs and markets lost) and lack of data to support the new rules.

But industry chances of changing the standards appear to be getting worse, if last week's New York Academy of Sciences meeting on toxicity of VCM and PVC is any indication. Charges of blood, liver and respiratory abnormalities resulting from exposure to vinyl chloride were added to the known cases of angiosarcoma.

Standard Setting: The new standards proposed by OSHA define "no detectable exposure level" as being determined by devices capable of detecting concentrations of 1 ppm. with an accuracy of 1 ppm., plus or minus 50%. "That's going to be tough to achieve," says Daniel Boyd, director of the agency's standards development office.

But Boyd observes that a combination of engineering controls, work practice methods and respirators could be used in complying with the rules. The standards would put plants in three categories: those at which "feasible engineering controls" would be used to reduce exposure below detectable levels, those at which respirators would supplement work practice and engineering changes, and those at which respirators alone would be used because "no feasible engineering control or work practice method can be instituted immediately."

But industry is saying that these categories are not practical. Reason: there is no technology available to completely eliminate exposure, so there has to be reliance on respirator systems. And these, industry adds, are dangerous and won't work. "Maybe we can build a new plant to approach the proposed standards," says Harry Connors, general manager of Diamond Shamrock's plastics division, "but we can't adapt existing plants to it."

More Studies: What choice is left to industry? The answer could come from a series of economic impact studies that are being undertaken.

One will be done by OSHA, although a contractor to do the work has not yet been hired. The Society of the Plastics Industry has hired Arthur D. Little to study the economic impact of the new regulations. That study could be ready within two months.

In formulating its VCM rules, OSHA relied heavily on evidence of development of angiosarcoma in mice at 50-ppm. exposure during tests sponsored by the Manufacturing Chemists Assn. at Industrial Biotest Labs. And now those labs and those of Cesare Maltoni, in Bologna, Italy, are going to run further tests on mice at 25, 10 and 5 ppm. But the industry contends that much of this data doesn't relate to human exposure. Connors cites cases of 17 workers at Diamond Shamrock's Deer Park, Tex., plant who have had 20 years' exposure, he says, without damage.

Also under investigation is emissions of vinyl chloride from manufacturing plants. The Environmental Protection Agency maintains that there are 6% VCM losses from PVC plants and concentrations of 1-2 ppm. in air outside plants. Several PVC makers have been installing ventilation systems as protection for workers. Closing this outlet for air pollution reasons will prove an added hardship for the already-hard-pressed makers of VCM and PVC.

And if limits are put on the amount of unreacted VCM on PVC resins, as is being considered by EPA, the industry may find it has "nowhere to go," as one company spokesman put it.

Dart takes the plunge

Improved market conditions have triggered one polypropylene expansion, and more may be in the works.

Dart Industries, which had been considering expansion for some time (*CW, Apr. 11, '73, p. 15*), said last week it will build a 150-million-lbs./year polypropylene plant near Houston in a joint venture with El Paso Products, a subsidiary of El Paso Natural Gas. Startup is expected in '76; cost was not disclosed.

The partnership already operates a 130-million-lbs./year polypropylene plant in Odessa, Tex. That unit will be debottlenecked to up capacity by 10 million lbs./year, according to Dart's chemical group president, Ralph M. Knight.

Knight said the decision to build a new plant was based on forecasts that U.S. polypropylene demand will double, to about 6 billion lbs./year, by '80. Recent increases in prices of the material, he adds, should offset higher costs.

Site for the new plant will be 550 acres in Bayport, Tex., recently acquired by the partnership from Friendswood Development. Knight said the site was chosen because it is close to other petrochemical complexes and to shipping facilities.

Polypropylene is tight, although not as scarce as some other resins. Prices are firm, and industry observers say additional capacity is needed, since only Hercules and Amoco Chemicals have major U.S. expansions now in the works.

Shortages won't vanish

Shortages of vital feedstocks will be a major and long-lasting problem for the plastics industry, Amoco Chemicals' environmental coordinator, Victor A. Denslow, said last week at the annual technical conference of the Society of Plastics Engineers in San Francisco. The shortages, he predicted, will last at least three years, perhaps 10.

Denslow maintains that new feedstock capacity has been discouraged by low rates of return on investment ("3-5% in recent years, sometimes almost zero").

In addition, he says, environmental considerations have limited the availability of energy and feedstocks. He cites these examples: nuclear plants, which could free hydrocarbons for chemical use, have been held up; the Alaska pipeline has also been delayed; Santa Barbara channel oil has not been available; and sulfur and strip-mining restrictions have cut the availability of coal.

All these factors, Denslow notes, will result in reduced availability of plastics and higher prices. "We can't yet assess the effect of higher prices on demand for plastics," he adds, but he says that it will probably lead to a drop in demand.

Conference leader John J. Haher, general sales manager for Borg-Warner Chemicals, emphasized that "the plastics industry must prove to the oil companies that plastics represent a favorable return on investment to their refineries."

To get a share of available crude oil, he added, plastic producers will have to pay much higher prices.

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