

Vinyl Chloride Price Wilts Under Fire

Drop in price of monomer—to 7½ cents—is marketing device; costs not involved directly

The latest reduction in the price of vinyl chloride monomer—to 7½ cents a pound—reflects competition growing in the industry at least in part because of overcapacity. Industry sources feel that the new price is not related directly to cost. Rather, they say, it is strictly a marketing device.

The price of the monomer has been as high as 11 cents a pound this year. Until the latest reduction, it had held at 8½ to 9 cents for several months.

As a consequence of the new monomer price, the smaller producers of polyvinyl chloride will likely try to win some new markets. But the big producers will probably make price concessions to meet the competition. This includes even the granting of price reductions on monomer being sold under contractual agreement. Just how long this new low price will remain effective is anybody's guess. But with the excess capacity for monomer, the price might stay down for some time.

Vinyl chloride is used principally to make polyvinyl chloride and, to a

lesser extent, to make copolymers with vinyl acetate or vinylidene chloride. Polyvinyl chloride is used to make film and sheet, flooring, wire and fabric coating, phonograph records, and garden hose among other things.

PVC production in 1961 is expected to reach 950 million pounds. Capacity last year was about 1.4 billion pounds. PVC, which is also beset by excess capacity, has been selling recently at 16½ to 17 cents a pound, down from 23½ cents. Thus, what the new monomer price will do to the price of the polymer is difficult to predict.

Vinyl chloride is made mostly from either of two starting materials: acetylene or ethylene. Which one is chosen is generally decided on the basis of economics, including plant site and supply and cost of raw material.

The so-called ethylene process, more widely used than the acetylene, is really an ethylene dichloride process. Here, ethylene dichloride is vaporized, dried, and reacted in the presence of a pumice or charcoal catalyst. Tem-

perature is between 900° and 950° F., pressure is 50 p.s.i.g. Hydrogen chloride is removed, and the vinyl chloride is condensed and stored.

In the acetylene process, acetylene reacts exothermically in the vapor phase with anhydrous hydrogen chloride in the presence of a mercuric chloride catalyst to yield vinyl chloride. Sometimes a combination acetylene and ethylene process is used. Under these circumstances, by-product hydrogen chloride from the ethylene process is reacted with acetylene to make additional monomer.

Vinyl chloride is frequently converted to polyvinyl chloride near the point of production. As a consequence, many PVC makers produce their own monomer. Merchant suppliers of monomer can less easily gear their production to a continuous user. However, because vinyl chloride monomer is not often bought on a "spot" basis, monomer merchants can alter production as the need arises.

Also complicating monomer capacity figures is the ability of a manufacturer to use his monomer unit, slightly modified, to make other products, such as glycol. Thus, capacity figures for the industry can and do change abruptly. Changeability of capacity, general overcapacity, competition from other plastics, and foreign competition, principally from Japan, all have played a part in exerting pressure on the price of the monomer.

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Vinyl Chloride Monomer Capacity Nears 2 Billion-Pound Mark

Producer	Annual Capacity (millions of pounds)	Producer	Annual Capacity (millions of pounds)
Allied Chemical Moundsville, W.Va.	100	Goodrich Chemical Niagara Falls, N.Y. Louisville, Ky. Calvert City, Ky.	240
American Chemical Watson, Calif.	25	Goodyear Niagara Falls, N.Y.	70
Cumberland Chemical Calvert City, Ky.	60	Monochem (Borden-U.S. Rubber) Geismar, La.	150*
Diamond Alkali Deer Park, Tex.	50	Monsanto Texas City, Tex.	150
Dow Chemical Freeport, Tex. Plaquemine, La.	200*	Tennessee Gas Transmission Houston, Tex.	200*
Ethyl Corp. Baton Rouge, La. Houston, Tex.	210*	Union Carbide South Charleston, W.Va. Texas City, Tex.	260
General Tire Ashtabula, Ohio	30	U.S. Rubber Painesville, Ohio	70
		Total	1815

Source: C&EN estimates

* Expansions to be completed by 1962.

Commerce Probes Red Engineering Deal

Hydrocarbon Research's actions in design of Romanian refinery and petrochemical plant are under study for possible export violations

The Government has issued a consent order that temporarily requires Hydrocarbon Research, Inc., to get prior specific approval of the Commerce Department's Bureau of Foreign Commerce before exporting any technical data and commodities of U.S. origin to the Sino-Soviet bloc and Cuba. The order stems from the New York engineering firm's 1959 agreement with the Romanian government to design an oil refining and petrochemical plant in that Red satellite.

The order is effective for 90 days, pending further investigation by the Department of Commerce. It makes no specific charges against Hydrocarbon Research.

The Bureau of Foreign Commerce wants to know whether, in fulfilling its contract, HRI violated the embargo on exporting unpublished technical data of U.S. origin to the Reds. Hydrocarbon Research says it has not done so. The company claims it has adhered strictly to the job procedure that it reviewed specifically with Commerce before undertaking the Romanian job. But HRI has agreed to the restraining order while the Bureau of Foreign Commerce continues its study. Mechanical testing is under way at the plant, and operations will start shortly.

Under the law, any unclassified technical data that are published and generally available to the public may be exported to anybody under a general export license. But exportation of any U.S. unclassified, unpublished, or not generally available technical data to Communist-bloc nations and Cuba is prohibited without prior approval by Commerce.

Also, since June 1959, the Government has placed additional restrictions on certain petroleum refining and petrochemical processes. Among them are alkylation, aromatization, cracking, dehydrogenation, desulfurization, halogenation, hydrogenation, isomerization, nitration, oxidation, oxo process, ozonolysis, polymerization, reduction, and reforming, when use of unpublished U.S. technical data is involved.

The Export Control Act deals solely with technical data of United States origin. Classified technical data cannot be exported, but this aspect is not in Commerce's bailiwick.

The Romanian government initiated contract negotiations for the plant with a number of U.S. engineering firms, the Bureau of Foreign Commerce says. And according to Hydrocarbon Research, the Romanians approached at least one West German and one British company.

The U.S. firms in turn approached the bureau for approval of a specific license to export the necessary unpublished technology. But all were turned down on the basis that to export this know-how behind the Iron Curtain would not be in the best interest of the United States.

But, BFC adds, Hydrocarbon Research did not inquire about a specific license to export unpublished technical data. Instead, the company approached the bureau on the basis of the propriety of the job's being done by exporting published technical data, plus using data not of United States origin.

The whole case rests on the Government's ability to prove that U.S.-origin unpublished data were, in fact, used to fulfill the contract. With Romania behind the Iron Curtain, proving this will be difficult. But the Bureau of Foreign Commerce, under pressure from other engineering firms, has watched the project carefully since its inception. It has decided that the results of the investigation to date warrant close scrutiny of all Hydrocarbon Research's prospective transactions with the Sino-Soviet bloc and Cuba.

This means that the export restraining order also applies to HRI's affiliates, Hydrocarbon Engineering, Paris, France, and Hydrocarbon Mineraloel, Dusseldorf, Germany, and their officials and agents. It requires the Hydrocarbon group to obtain specific approval from the bureau before engaging in any future transactions involving the use of U.S.-origin technical data, published or unpublished, or any com-

modity in the Sino-Soviet bloc or Cuba.

Violators of the Export Control Act face stiff consequences. The Commerce Department can revoke all export privileges and hence put violators out of the export business. From there, the case could go to the Justice Department for criminal action. Conviction here carries up to a \$10,000 fine, or a year in prison, or both, for each violation.

No Change for NPFI

Budget cut won't alter National Plant Food Institute's program

Rumors that the National Plant Food Institute is going to alter its program of services during fiscal 1961-62 have been squashed by John W. Hall, newly elected chairman of NPFI's board of directors. The rumors apparently started as a result of some reduction in the association's budget, according to Mr. Hall, president of the Potash Co. of America.

The budget reduction, however, will not impair the association's program. It will not result in any de-emphasis of its traditional support and cooperation with land-grant colleges, agricultural workers, and others concerned with a sound agriculture. Mr. Hall told members attending the association's convention at White Sulphur Springs, W.Va. He said that NPFI will continue its work in four major fields: legislation and administrative work with federal and state agencies; publicity and public relations; market promotion; and maintaining liaison and service to its members.

According to Mr. Hall, some reduction in personnel will be necessary under the smaller budget. However, the association's "regional approach to the problems of the industry and agriculture will be continued, largely within the present operational framework," he said.

New Officers. NPFI also elected new officers during its three day convention. Besides new board chairman Hall, Elwood I. Lentz, vice president and general manager of Western Phosphates, was elected vice chairman of the board. Re-elected officers, all of Washington, D.C.: Paul T. Truitt, president; W. R. Allstetter, vice president; Louis H. Wilson, secretary, and William S. Ritnow, treasurer.