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What's ahead for PVC

A review of the history and careful study of the present can help in predicting the future of polyvinylchloride (PVC) in the U.S.

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POLYVINYLCHLORIDE (PVC) ranks second after LD-Polyethylene and accounted for 16% of the 1976 U.S. plastics industry consumption. Today, general purpose resin —homo and copolymer by aqueous suspension polymerization and homopolymer by bulk or mass polymerization— accounts for almost 90% of the PVC market. About 14% of the general purpose resin is by bulk polymerization.

From 9-10% of the PVC market is for dispersion or plastisol resins. Solution and latex PVC is less than 1% of the total market.

The monomer. Vinyl chloride monomer (VCM) has only a few minor markets other than PVC. Current nameplate VCM capacity is about 3084 M metric tons, Using a 90% operating capacity and subtracting a small export market, about 2494 M metric tons are available for conversion into PVC.

In the 14 VCM plants operated by 10 domestic producers, approximately 40% of the monomer produced is used captively by PVC producers and the remaining 60% sold on the merchant market. B. F. Goodrich leads the captive producers with 454 M metric tons capacity while Dow with 635 M metric tons and Shell with 680 M metric tons are the major merchant producers.

VCM is produced primarily by oxychlorination or direct chlorination using ethylene and chlorine—both highly energy intensive starting materials. Monomer supply is currently relatively balanced with the needs of polymer producers.

The polymer market. Since general purpose PVC represents 90% of the product sold and usage patterns

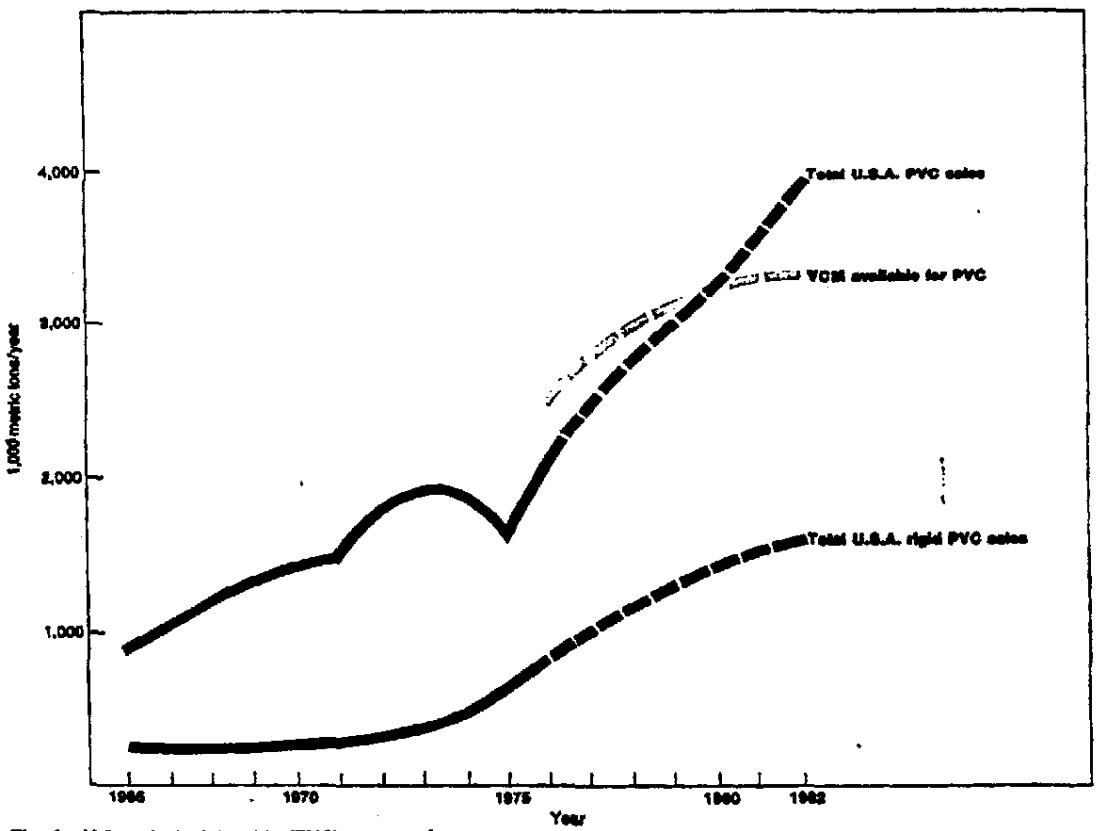

Fig. 1—U.S. polyvinylchloride (PVC) structure[1]