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ETHYL OPPORTUNITIES
IN
VINYL CHLORIDE

ETHYL CORPORATION
Commercial Development

Prepared By: C. C. Harvey
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EC 4413

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SUMMARY & CONCLUSIONS

1. Domestic vinyl chloride and PVC production for 1964 is expected to be about 1,610 MM lb, near a 20% gain over 1963. By 1970, production is expected to reach 3,300 MM lb to meet the increasing demand for versatile vinyl plastic goods. Packaging and building materials are expected to develop as major new growth areas.
2. Merchant monomer sales this year will probably be about 535 MM lb with Ethyl showing sales leadership. But little growth in merchant sales is expected during the next several years while competition is expected to broaden.
3. Oxychlorination which permits exclusive production of vinyl chloride from ethylene is expected to dominate monomer manufacture within a few years.
4. New monomer producers are expected from the ranks of the major oil companies. Skelly and American Can have already joined hands for a new monomer and polymer operation near Chicago. Conoco, Phillips, Shell, Cities Service, Gulf, Tidewater, Sun, Mobil, Sinclair, Amoco, and Enjay are all prospects for such a venture. Among the large chlorine producers Hooker may build a new monomer plant in Puerto Rico and others such as Stauffer, Pittsburgh Plate Glass, FMC, Diamond, and Frontier could participate in such a venture.
5. Ethyl's opportunities for monomer sales, plus internal needs for polymer production are expected to require more than 400 MM lb of vinyl chloride production by 1970. Consequently, additional manufacturing facilities, including a large oxychlorination plant, will be required.
6. Critical analyses of competitive economics coupled with rapid exploitation of marketing opportunities will be essential for Ethyl profitability in the future in both the monomer and polymer facets of this increasingly competitive area of business.
7. Ethyl's chlorine (or HCl) requirements for vinyl chloride plus those for chlorinated solvents and antiknock use are expected to exceed present capacity by about 300 MM lb/yr of Cl_2 in 1970. Since HCl tied in with an oxychlorination process is nearly as useful to Ethyl as chlorine routes for chlorinated hydrocarbon production, Mannheim and Hargreaves routes to HCl should be compared critically with new chlorine production operations. A particularly critical factor in such an economic comparison will probably be the relative marketability of by-product caustic from chlorine cells versus by-product salt cake from HCl operations.

8. Exploration of Ethyl's opportunity for toll conversion of ethylene into vinyl chloride for the prospective new monomer suppliers from the oil industry has been suggested. This type of operation could contribute to market stability and at the same time perhaps lead to useful business relationships with the participating company.
9. Maximum utilization of oil company ethylene by Ethyl during the next few years is expected to have a very favorable effect in combatting the reciprocity activities of DuPont and our other antiknock competition. DuPont's new plant now being built for their internal production of ethylene has substantially reduced the short term ethylene markets of several oil company suppliers. Ethyl opportunities for overseas or domestic sales of EDC for vinyl monomer manufacture should also be considered as a mechanism for moving additional upgraded ethylene products.

LOGICAL COURSE OF ACTION

1. Continue aggressive promotion of vinyl chloride monomer sales, recognizing the increasingly competitive nature of this business.
2. Develop PVC resin production and sales as planned by the Plastics Division.
3. Continue to emphasize maximum production and sales of fabricated PVC products (particularly for packaging and building use areas) toward a sales goal of 40 MM lb/yr by 1970.
4. Build new vinyl chloride monomer facilities and install oxychlorination operations to anticipate combined sales of monomer and polymer.
5. Continue critical economic analyses of competitive positions in vinyl chloride and PVC manufacturing.
6. Evaluate Ethyl's best long-term position for chlorine (or HCl) supply for internal requirements in vinyl chloride, chlorinated solvents and antiknocks.
7. Explore and develop opportunities for toll conversion of ethylene into vinyl chloride for the prospective new monomer entries from the oil industry (Cities Service, Gulf, Conoco, Phillips, Mobil, etc.).
8. Develop export and domestic market possibilities for EDC.
9. Seek the lower ethylene prices required for Ethyl to compete.