

Plastiscope 1

ducts. Targeted to begin operating in 1977, this new alternate-feedstocks facility will cost \$165 million. Although Dow has not released information on volume, it is estimated that an expansion of this magnitude will yield between 450,000 and 550,000 tons/yr. of ethylene alone.

These plans by Dow and Union Carbide represent the only domestic ethylene additions coming on from companies that are not oil majors. A glance at the domestic ethylene table indicates just how active are the oil-based producers in the 1975-78 scheme of things. As previously noted, Arco has doubled up its ethylene expansion at Channelview, Tex.—with identical 591,000-ton plants coming in 1976 and 1977 (each producing approximately 360,000 tons/yr. of propylene). Amoco also has doubled up; now confirms that a second 455,000-ton ethylene facility will be brought on at Chocolate Bayou in 1977, following a same-size plant set to begin production next year at the same locale. Both will be heavy on propylene.

Bigger plunge abroad. If U.S. ethylene expansion is picking up some much-needed steam, check what's happening abroad. Reports of ethylene buildup are coming in

from all parts of the globe (see table on p. 18; also May MP, p. 10, June, p. 128 and July, p. 14).

Although proposed starting dates are not available in all cases, most of the foreign ethylene expansions are targeted for the 1975-78 period. Adding them up, they total 6,700,000 tons. Even though it may be wise to take some of this news with a grain of salt, that still leaves a lot of ethylene and byproducts. And it includes only the buildups for which tonnage volume has been reported.

There are ventures under way that have not yet been quantified or settled. Among them is a feasibility study between Union Carbide and National Petrochemical Co. of Iran, for a jointly owned major petrochemical complex in that country. It's one of many such projects in planning.

In Japan, where the shackles seem to be coming off both the national economy and the plastics industry (see p. 60), there has been relaxation of government controls on production. Thus two new 400,000-ton ethylene expansions have been announced, following an earlier report of a 400,000-ton addition in 1977 that has been scheduled by Mitsubishi Petrochemical at Kashima.

New VCM regulation is only one influence on a changing outlook for PVC

Although many of its long-range impacts remain to be determined, there are several outfalls that can already be projected regarding the Occupational Safety & Health Administration's tough new standard on workplace exposure to vinyl chloride monomer. Effective this month, the regulation mandates new low levels of permissible emission (see June MP, p. 60, and Aug., p. 12).

One of the foregone conclusions is that the technology of compliance will cause at least a temporary diminution in the ratio of polyvinyl chloride production to capacity. Already, for example, a major PVC producer reports that the safety measures it has initiated to reduce VCM workplace exposure to the 50 parts per million interim level established by OSHA last spring has cut the firm's programmed 1974 increase in PVC production by two-thirds.

Another highly probable result is that mandated lower levels of VCM exposure will add a new impetus to rising resin prices. A recent economic-impact study, conducted for the Department of Labor by Foster D. Snell Inc., reveals that costs of polymerization increase sharply as VCM exposure levels decrease. Thus, according to the Snell research, a 50 p.p.m. level adds 0.72¢/lb. to PVC costs, a 25 p.p.m. level adds 2.73¢, and a level of 10 p.p.m. or less adds a minimum of 8¢/lb.

Shifting the sights. Another development to keep an eye on is that there will be a shift of as-yet undetermined magnitude in producers' resin and compound lines. This movement is only partially a reflection of the OSHA regulation on VCM, or other federal concern about use of the monomer. Influences that may be as great or greater are persistent raw materials shortages that are widening the demand-supply gap in some important markets, and the basic economics of resin/compound manufacture.

Some evidence of these changing producer priorities are already surfacing. The raw materials/economics issue has, in fact, caused some defections among producers of PVC bottle compounds. Both Borden Chemical and B.F. Good-

rich Chemical have advised the trade that they are phasing out of this segment of the PVC business.

Goodrich cites the fact that its six-year participation in the PVC-for-bottles business has been "substantially less profitable than forecast." And it observes that demands from other markets, coupled with the scarcity and higher cost of key raw materials, dictated a judicious reassessment of product lines. Borden says, succinctly, that PVC bottle compounds are being priced out of the market. Both producers will put the resin into other growth areas.

There are other indicators of sight-shifting among PVC producers. Tenneco Chemicals will convert its existing homopolymer plant at Flemington, N.J., to the production of PVC/acetate copolymers. The switch is scheduled to be completed by the end of this year and will, says Tenneco, strengthen its position in the flooring and phonograph-record markets. Firestone Plastics' new plant in Perryville, Md., to be operational by mid-1975, will produce only dispersion-grade resins, primarily for carpet backing, floor covering, fabric coating, and footwear.

Meantime, concern about VCM exposure at the processor level can be expected to lead to an increase in technological improvements in the supplying sector. In a recent development, Goodyear Tire & Rubber (a PVC producer with a big stake in the food-films market) has introduced a low-temperature cutting unit for supermarket meat wrapping. The new cartridge-heater device is said to permit film cutting at 260°F., compared with 700 to 800°F. for conventional hot-wire cutters. Besides reducing volatiles, says Goodyear, the new cutter enables maintenance of existing wrapping speeds.

In another customer-oriented safety development, Robintech Inc. reports Patent Office approval for its Rocor IKC (In Kettle Compound) manufacturing process. The proprietary process is said to eliminate the need for preblending in manufacture of PVC pipe, and eliminate worker exposure to VCM at the conversion facility.—END