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Abstract

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METHACRYLIC ACID AND METHACRYLIC ESTERS

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Continued growth in markets for methacrylate polymers for acrylic sheets and acrylic coatings has led to increased demand for the monomers, chiefly methyl methacrylate, but also including smaller amounts of specialty methacrylate esters made from methacrylic acid.

New processes have been proposed to replace the established route for making methyl methacrylate from acetone, hydrogen cyanide, and methanol. The acetone cyanohydrin route suffers from production of acidic wastes; the newer processes avoid these wastes and may also offer lower capital investment, lower production costs, and direct production of methacrylic acid.

This report presents technical and economic evaluations of several new methyl methacrylate processes. Detailed process descriptions and cost estimates are given for processes that begin with isobutylene, t-butanol, or mixed butylenes, and produce methacrylic acid via methacrolein. Processes that begin with isobutyric acid or allyl acetate are also included. A sixth process is based on production of methyl methacrylate from ethylene, carbon monoxide, methanol, and formaldehyde, via methyl propionate.

In their present stage of development, the last three processes appear to have about the same production costs as the acetone cyanohydrin route. The three processes that produce a methacrolein intermediate are markedly superior economically to the acetone cyanohydrin route, on the basis of new plant construction and current raw materials costs.

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**METHACRYLIC ACID AND
METHACRYLIC ESTERS**

SUPPLEMENT B

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For detailed marketing data and information, the reader is referred to one of the SRI programs specializing in marketing research. The CHEMICAL ECONOMICS HANDBOOK Program covers most major chemicals and chemical products produced in the United States and the WORLD PETROCHEMICALS Program covers major hydrocarbons and their derivatives on a worldwide basis. In addition, the SRI DIRECTORY OF CHEMICAL PRODUCERS services provide detailed lists of chemical producers by company, product, and plant for the United States and Western Europe.

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