PROCESS ECONOMICS PROGRAM

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Process Economics Report No. 45A

POLYOLS FOR POLYURETHANES

(May 1982)

ABSTRACT

Polyols evaluated in this report are: a trifunctional polyester polyol; three polyols of high functionality made from sucrose, sucrose-amine, and an aromatic compound containing nitrogen; a polyester polyol made from formaldehyde via formose; two polymer polyols grafted with acrylonitrile and with acrylonitrile/styrene, respectively; a polyol containing dispersed polyurea; a polytetramethylene ether glycol and a copolyester polyol made from tetrahydrofuran and ethylene; a polyester polyol made from adipic acid, diethylene glycol, and trimethylolpropane; a polyol made from residue in dimethyl terephthalate manufacture; and polybutadiene polyol.

A semicontinuous process and a continuous process are evaluated and compared for the production of a trifunctional polyether polyol with a mol wt of 3,000. The continuous process is competitive with the prevalently used semicontinuous process only if the reaction rate is accelerated by adding a chemical to promote the contact of the potassium hydroxide catalyst with the reactants.

Phosphorus- and halogen-containing polyols are reviewed.

Report No. 45A

POLYOLS FOR MAKING POLYURETHANES

SUPPLEMENT A

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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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