



PROCESS ECONOMICS PROGRAM

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Abstract

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EPOXY RESINS

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This supplement presents the technology and the economics of major uncured epoxy resins--bisphenol A based epoxy resins and epoxy novolac resins. New developments include a two-step process to manufacture diglycidyl ether of bisphenol A (a liquid epoxy resin), and the "advancement" process for producing a solid epoxy resin from the liquid epoxy resin. Both processes have been commercialized. Another new development, not yet used commercially, is a process for making epoxy novolac resins by coupling epichlorohydrin with phenol, followed by condensation with formaldehyde. Six processes for producing bisphenol A based epoxy resins and epoxy phenolic novolac resins are evaluated. Two additional processes are updated from the previous PEP report on epoxy resins.

Also presented is a review of the technology for manufacturing other epoxy resins such as epoxy hydantoin resins, cycloaliphatic epoxy resins, epoxy ester resins, and modified epoxy resins. The curing agents and accelerators for the cross-linking of uncured epoxy resins are also reviewed, along with a few compositions.

Report No. 38A

EPOXY RESINS

SUPPLEMENT A

by **YU-REN CHIN**

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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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