

**Abstract**  
**Process Economics Program Report 153A**  
**CATALYSTS**  
**(February 1996)**

This report investigates major developments in catalyst compositions, applications, and manufacturing technologies for metallocene, zeolite, and platinum group metal catalysts for use in chemical syntheses, petroleum refining, and air pollution control.

Although metallocene catalysts are expected to have a broad range of applications for stereospecific syntheses, they are initially being commercialized as polymerization catalysts. This report lists representative polymer formations and describes processes for manufacturing basic metallocene catalyst components.

Manufacturing economics for methyl aluminoxanes, metallocene cocatalysts, and zeolite ZSM-5 catalyst for fluidized catalytic cracking in petroleum refining are also developed and presented. Finally, major catalyst producers are briefly profiled, and commercial chemical processing, petroleum refining, and emission control markets are reviewed.

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