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Diphenyl Carbonate by Asahi Kasei Process

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Abstract

Recent Asahi Kasei's patents for diphenyl carbonate (DPC) production from ethylene oxide and CO₂ reveal patent examples based on commercial-scale production. Polycarbonate (PC) can be produced by reacting DPC with bisphenol A. The current review updates our earlier assessment of the Asahi Kasei's commercial process to produce DPC based on these patents. This review includes an analysis of the technology and a conceptual process design with process flow diagram depicting DPC production by this technology, stream flow, mass and energy balance, and major equipment lists with equipment sizing. The process design is based on a plant capable of producing 110,000 metric tons per year (tpy) of DPC, which is capable of supplying a 130,000 tpy PC plant.

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