

Modeling and Simulation of Continuous Production of Dimethyl Carbonate by Homogeneous Reactive Distillation Process

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Recently, Dimethyl carbonate (DMC) has been attracting an attention as an environmentally benign chemical. DMC is a useful substitute for phosgene, methyl chloride, dimethyl sulfate as methylation and carbonylation agent in very versatile reactions. In this paper, the continuous synthesis of DMC by homogeneous reactive distillation in a pilot scale is reported. The steady-state process simulation has been performed to obtain the exact solution for the overall modeling, using the general purpose - advanced process simulator, gPROMS(version 2.3). For comparison, ASPEN Plus(version 12.1) has also been used with the same conditions.