

Analysis and kinetic modeling of a non-ideal liquid reaction system

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Abstract: For some non –ideal liquid reaction systems, the behavior of the reacting species is better described in terms of reacting component activities rather than in term of concentrations. The paper presents the development of a kinetic model for the MTBE synthesis process: equilibrium constant, intrinsic kinetic expressions and effective diffusivities inside the catalyst pellet were evaluated and selected based on the open literature review and the model parameters were tuned against plant data for the validation of the model.

Keywords: component activity, MTBE synthesis, kinetic modeling
