Kinetics of methyl tert-butyl ether synthesis catalyzed by ion-exchange resin.
Al-Jarallah, Adnan M.; Siddiqui, Mohammed A. B.; Lee, A. K. K.
1. Department of Chemical Engineering, College of Engineering Science, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia


Abstract
The kinetics of liq.-phase reaction between MeOH and isobutene, catalyzed by an acidic ion-exchange resin, to form MeOH tert-BuOMe were studied in a 1-L Parr batch reactor. Expts. were carried out at 70, 80, 90, and 100 and at pressures sufficient to maintain liq. phase at those temps. Initial MeOH-isobutene mole ratios of 1.0 and 2.0 were used. The catalyst amt. was also varied. These kinetic data were used to model the reaction kinetics by a non-linear least squares regression technique. The reaction was followed Rideal-Eley kinetics. The values of the rate constts. were reported.