

Absorption of CO₂ into GMA solution containing MCM-41 catalyst

박상욱*, 손영식, 황병진, 오광중, 김성수¹
부산대학교; ¹부산가톨릭대학교
(swpark@pusan.ac.kr*)

Ionic liquid (IL) of MCM-41 (CP-MS41) via the immobilization of triethylamines (TEA-CP-MS41) was used as a catalyst of the reaction between carbon dioxide and glycidyl methacrylate (GMA). Absorption rate of carbon dioxide into GMA solutions containing IL, which was measured in a semi-batch stirred tank with a plane gas-liquid interface at 101.3 kPa, was used to obtain the reaction kinetics from analysis of the mass transfer mechanism accompanied by the elementary reactions based on the film theory. An empirical correlation formula between the reaction rate constants and the solubility parameters of the solvents, such as toluene, N-methyl-2-pyrrolidinone, and dimethyl sulfoxide, was presented.