유기 DEA용액에서 이산화탄소의 흡수

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The kinetics of carbon dioxide reaction with diethanoamine were determined in such non-aqueous solvents as methanol, ethanol, n-propanol, n-butanol, ethylene glycol, propylene glycol, and propylene carbonate and in water at 298 K and 101.3 kPa. A semi-batch stirred tank with a plane gas-liquid interface was used for gas absorption experiments, which were analyzed to give the reaction kinetics. The pseudo-first-order reaction rate constants obtained from the measured rates of absorption of carbon dioxide were used to get the elementary reaction rate constants in complicated reactions represented by zwitterion mechanism, and the order of overall reaction of carbon dioxide with amines. It was found that the dependence of the logarithms of the elementary reaction rate constants on the solubility parameter of the solvent was close to linear.