

Simultaneous absorption of carbon dioxide and sulfur dioxide into aqueous 2-amino-2-methyl-1-propanol solution

박상욱*, 천미선, 황병진, 오광중¹
부산대학교 응용화학공학부; ¹부산대학교 환경공학과
(swpark@pusan.ac.kr*)

A mixture gas of carbon dioxide and sulfur dioxide was simultaneously absorbed into aqueous 2-amino-2-methyl-1-propanol (AMP) solution in a stirred semi-batch tank with a planar gas-liquid interface at 298 K and 101.3 kPa. The reaction rate constant of CO₂ in CO₂/N₂/AMP system was obtained fitting the measured value with the estimated value with pseudo-first fast reaction model, which was used to treat the simultaneous absorption. To predict the simultaneous absorption rate of CO₂ and SO₂ from the mixture gases of CO₂, SO₂, and N₂, the film theory equation with the simultaneous absorption of both the gases are formulated, solved numerically, and compared with approximate solution.