

Phase Behavior for the Binary System Carbon Dioxide + Neopentyl Glycol Diacrylate Mixture: Experimental Measurements and Modeling with a Cubic Equation of State

변헌수*, 류 상, 김성현, 윤순도, 유기풍¹
전남대학교 공학대학 생명화학공학과;
¹서강대학교 공과대학 화공생명공학과
(hsbyun@chonnam.ac.kr*)

Phase behavior data for the binary mixture of (carbon dioxide + neopentyl glycol diacrylate) system were measured at (313.2, 333.2, 353.2, 373.2 and 393.2) K and pressures up to 24.52 MPa. The carbon dioxide + neopentyl glycol diacrylate system has continuous critical mixture curve that exhibit maximums in pressure at temperatures between the critical temperatures of carbon dioxide and neopentyl glycol diacrylate. The solubility of neopentyl glycol diacrylate for the (carbon dioxide + neopentyl glycol diacrylate) system increases as the temperature increase at constant pressure. The (carbon dioxide + neopentyl glycol diacrylate) mixture exhibit type-I phase behavior. The experimental result for (carbon dioxide + neopentyl glycol diacrylate) mixture is correlated with Peng-Robinson equation of state using a van der Waals one-fluid mixing rule including two adjustable parameters.