

Cloud point and vapor-liquid behavior for the poly(2-methoxyethyl acrylate) + supercritical solvents + cosolvents and carbon Dioxide + 2-methoxyethyl acrylate mixtures

장윤석, 양동선, 윤순도, 변헌수*

전남대학교

(hsbyun@chonnam.ac.kr*)

Experimental cloud-point curves of binary and ternary mixtures for poly(2-methoxyethyl acrylate) [P(2-MEA)] in supercritical carbon dioxide, dimethyl ether (DME) were measured at temperature range of (60 ~ 180)°C and pressures up to 1991 bar. Cloud-point behavior of those systems were showed in changed of the pressure-temperature (P-T) when solvent content was changed. Experimental data of phase behaviors for 2-methoxyethyl acrylate (2-MEA) in supercritical carbon dioxide was performed at temperature range of (40 ~ 120)°C and pressure range of 45 ~ 180 bar. The carbon dioxide + 2-MEA systems exhibit type-I phase behavior with a continuous mixture critical curve. The experimental results were modeled with the Peng-Robinson equation of state with two adjustable parameters.