High pressure phase behavior for the binary mixture of 2-(2-ethoxy ethoxy)ethyl acetate and 2-ethoxy ethyl acetate in supercritical CO_2

김창룡, 윤순도, 변헌수*
전남대학교
(hsbyun@chonnam.ac.kr*)

Experimental phase equilibria for the 2-(2-ethoxy ethoxy)ethyl acetate (2-(2-EE)EAe) + CO2 and 2-ethoxy ethyl acetate (2-EEAe) + CO2 systems are measured using variable-volume high pressure view-cell by static method. Phase behavior for two systems show at various temperatures (313.2, 333.2, 353.2, 373.2 and 393.2 K) and pressure up to 20.58 MPa. Both systems have critical mixture curves that show maximums in pressure-temperature(P-T) space between the critical temperatures of CO2 and 2-(2-EE)EAe or 2-EEAe. The solubility of CO2 for two systems at a constant pressure decreases as the temperature increases. The experimental results are correlated by the Peng-Robison equation of state a mixing rule including two adjustable parameters. (kij, ηij)