Effect of Isodecyl Methacrylate Concentration and Phase Behavior for the Poly (isodecyl methacrylate) in Supercritical Carbon Dioxide, Propane, Propylene, Butane, 1-Butene and Dimethyl Ether

변헌수*, 김상언
전남대학교 공학대학 생명화학공학부
(hsbyun@chonnam.ac.kr*)

High pressure phase behavior data of mixtures for poly(isodecyl acrylate) [P(IDA)] in supercritical carbon dioxide, dimethyl ether (DME), propane, propylene, butane and 1-butene have been studied. These binary and ternary systems show of phase behavior at temperature below ca. 200 ℃ and pressure up to ca. 1900 bar. The location of the P(IDA) + CO_2 cloud-point curve shifts to lower temperatures and pressures when IDA or DME is added to the P (IDA) + CO_2 solution. Also, high pressure phase behaviors for isodecyl acrylate (IDA) in supercritical carbon dioxide is performed at temperature range of 40 ~ 120 ℃ and pressure range of 15 ~ 260 bar. The experimental results in this work were modeled using Peng-Robinson equation of state.