

Experimental Measurement of Cloud-point for the Poly(methyl methacrylate-co-pentafluorophenyl acrylate) [P(MMA-co-PnFPA)] in Supercritical Fluoric Solvents

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In this study, the poly(methyl methacrylate-co-pentafluorophenyl acrylate) [P(MMA-co-PnFPA)] as a fluoric copolymer was prepared using supercritical dispersion polymerization in supercritical carbon dioxide. Experimental cloud-point up to 453K and 220 MPa are reported for binary and ternary mixtures of P(MMA-co-PnFPA) in supercritical  $\text{CH}_2\text{F}_2$ ,  $\text{CHF}_3$  and  $\text{CHClF}_2$ . Phase behavior of binary system for the P(MMA-co-PnFPA) (25:1, AIBN: 1.0 wt%, 2.0 wt%, and 4 wt%) + supercritical fluoric solvents ( $\text{CH}_2\text{F}_2$ ,  $\text{CHF}_3$  and  $\text{CHClF}_2$ ) mixtures at temperature range from 334 K to 433 K and pressure up to 160 MPa are measured the upper critical solution temperature (UCST) type behavior with negative slope for the P(MMA-co-PnFPA) +  $\text{CH}_2\text{F}_2$ , and lower critical solution temperature (LCST) type curve with positive slope for the P(MMA-co-PnFPA) +  $\text{CHF}_3$  and P(MMA-co-PnFPA) +  $\text{CHClF}_2$  mixtures.