High Pressure Phase Behavior for the Pentafluoropropyl Methacrylate and Poly (pentafluoropropyl methacrylate) in Supercritical CO_2 and DME

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Experimental cloud-point data of pressure up 470 bar and temperature to 180 oC reported for the binary mixture of poly(2,2,3,3,3-pentafluoropropyl methacrylate) (PPFPMA) in supercritical CO2 and dimethyl ether (DME). Pressure-composition isotherm is obtained for the CO2 + PFPMA at 40 ~ 120 oC and pressure up to 000 bar. This system exhibit type-I phase behavior with a continuous mixture-critical curve. Liquid-liquid-vapor equilibrium was not observed at these conditions. The experimental result for CO2 + PFPMA mixture is modeled using the Peng-Robinson equation of state.