

Phase Behavior for the Poly(phenyl methacrylate) + Supercritical Solvents + Cosolvents and Carbon Dioxide + Phenyl Methacrylate Mixtures<sub>2</sub>

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Experimental cloud-point curves for Poly(phenyl methacrylate) [P(PMA)] + phenyl methacrylate (PMA) or dimethyl ether (DME) in supercritical CO<sub>2</sub> systems were measured at temperature range of (60.3 to 190)°C and pressures up to 2691.4 bar. Cloud-point behavior of those systems were measured in changed of the pressure-temperature (P-T) when cosolvent content of PMA and DME was changed. High pressure phase behavior are obtained for PMA + CO<sub>2</sub> systems at 40 ~ 120 °C and pressures up to 249 bar. The solubility of monomers for PMA + CO<sub>2</sub> increase as the temperature increases at constant pressure. The experimental results for PPMA + CO<sub>2</sub> mixtures are modeled using the Peng-Robinson equation of state with two adjustable parameters.