

276b Measurement of the Solubility of Poly(Methyl Methacrylate)-Methyl Methacrylate System in Supercritical CO₂ and Their Modeling Using Saft

Ratka Damnjanovic, Naveed Aslam, and Aydin Sunol

Polymer processing in supercritical fluids has been a major interest for a portfolio of materials processing applications including their impregnation into porous matrices. Unfortunately they are only sparingly soluble in CO₂ unless one uses an entrainer or surfactant. This work focuses their solubility at rather mild conditions, low temperature and reduced pressures less than three. Solubility of poly methyl methacrylate (PMMA) in CO₂ plus methyl methacrylate is determined using cloud point measurements using a variable volume phase analyzer. The results are modeled accurately using SAFT and predict the solubility behavior.