Abstract

A vapor pressure apparatus was installed to measure isothermal vapor-liquid equilibrium (VLE) data for seven binary systems of polybutadiene + methylene chloride (341.1 to 409.0) K, polyethylene glycol mono-4-octylphenyl ether (PEGOPE) + methanol at (341.0 to 403.1) K, PEGOPE + ethanol at (342.6 to 454.1) K, PEGOPE + 2-propanol at (350.1 to 453.3) K, polyethylene glycol mono-4-nonylphenyl ether (PEGNPE) + methanol at (340.6 to 414.7) K, PEGNPE + ethanol at (341.9 to 414.1) K, and PEGNPE + 2-propanol at (351.5 to 454.5) K. Equilibrium pressure measurements were conducted to obtain P-T-x data. The experimental data were correlated by using the Antoine equation to regress the Antoine constants. These VLE data were further treated using the Barker’s method and correlated with the UNIQUAC and the Polymer NRTL activity coefficient models, respectively. The correlation results showed good agreement between the calculated values and the experimental data. The solvent activities of the experimental results are also reported and agree fairly well with the calculated values from the UNIQUAC equation.