Solid -Liquid Equilibria and the binary excess molar volumes and deviation of the refractive indices for mixtures of Dimethyl carbonate, Ethylene carbonate and Monoethylene glycol



The aim of this study is to report the solid-liquid equilibrium (SLE) of binary systems: DMC + Ethylene carbonate (EC), DMC + Monoethylene glycol (MEG) for the intermediates of Non-phosgene Diphenyl carbonate (DPC) synthetic process, which are Dimethyl carbonate (DMC), Ethylene carbonate and Monoethylene glycol, etc. The SLE data for the binary systems were determined at atmospheric pressure by the visual method. The experimental SLE data were correlated with the non-random two-liquid (NRTL) and universal quasi-chemical (UNIQUAC) equations. In addition, the physical properties, excess molar volumes (VE) and deviations in the molar refractivity (R) of these binary systems at several temperature were reported. The measured VE and R data were regressed well with the Redlich-Kister equation.