

Liquid – liquid equilibria of ternary mixtures of Dimethyl carbonate, Anisole, methanol and water at 308.15 K

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Polycarbonate (PC) is a durable material. Although it has high impact-resistance, it has low scratch-resistance and so a hard coating is applied to polycarbonate eyewear lenses and polycarbonate exterior automotive components. diphenylcarbonate (DPC), Dimethyl carbonate (DMC) is used as an intermediate material to PC synthesis process in the non-phosgene process. This newly developed DPC synthesis process is considered to be a “green process” because it does not use phosgene, a highly toxic environmental pollutant. However, relatively very few investigations of the phase equilibria and mixture properties of systems containing MPC have been reported.

In this work, therefore, the ternary liquid-liquid equilibrium (LLE) data are reported for the system {water + DMC + Anisole}, {water + methanol + Anisole} at 308.15K. The experimental LLE data has been correlated by using GE model: the non-random two-liquid (NRTL) model. Excess molar volume (V^E) and deviations in molar refractivity (ΔR) at 298.15 K are reported for the binary systems. The determined V^E and ΔR were correlated with the Redlich-Kister equation.