

Refractive Index, Excess Molar Volume and Viscometric Study of Binary Liquid Mixture of Morpholine with Cumene at 298.15 K, 303.15 K, and 308.15 K

Authors : B. K. Gill, Himani Sharma, V. K. Rattan

Abstract : Experimental data of refractive index, excess molar volume and viscosity of binary mixture of morpholine with cumene over the whole composition range at 298.15 K, 303.15 K, 308.15 K and normal atmospheric pressure have been measured. The experimental data were used to compute the density, deviation in molar refraction, deviation in viscosity and excess Gibbs free energy of activation as a function of composition. The experimental viscosity data have been correlated with empirical equations like Grunberg- Nissan, Herric correlation and three body McAllister's equation. The excess thermodynamic properties were fitted to Redlich-Kister polynomial equation. The variation of these properties with composition and temperature of the binary mixtures are discussed in terms of intermolecular interactions.

Keywords : cumene, excess Gibbs free energy, excess molar volume, morpholine

Conference Title : ICCBE 2016 : International Conference on Chemical and Biochemical Engineering

Conference Location : Paris, France

Conference Dates : March 14-15, 2016