Excess Enthalpies and Vapor Liquid Equilibrium Data for the Binary Mixtures of Dimethyl Sulphoxide with Ketones

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Excess enthalpies (H^E), excess Gibbs free energies (G^E) and activity coefficients (γ) have been measured at 298.15 K for the binary systems of dimethyl sulphoxide (DMSO) with ketones. The ketones chosen in the present investigation were ethyl methyl ketone, methyl isobutyl ketone and cyclohexanone. The H^E values are positive over the entire composition range for the three binary mixtures. The vapor-liquid equilibrium (VLE) was measured at 715 mm Hg. The experimental t-x data were used to estimate Wilson parameters and then used to calculate the equilibrium vapor compositions and the theoretical points for these binary mixtures. These Wilson parameters are useful to calculate activity coefficients and these in turn are useful to calculate excess Gibbs free energy. The experimental results were discussed in terms of intermolecular interactions between component molecules.