

Liquid-Liquid Equilibrium Data at 298.15 K for Ternary Systems {Di-isopropyl ether + C1~C3 Alcohols + Imidazolium-Based Ionic Liquids} under Atmospheric Pressure

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Recently, ionic liquids (ILs) have become useful in industrial separation methods because of their extremely low vapor pressures and thermal stabilities. Additionally, ILs have a highly polar character caused by Coulomb forces acting between the ions in the liquid state, and because they are exceedingly good solvents for a wide range of materials. Many applications of ILs as “green solvents”, replacing volatile organic compounds, have been reported. Imidazolium based ILs are usually of interest in laboratories as extractive solvents. Diisopropyl ether (DIPE) is considered one of the most attractive economical gasoline octane boosters as a substitute for methyl tert-butyl ether (MTBE), which was phased out in California, USA. Some primary alcohols have also been considered as candidates for new additives of gasoline. The current study focuses on the ternary liquid-liquid equilibrium data for {Di-isopropyl ether + C1~C3 Alcohols + Imidazolium-Based Ionic Liquids} mixtures at 298.15 K. Data for the binary and ternary systems were correlated using two activity coefficient models: NRTL and UNIQUAC.