

Vapor-liquid equilibria for the binary system of Acetonitrile + 1-hexyl-3-methylimidazoliumiodide at various temperatures from 283.15K to 333.15K

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Ionic liquids have gained much attention due to its unique chemical and physical properties, such as a high polarity, low melting pressure, non-volatility, and high thermal stability. These characteristics of ionic liquids give itself chance to be utilized in many applications, for example, dye sensitized solar cells(DSSCs) and supercapacitors. In this study, vapor-liquid equilibria (VLE) for the acetonitrile + 1-hexyl-3-methylimidazoliumiodide (HMIImI) system were measured for six isotherms ranging from 283.15K to 333.15K at 10K intervals. The experimental data have been correlated with Peng-Robinson (PR) equation of state using Wong-Sandler mixing rule and NRTL model. The correlation results by Peng-Robinson equation of state with Wong-Sandler mixing rule and NRTL model are in reasonable agreement with the experimental data.