

## Measurement of Volumetric Properties Aqueous Ionic Liquid Solutions

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The volumetric properties of aqueous ionic liquid (IL) solution are of importance to understand their behavior when developing a process associated with reaction and/or separation. Some of data have been published and comparisons have been made for the similar properties and systems. However, the properties of the well-known 1-butyl-3-methylimidazolium [bmim] halide systems has not been investigated. In this work, densities of aqueous IL solutions of [bmim] halides with water were measured at various temperatures ranging from 293.15 to 323.15 K under an ambient pressure by using a vibrating tube densimeter. The mole fractions of ILs in the mixtures had been changed from 0.1 to about 0.5. The density increases as the ILs concentration increases or the temperature decreases. The isobaric expansivity and apparent molar volume values for binary mixtures have been calculated from the obtained density data.