Density, Refractive Index and Kinetic Viscosity of Imidazolium based Ionic-liquids at several temperatures and Excess and deviation property of {MIPK + Imidazolium based Ionic-liquids} at 298.15 K

정인용, 황인찬, 박소진*
충남대학교
(sjpark@cnu.ac.kr*)

Ionic liquids, which are now defined as salts having a melting point below 100℃, have recently attracted considerable attention as potential alternatives to conventional organic solvents in various fields of chemistry. This is because they are recognized as green solvents owing to their nonvolatility, which assures nonflammability and a low impact on the enviroment and human health.

In this paper, density, viscosity and kinetic viscosity were measured for imidazolium based ionic liquid at (288.15 to 318.15) K and atmospheric pressure. The experimental data were correlated the Daubert and Danner equation, the linear equation and the Goletz and Tassion equation.

Excess molar volume (V^E) and deviations in molar refractivity (ΔR) at 298.15 K are reported for the binary systems : {MIPK+ [BMIM][Tf2N]} and {MIPK+ [BMIM][BF6]} and {MIPK+ [EMIM][Tf2N]} and {MIPK+ [OMIM][BF6]}. The determined V^E and ΔR were correlated with the Redlich–Kister equation. And the binary density and refractive index data at 298.15 K were predicted with several mixing rules.