

Kinetic viscosity and excess deviation of Diethyl carbonate, Dimethyl carbonate, Propylene carbonate, γ -Butyrolactone

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The rising demand for rechargeable battery, lithium ion batteries are used in various fields. Lithium ion battery is consist of anode, cathode, electrolyte and separator. Electrolyte solution is composed mainly of linear and cyclic alkyl carbonates, such as dimethyl carbonate(DMC), diethyl carbonate(DEC), ethyl methyl carbonate(EMC), ethylene carbonate(EC) and propylene carbonate(PC), In order to improve the electrolyte performance, variable electrolyte additives have been proposed. Thermodynamic property data of mixed solution is required because of lack of data. In this paper, Kinetic viscosity of pure components were measured at 298.15 K - 323.15 K and correlated with Goletz and Tassion equation. In addition, excess deviation of viscosity for binary systems DEC+ GBL, DMC+ GBL and PC+ GBL were determined at 298.15 K, 308.15 K, 318.15 K and correlated with Redlich-Kister equation.