Experimental study on densities of choline chloride+ glycerol solvent with water or alcohols

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Extraordinary solvents like ionic liquids (ILs) are promising for the future chemical processes. Experimental investigation on physicochemical property of ILs is of considerable importance for the development and design of new processes utilizing these solvents. This solvent would easily resolve problems in conventional chemical processes such as azeotrope at extraction processes. Accordingly, the main purpose of this work is measuring volumetric property and analyzing the data for the development and design of chemical process. In this study, densities were measured by using a vibrational density meter at atmospheric pressure. The densities of choline chloride (ChCl) + glycerol, which is a famous mixture of complex solution exhibiting hydrogen bonding, mixed with methanol, ethanol or water were measured in a wide temperature range. With the obtained density data, regression analysis was performed for isothermal data sets and excess molar volumes were calculated with the composition of the solvent. The results of this study will be used as a basic data for related process development with the measured properties and calculated values.