

Density measurement of choline chloride+ glycerol solvent with methanol in the temperature range of 293.15 to 343.15 K

김미래, 박병홍†
한국교통대학교
(b.h.park@ut.ac.kr†)

Experimental investigation on densities of unordinary solvents like ionic liquids (ILs) is of considerable importance for the development and design of new processes utilizing these solvents. A mixture of choline chloride (ChCl) blended with hydrogen bonding donor (HBD) behaves as an ionic liquid at very low temperature. A mixture of ChCl+ HBD has been used as an alternative solvent in alcohol extraction process. For the development and design of extraction process, the density of the mixture should be measured. In this study, the density of ChCl+ glycerol which is a representative mixture of ChCl+ HBD mixed with methanol was measured in the temperature range of 293.15 to 343.15 K. Densities were measured by using a vibrational density meter at atmospheric pressure. With the obtained density data, regression analysis was performed for isothermal data sets from 293.15 to 343.15 K and excess molar volumes were calculated with the composition of the solvent. This study will be used as a basic data for related process development.