

Compressed Liquid Densities of EMIM Chloride + 1-propanol mixtures at Temperatures from (313 to 363) K and Pressures up to 25 MPa

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Thermophysical properties for pure room temperature ionic liquids (IL) and their mixtures are required because of the increasing of potential applications. The increasing of applications of IL has not caused an increase in the number of experimental studies concerning fundamental properties. Although this is changing, more effort must be done in order to know more about IL. Furthermore, experimental thermophysical data involving these solvents are required to develop new industrial processes. At the moment volumetric properties data are scarce in the literature. The extraction of sulfur compounds using ionic liquids is one of the potential applications. Emim chloride has been used previously to perform sulfur extraction from fuels. [1, 2] Regeneration of the exhaust IL is one of the issues to solve [1]. In this work densities of emim chloride with 1-propanol were measured in order to get information about this IL having as main goal the development of a new extractive desulfurization process of commercial gasolines. Measurements of compressed liquid densities of emim chloride + 1-propanol were carried out at temperatures from (313 to 363) K and pressures up to 25 MPa. A vibrating tube densitometer, with two reference calibration fluids, was used to obtain density. The global uncertainty was estimated to be 0.2 kg m⁻³. [3] A five-parameter empirical equation was used to correlate the experimental densities. [4]

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