

167h Compressed Liquid Densities for the Binary Mixture [Emim] Chloride + Octane and for the Ternary Mixture [Emim] Chloride + Octane + CO₂

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Ionic liquids have been proposed as green and powerful solvents. Recently ionic liquids have been applied for the removing of sulfur and nitrogen compounds from fuels [1,2]. One of the issues to solve is the regeneration of the ionic liquid after the extraction process. CO₂ has been proposed for such regeneration [1,3] because of the very low solubility of the ionic liquids in supercritical CO₂; therefore it can be selective for the sulfur compounds [4]. Basic information about phase equilibria and volumetric behavior data are scarce for mixtures involving ionic liquids, sulfur compounds, fuel compounds and CO₂ for the understanding of all the phenomena involved in the mentioned separations. In this work, compressed liquid densities were measured for the binary mixtures composed by 1-ethyl-3-methylimidazolium [Emim] chloride + octane and for ternary mixtures composed by [Emim] chloride + octane + CO₂ at temperatures from 313 to 363 K and pressures up to 25 MPa. Experimental densities were correlated using two empirical equations [5,6].

Keywords: Density; Ionic liquids, Octane, CO₂;

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