

Orientational Effects in Binary Liquid Organic Mixtures: Study in Terms of the Flory Theory

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The Flory theory [1] and other models derived from it, as the Prigogine-Flory-Patterson model [2], are widely applied to correlate/predict thermodynamic properties of liquid mixtures such as molar excess enthalpies, H^E , and volumes, V^E . Typically, Flory theory is applied to systems of non polar compounds as alkane-alkane [3], or to mixtures formed by one weakly polar component (linear or branched monooxaalkane [4], N,N,N-trialkylamine [5,6]) and one alkane. The model has been also used to treat systems involving polar compounds (alkanone-ether [7]), or even self-associated components (1-alkanol-1-alkanol [8,9], 2-methoxyethanol-alkoxyethanol [10]). In this work, mixtures of the type alkanone-alkanone, amide-alkanone and binary systems involving two linear organic monocarboxylic acids are investigated in the framework of the Flory theory. The concentration dependence of the χ_{12} parameter, the only adjustable magnitude in the model, is used to evaluate the existence of orientational effects in the studied mixtures.

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