

H-bonded non-linear Interaction of a Nuclear Extractant with Alkanols (C_1, C_2): An Ultrasonic Study

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Abstract. The ultrasonic velocity (u) and density (ρ) of binary mixtures of a nuclear extractant, di-(2ethyl hexyl) phosphoric acid with methanol and ethanol, have been measured over the whole composition range at 303K. The experimental values have been used to compute the acoustic parameters such as intermolecular free length (L_f), isentropic compressibility (β_s) and acoustic impedance (Z). The deviations of the computed parameters from their ideal values were evaluated. These parameters have been interpreted in terms of H-bonded molecular interaction through dipolar orientation.

Keywords: Ultrasonic velocity; binary mixture; deviation properties; molecular interaction

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