

DENSITIES, ULTRASONIC SOUND SPEED (u) AND VISCOSITY DATA (η) OF BINARY LIQUID MIXTURES OF ETHYLBENZOATE WITH KETONES AT VARIOUS TEMPERATURES

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ABSTRACT

Density (ρ), Viscosity (η) and ultrasonic speed (u) of binary liquid mixtures of ethylbenzoate with cyclopentanone (CP), cyclohexanone (CP) and acetophenone (AP) were measured over the entire composition range at 303.15K and 313.15K. The measured data were used to compute excess volume (V^E), isentropic compressibility (κ_s), excess isentropic compressibility (κ_s^E) and deviation in viscosity ($\Delta\eta$) and excess Gibbs free energy of activation of viscous flow (G^{*E}). All the measured data were compared with various theoretical models. The experimental data were analyzed in terms of intermolecular interactions that are prevailing between component molecules.

KEYWORDS: Excess Volume, Ultrasonic Sound Speed, Viscosity, Isentropic Compressibility, Intermolecular Interactions