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STUDIES OF VOLUMETRIC, VISCOMETRIC AND MOLAR PROPERTIES OF DIISOPROPYL AMINE WITH 1-ALKANOLS (C₆-C₁₀) AT DIFFERENT TEMPERATURES

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Abstract

This paper presents the experimental measurements of densities, ρ , viscosities, η and speeds of sound, u of (Diisopropylamine (DIIPA) + 1-Hexanol, + 1-Octanol, + 1-Decanol) over the entire composition range at (293.15 to 313.15) K and atmospheric pressure. We examined the influence of temperature and alcohol chain length upon the various studied properties. Negative values of excess molar volume V_m^E and excess molar isentropic compressibilities, $K_{S,m}^E$ indicates the presence strong intermolecular interactions. The results of deviations in speeds of sound, u^D , viscosity deviations, $\Delta\eta$ and Gibbs excess free energy of activation of viscous flow, ΔG^{*E} also supports the conclusion drawn from V_m^E and $K_{S,m}^E$. The outcomes of V_m^E have been correlated to Prigogine–Flory–Patterson theory (PFP).

Keywords : Density; Excess Molar Volume; Viscosity; Molar Properties.

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