

Privileged Scaffold Chalcone: Synthesis, Characterization and Its Molecular Interactions with Addition of 3-phenyl-1- (3,4-dibromophenyl) prop-2-en-1-one in Mixed Solvents at Various Temperatures

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Abstract: 3-phenyl-1- (3,4-dibromophenyl) prop-2-en-1-one have been synthesized and characterized by M.P., Infrared spectroscopy, Thin Layer Chromatography, and ¹H NMR and GCMS data. The ultrasonic velocity and refractive indices of mixed solvents 0-100% (by wt.) of 3-phenyl-1- (3,4-dibromophenyl) prop-2-en-1-one have been measured at three different temperatures 298, 303, and 308K. The experimental data obtained was used to calculate various parameters such as Molar volume (*V_m*), Free volume (*V_f*), Acoustical impedance (*Z*), intermolecular free path length(*L_f*), adiabatic compressibility(β), Rao's molar sound velocity (*R_m*), Relative association (*R_a*) Molar refraction (*R_m*), Specific refraction (*r*) and Polarisability constant(*a*). These parameters are interpreted in terms of solute- solute and solute- solvent interaction and its effect on mixed solvent systems..

Keywords: Refractive index, Mole fraction, Polarisability, Molar refraction, molar volume, Relative association, ultrasonic velocity

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