

Study of Intermolecular Interaction of Allyl Bromide with Acetone Through Dielectric and Thermodynamic Properties

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Abstract: The dielectric constant (ϵ_s) and Relaxation time (τ) for binary mixtures of Allyl Bromide (ALB) with Acetone (ACE) were determined for eleven concentrations at temperatures 293.15 K, 303.15 K and 313.15 K in the frequency range of 10 MHz to 10 GHz using time domain reflectometry (TDR). Density and refractive index of same mixture at same temperature are also obtained which are further used to known excess molar volume and excess molar refraction respectively. These excess parameters are compared with excess dielectric parameter. Comparison confirms that there is intermolecular interaction between AL Band Acetone ACE. The values of Kirkwood factors indicate antiparallel dipoles in ALB and parallel dipoles in ACE.

Keywords: Static Dielectric Constant, Relaxation Time, Density, Refractive Index, etc.

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