



**Acoustic and Viscometric studies of manitol with life-essential Co(II) and Cu(II) metal ions in aqueous medium at 298.15 K**

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**ABSTRACT**

*The ultrasonic velocity, density and viscosity of manitol in different concentration of aqueous solutions of Cu(II) and Co(II) metal ions at 298.15 K and one atmospheric pressures has been investigated to understand the molecular interactions of manitol with metal ions in aqueous medium. The acoustical parameters such as isentropic compressibility, intermolecular free length, specific acoustic impedance, relative association, free volume, internal pressure, viscous relaxation time, Gibb's free energy, attenuation coefficient, Rao's constant, and Wada's constant have been calculated from the experimental data. On the basis of the Jones-Dole equation, Falkenhagen coefficient A and Jones-Dole B-coefficient have been evaluated. The data have been interpreted in terms of molecular interactions and the variations in these parameters with solute concentration give the information about intermolecular interactions.*

**Keywords:** Density, Viscosity, Ultrasonic velocity, Cu (II) and Co (II) metal ion, Manitol, Jones-Dole equation.

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