



Acoustical study on molecular interactions in binary liquid mixture at different temperatures

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ABSTRACT

Ultrasonic velocity (u), density (ρ), and viscosity (η) values have been measured experimentally in the binary liquid mixture containing quinoline and *m*-xylene at different temperatures 303.15K, 308.15K, 313.15K and 318.15K over the entire range of composition. This experimental data have been used to calculate the acoustical parameters such as adiabatic compressibility (β), free length (L_f), free volume (V_f) and internal pressure (π). The results have been qualitatively used to explain the molecular interactions between the components of the liquid mixture.

Keywords: Ultrasonic velocity, Quinoline, *m*-xylene, adiabatic compressibility, free volume.
