Available online at www.joac.info

ISSN: 2278-1862

Journal of Applicable Chemistry

2014, 3 (1): 379-384

(International Peer Reviewed Journal)

Study Of Molecular Interactions In Binary Mixtures Containing Nonanol At 303.15, And 313.15 K

Narendra Kolla

Department of Physics, V.R. Siddhartha Engineering College (Autonomous), Vijayawada, Andhra Pradesh, **INDIA**

Email: narenk75@gmail.com

Accepted on 28th December 2013

ABSTRACT

Speed of sound (u), and density (ρ) values have been measured experimentally for the binary liquid mixtures of anisaldehyde with nonanol at temperatures 303.15 and 313.15K over the entire mole fraction range. The experimental data have been used to calculate the parameters such as adiabatic compressibility (β), free length (L_f) and acoustic impedance (Z). Excess adiabatic compressibility (β^E), excess free length (L_f^E), excess acoustic impedance (Z^E) and excess speed of sound (u^E) were determined from these calculated values and the results were fitted to the Redlich-Kister Polynomial equation. The values of β^E, L_f^E, Z^E and u^E were plotted against the mole fraction of anisaldehyde. The observed negative and positive values of excess parameters were explained on the basis of intermolecular interactions present in these mixtures.

Keywords: Anisaldehyde, Alcohols, excess parameters, speed of sound, Density.