The study of ultrasonic properties for binary liquid mixtures of Benzyl acetate with Chloro ethanes and chloro ethenes at various temperatures

T.Savitha Jyostna*, D.Sreenu , B.Satheesh and G.Ramesh
Department of Chemistry, Kakatiya University, Warangal-506009, (T.S), INDIA.
E-mail:savithajyostna@gmail.com

Abstract:-

Measurements of densities (ρ) and ultrasonic speeds (u) have been carried out for the binary mixtures of Benzyl acetate (BA) with chloro ethanes (1,2 dichloro ethane, 1,1,2 trichloro ethane and 1,1,2,2 tetrachloro ethane) and chloro ethenes (trichloro ethene and tetrachloro ethene) and their pure liquids at 298.15k, 303.15k and 308.15k over the entire composition range. From these experimental data isentropic compressibilities (k_s) and deviations in isentropic compressibilities (Δk_s) of Benzyl acetate with chloro ethanes and chloro ethenes have been calculated. These deviation parameter have been fitted to Redlich- Kister type polynomial equation using multiparametric non-linear regression analysis to estimate the binary coefficients and standard deviation. The experimental results were discussed in terms of hydrogen bonding, formation of molecular complexes and saturation of chlorine atoms with Π electrons between unlike molecules.

Key words: Binary mixtures, Benzyl acetate, Chloro ethanes, Chloro ethenes , derived parameters, Redlich-Kister type polynomial equation.

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