



Refractive Indices and Related Excess Properties of Binary Mixtures of Ricinoleic Acid with some Halobenzenes

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ABSTRACT

Refractive indices, (n_D) of binary liquid mixtures of ricinoleic acid with some halobenzenes (Fluorobenzene, Chlorobenzene and Bromobenzene) at 303.15, 308.15 and 313.15 K have been measured over the entire composition range. From the experimentally measured values, deviation in refractive index, (Δn_D), and molar refraction, (ΔR_m), have been computed and fitted to the Redlich-Kister polynomial equation to obtain the coefficients and standard errors. Using nine mixing rules namely Arago-Boit, Dale-Gladstone, Lorentz-Lorentz, Eykman, Weiner, Heller, Newton, Oster and Eyring-John refractive indices of the binary liquid mixtures have been calculated theoretically and the results are discussed in terms of the molecular interactions between the mixing components. Results reveal that strong interactions are observed between these selected binaries.

Keywords: Refractive index, molar refraction, ricinoleic acid, halobenzenes.
