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Application of Refractive Index Mixing Rules to Binary System

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ABSTRACT

Refractive index, n , and density, ρ , data of diethyl carbonate + aniline binary mixture have been measured as a function of composition at temperatures 293.15 K, 303.15 K and 313.15 K. A comparative study of Arago-Biot (A-B), Eykman (E), Eyring and John (E-J), Gladstone-Dale (G-D), Heller (H), Lorentz-Lorentz (L-L), Newton (N), Oster (Os) and Weiner (W) relations for predicting the refractive index of a liquid has been carried out to test the validity for the binary mixtures over the entire composition range of aniline at three temperatures. Comparison of various mixing rules has been expressed in terms of average percentage deviation.

Keywords: diethyl carbonate, refractive index, aniline, refractive index mixing rules.
