

Ternary liquid-liquid equilibria for the diesel model compound(hexadecane) + benzene or toluene or p-xylene + 2-methoxyethanol systems at 298.15 K and their binary physical properties

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In the petrochemical industry, liquid extraction could be effective process for the separation of aromatics (benzene, toluene, and xylenes) from catalytic naphtha reforming products they forms azeotrope and their boiling points are very close. In the present work, liquid-liquid equilibria(LLE) data have been obtained for the system {hexadecane + benzene or toluene or p-xylene + 2-methoxyethanol} at 298.15 K and at atmospheric pressure. The experimental data were correlated through two common GE models: the non-random two-liquid (NRTL) and universal quasi-chemical activity coefficient (UNIQUAC) models. In addition, excess properties such as excess molar volume (VE) and deviations of refractivity (ΔR) for the binary systems were determined at 298.15 K over the entire composition ranges. The experimental data were satisfactorily fitted using the Redlich-Kister polynomial.