

Excess Molar Enthalpies, Excess Molar Volumes and Molar Refractivity Deviations for the Binary System {1,2-Dichloropropane + Diethylene glycol monoalkyl ether(C<sub>3</sub> to C<sub>4</sub>)} at 298.15 K

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The excess molar volume, excess molar enthalpies and change in refractive indices on the mixing for {1,2-dichloropropane + diethylene glycol monopropyl ether, or diethylene glycol monobutyl ether} have been determined at 298.15 K. All  $H^E$  and  $V^E$  values for the above mixtures are negative except at extremely high mole fraction of 1,2-dichloropropane (1,2-DCP) whereas all change in refractive indices ( $\Delta n_D$ ) values are found to be negative for whole composition range. All  $H^E$  values decrease from diethylene glycol monobutyl ether (DEGMBE) to diethylene glycol monopropyl ether (DEGMPE), showing minimum value varying from  $-472.9 \text{ J}\cdot\text{mol}^{-1}$  (DEGMBE) to  $-490.6 \text{ J}\cdot\text{mol}^{-1}$  (DEGMPE) around 0.40 mole fraction of 1,2-DCP. The experimental results of  $H^E$ ,  $V^E$ , and  $\Delta n_D$  were fitted to Redlich-Kister equation to correlate the composition dependence of excess properties. In this work, the experimental excess enthalpy data have been also correlated using thermodynamic models (Wilson, NRTL, and UNIQUAC) and have been qualitatively discussed.