Thermodynamic Properties of Binary Mixtures of 1, 2-Dichloroethane with Some Polyethers: DISQUAC Calculations Compared with Dortmund UNIFAC Results

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Abstract : The experimental vapour-liquid equilibria (VLE) at isothermal conditions and excess molar Gibbs energies GE are carried out for the three binary mixtures: 1, 2- dichloroethane + ethylene glycol dimethyl ether, + diethylene glycol dimethyl ether or + diethylene glycol diethyl ether, at ten temperatures ranging from 273 to 353.15 K. A good static device was employed for these measurements. The VLE data were reduced using the Redlich-Kister equation by taking into consideration the vapour pressure non-ideality in terms of the second molar virial coefficient. The experimental data were compared to the results predicted with the DISQUAC and Dortmund UNIFAC group contribution models for the total pressures P, the excess molar Gibbs energies GE and the excess molar enthalpies HE.

Keywords : Disquac model, Dortmund UNIFAC model, 1, 2- dichloroethane, excess molar Gibbs energies GE, polyethers, VLE

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