Group Contribution Nonrandom Lattice Fluid Equation of State

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The phase equilibria correlations were done by utilizing a group contribution version of the nonrandom lattice fluid equation of state. Group contribution based models are well known and widely used in industrial applications but usually limited to lower pressures, like excess Gibbs free energy models. A group contribution version of the multi fluid nonrandom lattice fluid equation of state has been derived and applied for the correlation tasks. The nonrandom lattice fluid equation of state is well known for the ability to accurately predict various equilibrium systems even at higher pressures.

The correlation results show good agreements with the selected data sets. Thus the authors believe that the application of the introduced model during the selection of suitable cosolvents in solvent-cosolvent problems can be useful in various industrial applications.