Isobaric Vapor–Liquid Equilibrium for Binary Systems of Cyclohexanone + Benzene, Cyclohexanone + Toluene, and Cyclohexanone + p-Xylene at 101.3 kPa

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Comparisons for the systems cyclohexanone + benzene and cyclohexanone + *p*-xylene at different conditions.

1. Cyclohexanone + Benzene System.

For the system of cyclohexanone + benzene, Matteoli and Lepori [J. Chem. Eng. Data, 1988, 33, 247] had reported the VLE data at 298.15 K, and we measured the VLE data of this system at 101.3 kPa. We used the binary interaction parameter regressed by the NRTL model at 101.3 kPa to estimate the VLE values for the cyclohexanone + benzene system at 298.15 K. The results are plotted in Figure S1.



Figure S1. *p-x-y* diagram for the cyclohexanone + benzene system at 273.15 K.•, *x*, *y*, *p*, literature data [J. Chem. Eng. Data, 1988, 33, 247]; -, estimated results by the NRTL model with the binary interaction parameters obtained at 101.3 kPa.

2. Cyclohexanone + *P*-xylene System.

For the system of cyclohexanone + p-xylene, Comelli and Francesconi [*Can. J. Chem. Eng., 1985, 63, 344-347*] had reported the VLE data at 40 kPa and 98.67 kPa, and we measured the VLE data of this system at 101.3 kPa. We used the binary interaction parameter regressed by the NRTL model at 101.3 kPa to estimate the VLE values for the cyclohexanone + p-xylene system at 40 kPa and 98.67 kPa. The results are plotted in the Figures S2 and S3. As shown in Figs S2 and S3, the estimated results at 98.67 kPa by the NRTL model with the regressed binary interaction parameters at 101.3 kPa are better than those at 40 kPa.



Figure S2. T-x-y diagram for the cyclohexanone + p-xylene at 40 kPa. •, x, y, T, literature data[Can. J. Chem. Eng., 1985, 63, 344-347]; -, estimated results by the NRTL model with the binary interaction parameters obtained at 101.3 kPa.



Figure S3. *T-x-y* diagram for the cyclohexanone + *p*-xylene at 98.67kPa. •, *x, y, T*, literature data[Can. J. Chem. Eng., 1985, 63, 344-347]; -, estimated results by the NRTL model with the binary interaction parameters obtained at 101.3kPa.