QUANTITATIVE ANALYSIS OF COMPLEX FORMATION IN ACETONE–CHLOROFORM AND ETHYL ACETATE–CYCLOHEXANE SOLUTIONS

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S u m m a r y

The actual binary (double) solutions of "acetone–chloroform" and "ethyl acetate–cyclohexane" are simulated as ideal multi-component (triple, quadruple) mixtures, which consist of associates $[A_p]$, $[B_q]$, and complexes $[A_nB_m]$. The MCR-ALS method is used for the analysis of near-IR absorption spectra. Complexes of a single type $[A_1B_1]$ are determined in an acetone–chloroform solution, and complexes of two types, $[X_1Y_1]$ and $[X_5Y_1]$, are determined in an ethyl acetate–cyclohexane solution. An auxiliary method for determining the number of complexes by analyzing the residual intensity in the IR spectra is proposed. Information about the number of complexes in solutions obtained by analyzing the residual intensity correlates with the MCR-ALS data. It is used for the interpretation of the formation of complexes in binary solutions.