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Measurement and Correlation of Liquid–Liquid Equilibrium Data for Ethanol–Water–KF and Ethanol–Water–K2CO3 Systems

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摘要 The liquid–liquid equilibrium data for two ternary systems, ethanol–water–KF and ethanol– water–K2CO3, were determined at 25℃. Experiments show that by adding KF or K2CO3 into the ethanol–water system two phases are formed: an ethanol-rich phase with negligible salt and a water-rich phase with negligible ethanol, thus water can be separated out easily. A mathematical calculation of the liquid–liquid equilibrium data was carried out with the Pitzer theory on water activity in the aqueous phase, and with the Wilson or NRTL or UNIQUAC equations for that in the ethanol phase, which is in good agreement with experimental data.

关键词 ethanol–water–KF ethanol–water–K2CO3 liquid–liquid equilibrium Pitzer theory Wilson equation NRTL equation UNIQUAC equation correlation

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