

## Multiphase Coexistence for Aqueous System with Hydrophilic Agent

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**Abstract :** Liquid-Liquid Equilibrium (LLE) data are measured for the ternary mixtures of water + 1-butanol + butyl acetate and quaternary mixtures of water + 1-butanol + butyl acetate + glycerol at atmospheric pressure at 313.15 K. In addition, isothermal Vapor-Liquid-Liquid Equilibrium (VLLE) data are determined experimentally at 333.15 K. The region of heterogeneity is found to increase as the hydrophilic agent (glycerol) is introduced into the aqueous mixtures. The experimental data are correlated with the NRTL model. The predicted results from the solution model with the model parameters determined from the constituent binaries are also compared with the experimental values.

**Keywords :** LLE, VLLE, hydrophilic agent, NRTL

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