

## عنوان مقاله:

Liquid-Liquid Equilibrium for Ternary System of Water + Acetic Acid + Toluene at Different Temperatures

## محل انتشار:

چهاردهمین کنگره ملی مهندسی شیمی ایران (سال: 1391)

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## خلاصه مقاله:

In this study, the effect of temperature on liquid-liquid equilibrium (LLE) for the ternary system of water + acetic acid + toluene was investigated at 298.2 and 313.2 K under ambient pressure. This chemical system is frequently used in liquid-liquid extraction investigations. The results show that distribution coefficient of acetic acid between organic/aqueous phases rises at the higher temperature but separation factor decreases. The acetic acid distribution coefficient is within the range of 0.06-0.1696 and the separation factor within 13.36-59.83. The tie line data for this system are sufficiently correlated by the equations of Othmer-Tobias and Hand. The experimental data were used to obtain binary interaction parameters predicted by Non-Random Two Liquid (NRTL) and Universal Quasi-Chemical (UNIQUAC) models using Aspen Plus simulator. Results show that equilibrium composition can be represented by these models. Root mean square deviation was used to assess correlating by these models (0.0127 and 0.02047, respectively). The NRTL equation was the more accurate model in correlating the equilibrium compositions of the studied system

## کلمات کلیدی:

LLE; Distribution coefficient; Separation factor; NRTL; UNIQUAC

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