

Accepted Manuscript

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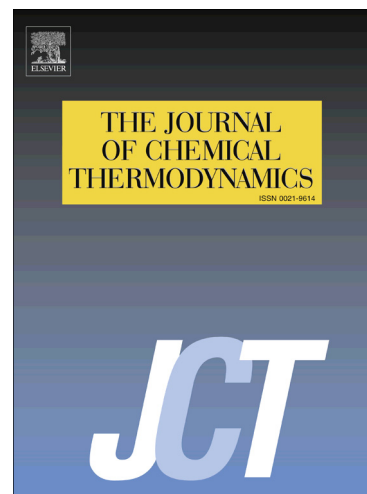
PII: S0021-9614(14)00396-6
DOI: <http://dx.doi.org/10.1016/j.jct.2014.12.025>
Reference: YJCHT 4118

To appear in: *J. Chem. Thermodynamics*

Received Date: 11 June 2014
Revised Date: 16 December 2014
Accepted Date: 29 December 2014

Please cite this article as: M. Reda, Ł. Rusczyński, M. Gliński, T. Hofman, Liquid-liquid equilibrium in binary systems of isomeric C₈ aliphatic monoethers with acetonitrile and its interpretation by the COSMO-SAC model, *J. Chem. Thermodynamics* (2014), doi: <http://dx.doi.org/10.1016/j.jct.2014.12.025>

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Liquid-liquid equilibrium in binary systems of isomeric C₈ aliphatic monoethers with acetonitrile and its interpretation by the COSMO-SAC model

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Keywords

Liquid-liquid equilibrium; ether; acetonitrile; group contribution; UNIFAC, COSMO-SAC

Abstract

The liquid-liquid solubility curves have been determined by a synthetic method for six binary mixtures of acetonitrile + {heptyl methyl ether – CH₃OⁿC₇H₁₅, or ethyl hexyl ether – C₂H₅OⁿC₆H₁₃, or pentyl propyl ether ⁿC₃H₇OⁿC₅H₁₁, or isopentyl propyl ether ⁿC₃H₇OⁱC₅H₁₁, or dibutyl ether ⁿC₄H₉OⁿC₄H₉, or butyl isobutyl ether ⁿC₄H₉OⁱC₄H₉}. The possibility of the COSMO-SAC model to account for the thermodynamic differences between these systems has been tested and the discussion on the influence of screening charge of ethers on the system properties was undertaken.

1. Introduction

The research on liquid-liquid equilibria is an important task for both applied and theoretical thermodynamics. Its practical significance refers to the extraction processes while adequate modelling still may be considered as a challenge, mainly because of strong temperature

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