Accepted Manuscript

Compressed liquid densities of binary mixtures of *n*-decane + *n*-dodecane at temperatures from 283 K to 363 K and pressures up to 100 MPa

Tao Jia, Shengshan Bi, Jiangtao Wu

PII: S0378-3812(17)30486-7

DOI: 10.1016/j.fluid.2017.12.010

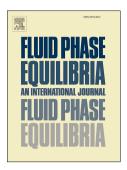
Reference: FLUID 11683

To appear in: Fluid Phase Equilibria

Received Date: 28 September 2017
Revised Date: 23 November 2017
Accepted Date: 6 December 2017

Please cite this article as: T. Jia, S. Bi, J. Wu, Compressed liquid densities of binary mixtures of *n*-decane + *n*-dodecane at temperatures from 283 K to 363 K and pressures up to 100 MPa, *Fluid Phase Equilibria* (2018), doi: 10.1016/j.fluid.2017.12.010.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



ACCEPTED MANUSCRIPT

Compressed liquid densities of binary mixtures of *n*-decane + *n*-dodecane at temperatures from 283 K to 363 K and pressures

up to 100 MPa

Tao Jia, Shengshan Bi, Jiangtao Wu

Key Laboratory of Thermo-Fluid Science and Engineering, Ministry of Education, School of Energy and Power

Engineering, Xi'an Jiaotong University, Xi'an, 710049, P.R. China

*Corresponding Author. Tel: +86-29-82668143 Fax: +86-29-82663737 E-mail address: bss@mail.xjtu.edu.cn

ABSTRACT

Compressed liquid densities of n-decane + n-dodecane binary mixtures were measured with a vibrating-tube densimeter at temperatures from (283 to 363) K and pressures from (0.1 to 100) MPa over the whole range of composition. The binary mixtures n-decane (1) + n-dodecane (2) were prepared at mole fractions of ($x_1 = 0$, 0.2297, 0.4436, 0.6433 0.7841, and 1.0), respectively. The experimental densities of binary mixtures were successfully correlated with the Tait-type equation, and the absolute average percentage deviations of the experimental and calculated values were 0.048%, 0.055%, 0.059%, 0.058%, 0.068%, and 0.052%, respectively. In addition, the excess molar

Keywords: *n*-Decane; *n*-Dodecane; Density; Excess molar volume; Vibrating-tube densimeter

volume was calculated for whole range of temperature, pressure and composition.

1. Introduction

Crude oil is multi-component complex mixtures, mainly include *n*-alkanes, naphthenes and aromatic hydrocarbons mixtures. Due to the component complexity of crude oil, a single *n*-alkane or several *n*-alkane mixtures were typically used as alternatives of crude oil to research the

Download English Version:

https://daneshyari.com/en/article/6619327

Download Persian Version:

https://daneshyari.com/article/6619327

<u>Daneshyari.com</u>