

Measurement and Correlation of the Densities and Viscosities of 2-Bromopropane + Ethanol Binary Mixtures at Temperatures from (298.15 to 318.15) K.
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The National Institute of Standards and Technology (NIST) report on the previous paper disclosed to the author that there were large deviations between the literature data and the data reported in the paper. This addition and correction gives the uncertainties in the measurements reported previously. In addition a comparison with evaluated and literature data is presented.

The uncertainty in the density measurements is about $\pm 5 \cdot 10^{-4} \text{ g} \cdot \text{cm}^{-3}$ with a relative uncertainty of about 0.06 %. The uncertainty in the viscosity values reported was about $\pm 0.006 \text{ mPa} \cdot \text{s}$, which corresponds to a relative uncertainty for ethanol of approximately 0.6 % and, for 2-bromopropane, 1.2 %.

Comparisons of our results with the values in the literature by use of deviation plots are illustrated in Figures 1 to 4.

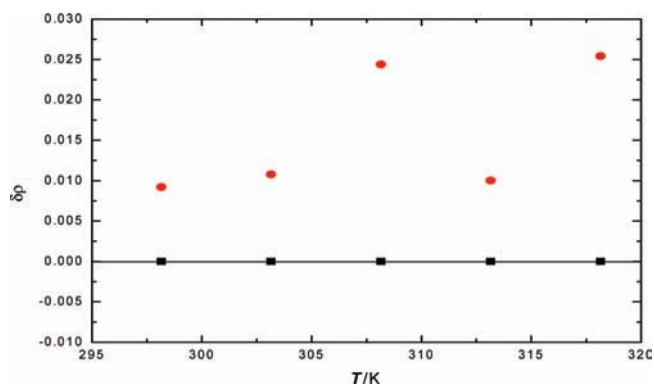


Figure 1. Deviation for ethanol density between the literature data and the present work. $\delta\rho = (\rho_{\text{exp}} - \rho_{\text{lit}})/(\rho_{\text{exp}})$. ■, TRC evaluated data;¹ ●, present work. The deviation for ethanol density between the evaluated data¹ and the present work is up to 2.6 %.

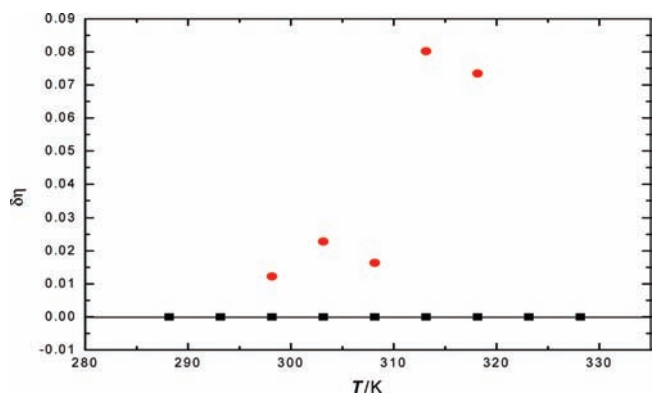


Figure 2. Deviation for ethanol viscosities between the evaluated data and the present work. $\delta\eta = (\eta_{\text{exp}} - \eta_{\text{lit}})/(\eta_{\text{exp}})$. ■, TRC evaluated data;¹ ●, present work. The deviation for ethanol viscosities from the evaluated data¹ is up to 8 %.

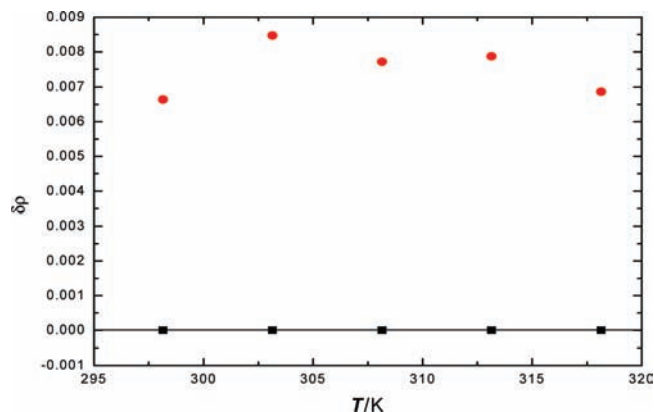


Figure 3. Deviation for 2-bromopropane density between the literature data and the present work. $\delta\rho = (\rho_{\text{exp}} - \rho_{\text{lit}})/(\rho_{\text{exp}})$. ■, Landolt Bornstein evaluated data;² $\rho = 1.81632 \cdot 10^3 - 1.72773 (T/K)^2$; ●, present work. The deviation for 2-bromopropane density from the evaluated data is up to 0.85 %. The uncertainty in the literature data used to derive the evaluated equation was about 0.7 %.²

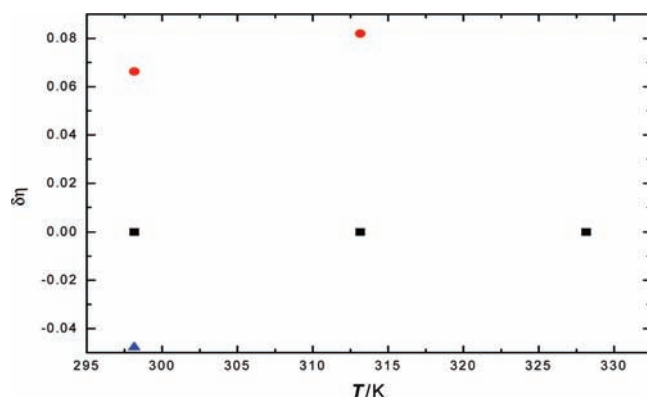


Figure 4. Deviation for 2-bromopropane viscosities between the literature data and the present work. $\delta\eta = (\eta_{\text{exp}} - \eta_{\text{lit}})/(\eta_{\text{exp}})$. ■, Heston et al.;³ ▲, Cupp and Rogers;⁴ ●, present work. The deviation for 2-bromopropane viscosities is up to 8 %. The relative uncertainties in the literature values are probably of the order of 5 %.

Literature Cited

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