**Answers to Reviewer’s comments**

The analysis of thermophysical properties of the binary systems containing ester ethyl acetate and 1-propanol or 1-butanol

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***1. Table 3. The values of the Redlich-Kister parameters describing the same property should have the same number of significant digits which should correspond to standard deviations. There is only one significant digit for the deviation in refractive index. Is it OK?***

Measured data for refractive index are around 1.4 and the published values obtained from the refractometer have 5 decimal places. On the other side values of refractive index deviation are rather small and it doesn’t have sense to present deviations and RK parameters for this property with the same number of significant digits as refractive index because then these values would have 6-7 decimal places. The same procedure is followed for the density, while viscosity values can cover wide range and therefore values from the apparatus have the same number of significant digits, and not decimal places, and uncertainty is presented as relative value.

***2. English of the newly inserted text (lines 165-168, 170-177) should be corrected. The second part (lines 170-177) is obscure. What differences? What are the dots which “are following the same trend …” and so on.***

The text is changed according to the Reviewer’s comment and hopefully clarified (page 23, lines 173-178):

“In the case of both binary systems curves that fit experimental data and literature values for excess molar volume and viscosity deviation have rather similar shapes with maximum deviations 9∙10−8 m3 mol−1 for VE and 0.3 mPa s for Δη. For directly measured properties ρ, η and nD, experimental and literature values are also following the same trend and the agreement is satisfactory for both systems with average deviations of 0.6 kg m-3 for density, 0.03 mPa s for viscosity and 2∙10−3 for refractive index.”

***3. The inserted text “For system with 1-propanol available is data for density at (298.15 – 323.15) K and viscosity at (298.15 – 308.15) K, while for system with 1-butanol beside density at (298.15 – 313.15) K and viscosity at 298.15 K and 303.15 K, data for refractive index can also be found only at 298.15 K.” (lines 165-168). If we believe in information contained in the Detherm database (I believe), the literature excess volume and viscosity data for the 1-propanol ethyl acetate system cover the temperature range (283.15-323.15) K and (283.15-313.15) K. Analogous intervals for the 1-butanol + ethyl acetate systems are (288.15-313.15) K and (298.15 – 308.15) K.***

As already stated, NIST (“National Institute of Standards and Technology”) ThermoLit database is used to acquire literature sources of previously measured data for pure substances as well as for mixtures. We tried to consult the Detherm database, suggested by the Reviewer, and while it is listed which properties are already measured and in which temperature range, it is not clear how to get the information about the papers where this data can be found. The list of papers obtained from NIST database is wider than the one used for comparison since, as we already answered in the previous revision, some papers we weren’t able to acquire or are not written in English language, which we believe would be the same with Detherm database list.

***4. The form of the objective function should be given in the text.***

The objective function used to optimize RK parameters is stated in the text (page 19, lines 153-157), as Reviewer suggested.

***5. Fig. 4. The phrase in the figure caption - “The lines are a guide to the eye or RK correlation.” What lines are “a guide” and what are calculated by the Redlich-Kister equation?***

For directly measured properties lines represent a guide to the eye, while for the deviation properties lines are obtained from the RK correlation. Following the comment of the Reviewer and to avoid misunderstandings this is also emphasized after the Figures 4 and 5 (page 24, lines 187-188 and page 25, lines 192-193).

We also answered to the following remarks which Reviewer classified as advices and not strict recommendations.

***If the temperature dependence should be included in the correlation equation? The model is being fitted to deduce a continuous dependence from discrete experimental points. The original form of the Redlich-Kister is dependent on mole fractions only. If the data are acquired at several temperatures, it is also recommended to use a temperature dependence. The practical significance is obvious – as a result, the model description is not limited to one or a few temperatures but may be used for a certain continuous range of the temperatures.***

The practical significance of the model with the parameters determined for the temperature range is obvious, but since Redlich-Kister equation is used as a basic model to check the consistency of experimental points and the correctness of the experiment itself, it is better and should be used for correlation on each temperature.

***The discussion on molecular interactions. The systems ethyl acetate + (1-propanol or 1-butanol) were extensively studied experimentally and numerous physicochemical data of a different kind exist. I cannot see any reason to neglect them and restrict discussion to the properties measured by the authors only. The excess enthalpy is of special significance as it provides considerably more information than the parameters measured the authors.***

The discussion is based on the analysis of the properties obtained from the experimental measurements presented in this manuscript with the reference to the structure of the investigated compounds and supplemented with conclusions previously reported in the literature.