

Interactive comment on “Formation of 3-methyl-1,2,3-butanetricarboxylic acid via gas phase oxidation of pinonic acid – a mass spectrometric study of SOA aging” by L. Müller et al.

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The authors thank for the comment and would like to respond below.

In table 1 when comparing SIMPOL results with experimental data the authors use data from Bilde and Pandis (2001), but that experimental data is solid state whereas SIMPOL gives liquid phase vapour pressures. We have measured pinonic acid and the (sub-cooled) liquid VP is about 6 times higher than the solid VP at 298 K, and 8 times higher at 283 K. I suspect pinic acid would be similar. We also have temperature

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dependant data for pinonic which gives the P(solid) at 283 K as 1.25×10^{-5} Pa and P(liquid) as 1.1×10^{-4} Pa.

Reply : We thank for the hint to the recent paper on vapour pressure estimations. Definitely in future work also the more recent estimations of vapour pressures (including those from the Booth et al.) should be used for modeling SOA formation and ageing. However, due to the still remaining uncertainties in vapour pressure estimations, unknown activity coefficients of the compounds of interest as well as the fact that the main conclusion of the manuscript (formation of MBTCA by gas phase oxidation of pinonic acid) will not change using the updated numbers, we stay with the vapour pressure estimations given in the paper.

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