

## ***Interactive comment on “Henry’s law constants of diacids and hydroxypolyacids: recommended values” by S. Compernelle and J.-F. Müller***

**R. Sander (Referee)**

rolf.sander@mpic.de

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Compernelle et al. investigate Henry’s law constants of diacids and hydroxypolyacids. The study is very interesting and I recommend publication in ACP after considering several minor changes as described below.

### **General Comments**

- There are two fundamental types of Henry’s law constants: They can either be defined as a solubility (i.e., aqueous phase divided by gas phase) or as a volatility

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(gas phase / aqueous phase). A statement like “the HLC appears to be higher than. . .” in the abstract is meaningless unless it is specified which type of HLC it refers to.

- Regarding experimental data, it could be mentioned that Mentel et al. measured a value of 1.9E9 M/atm for glutaric acid: Mentel, T. F., Folkers, M., Tillmann, R., Henk, H., Wahner, A., Otjes, R., Blom, M., and ten Brink, H. M.: Determination of the Henry coefficients for organic aerosol components, *Geophys. Res. Abstr.*, 6, 1525, 2004
- Normally, the supplement is used for data sets, movies, animations, etc. Here, the supplement contains text describing how the activity coefficient ratios were obtained. I don’t see the reason for separating this from the main paper. I suggest to merge the supplement into the main text.

### **Specific comments**

- The title promises recommended values. However, Table 3 only lists several options depending on the choice of partial pressure. If the authors have a suggestion which of them are the best values those should be indicated in the table. Otherwise I suggest to remove the phrase “recommended values” from the title.
- In the abstract it is mentioned that “the HLC of diacids appear to be higher than estimated by the often cited review work of Saxena and Hildemann (1996).” This, however, is not true for malic acid and tartaric acid, which are also diacids.
- What is the meaning of the citation “Meylan and Howard (2000)” for Henry’s law constants in Table 1? As far as I know, Meylan and Howard (2000) refers to the EPI Suite software, not to a paper. Are these values calculated by that software?

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