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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Study of OH-initiated degradation of 2-aminoethanol" *by* M. Karl et al.

Anonymous Referee #1

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This manuscript reports the results of three EUPHORE environmental chamber experiments with 2-aminoethanol (MEA), and gives the first reported measurement of its rate constant for reaction with OH radicals. A mechanism for the gas-phase reaction of MEA with OH and formation in the three experiments is also discussed, and the role of loss of MEA to particles was taken into account in the derivation of the OH rate constant. The scientific approach and presentation quality are acceptable, though I suspect some of the discussion could be shortened without significantly affecting the utility of the paper. Except as also indicated below, revised manuscript adequately addresses the concerns and criticisms gave in my review of the previous draft.

One criticism I still have is that they model their SOA data using the two-product model, but they show on Figure 2 that the simpler one-product model fits the data equally well if not slightly better. When modeling using a parameterized model simpler is always better, especially when the two models are based on the same scientific formulation.

Parameters in the two-product model do not really mean anything if the data are fit equally well with fewer parameters. Although it won't affect the results because the models give essentially the same prediction, I think they should remove reference to the two-product model except to state that it was considered and found not to fit the data any better. The one-product model may indeed be more appropriate if the SOA is dominated by a single product or if all products have similar volatility. In this regard, it might also be of interest to discuss the Kp value derived from the one-product model relates to the Kp values expected for the nitrate salt.

It would have been good to include in Table 1 the initial reactant concentrations, though these could be inferred from the figures showing the data.

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