

Interactive comment on “Size distribution of alkyl amines in continental particulate matter and their online detection in the gas and particle phase” by T. C. VandenBoer et al.

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This work reports the chemical measurements of amines in both gas and the particle phase, I would like to draw the attention of the authors on our recent work on the amines, which contains a comprehensive review of the current knowledge of atmospheric amines, and their thermodynamic properties and gas/particle partitioning.

Ge, X., Wexler, A. S., and Clegg, S. L.: Atmospheric Amines – Part I. A review, Atmos. Environ., doi:10.1016/j.atmosenv.2010.1010.1012, in press, 2010a

Ge, X., Wexler, A. S., and Clegg, S. L.: Atmospheric Amines –Part II. Thermodynamic properties and gas/particle partitioning, Atmos. Environ., C10355

doi:10.1016/j.atmosenv.2010.1010.1013, in press, 2010b.

(1) The part I gives a wealthy knowledge of the sources and dynamics of amines in the atmosphere, a summary of a lot of work on this topic, i am sure this can serve as a good supplement for the authors to improve the introduction of this paper.

(2) The part II provides the thermodynamic properties (Henry's Law constant, pka, solubility, etc..) of a large number of amines, of course including the most common short-chain aliphatic amines. It also proves that for several common amines, the tendency to partition to the particle phase is similar to or greater than that of ammonia by comparing their acid-base reaction dissociation constants with ammonia. At higher RH, the formation of aminium salts (including nitrates) is more likely, and this partitioning is also strongly dependent upon pH and is greatest for acidic aerosols.

I hope this work can help the authors to increase the value of this paper.

Another technical comments:

reference: Junninen, H., et al: A high-resolution mass spectrometer to measure atmospheric ion composition, Atmos. Meas. Tech. Discuss., 3, 599–636, 25
doi:10.5194/amtd-3-599-2010, 2010

should be updated as:

Atmos. Meas. Tech., 3, 1039-1053, 2010

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 27435, 2010.