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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Characterization of the sources and processes of organic and inorganic aerosols in New York City with a high-resolution time-of-flight aerosol mass spectrometer" *by* Y.-L. Sun et al.

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Since this work reports the nitrogen-enricehed OA(NOA), which is characterized as amines, I would like to draw the attention of the authors on a recent work on the amines, which contains a comprehensive review of the current knowledge of atmospheric amines, and their thermodynamic properties, especially their acid-base reaction dissociation constants(also including NH4NO3)

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., 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, like from animal husbandry, ocean and industrial operations etc., which may help the authors to identify the sources of NOA in NYC.

(2)The part II 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 explain the existence of amines in the particle.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 22669, 2010.