

Liquid-liquid phase separation in secondary organic aerosol particles produced from α -pinene photo-oxidation and α -pinene photo-oxidation with ammonia

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Information of the phase states of secondary organic aerosols (SOA) is required to predict their cloud condensation nuclei properties. Recent studies of Renbaum-Wolff et al. (2016), Rastak et al (2017), and Song et al. (2017) observed liquid-liquid phase separation at greater than $\sim 95\%$ relative humidity in SOA particles produced from α -pinene ozonolysis, β -caryophyllene ozonolysis, limonene ozonolysis while they did not observe liquid-liquid phase separation in SOA particles produced from toluene photo-oxidation and isoprene photo-oxidation [1][2][3]. In this study, we investigated liquid-liquid phase separation in SOA particles produced from α -pinene photo-oxidation and α -pinene photo-oxidation with NH_3 . During humidity cycles, liquid-liquid phase separation did not occur in the particles of α -pinene photo-oxidation and α -pinene photo-oxidation with NH_3 . The results and implications will be presented.