

2.109 Viscosities of secondary organic aerosols derived from benzene, p-xylene, and diesel fuel: Measurements and predictions.

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Abstract:

In spite of importance for particle size distributions, mass concentrations, and chemical reactions, the viscosity of secondary organic aerosols (SOA) remain uncertain. In this study, we measured viscosities at 294 ± 1 K of SOA particles produced by photo-oxidation of benzene, p-xylene, and diesel fuel for relative humidities $\leq \sim 50$ % using a poke-flow technique combined with fluid simulations. Viscosity of benzene, xylene, and diesel SOA were also predicted based on the glass transition temperatures of SOA

compounds and compared with the measured viscosities. The results and atmospheric implication will be presented.