



## **Hygroscopic properties of Secondary Organic Aerosol generated in a smog chamber**

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Secondary organic aerosol (SOA) was formed in a reaction chamber by irradiation of various precursor gases including 1,3,5-trimethylbenzene, isoprene and  $\alpha$ -pinene in the presence of NO<sub>x</sub>. Due to continued oxidation processes as well as oligomerization of the oxidation products within the particles, physical properties of the particle are expected to change with irradiation time. A new Hygroscopicity Tandem Differential Mobility Analyzer (HTDMA) which allowed measurements up to 95% relative humidity was used to study the hygroscopic properties of these SOA as a function of particle size and age. Experiments were performed for periods between 8 and 24 hours. Results show that the hygroscopic properties of the SOA are dependent on the precursor. For all three systems investigated in this study, the chemical transformation in the aerosol leads to an increase in the growth factors of the SOA with time. In this paper, the hygroscopic properties of different chamber-generated organic aerosols will be compared and discussed as a function of aging.