Supplementary Material

Chamber investigation of the formation and transformation of secondary organic aerosol in mixtures of biogenic and anthropogenic volatile organic compounds

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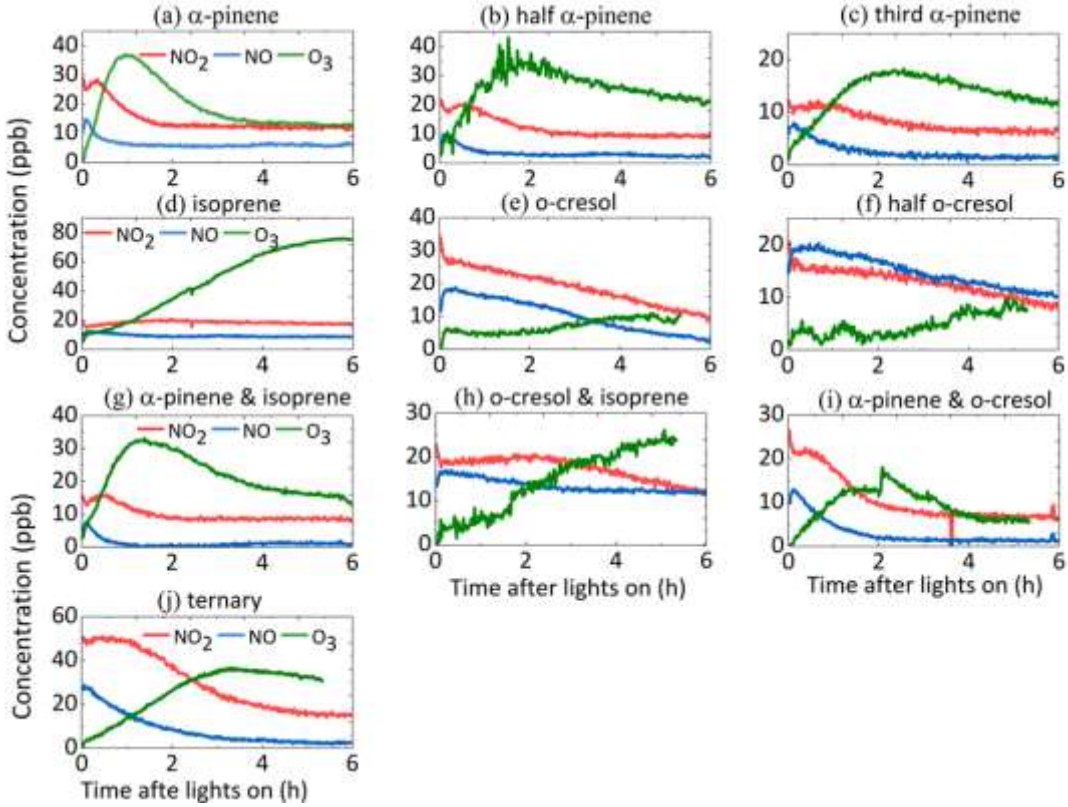

Figure S1: NO_2, NO and O_3 time series in all single and mixed VOC systems (example representative experiments)

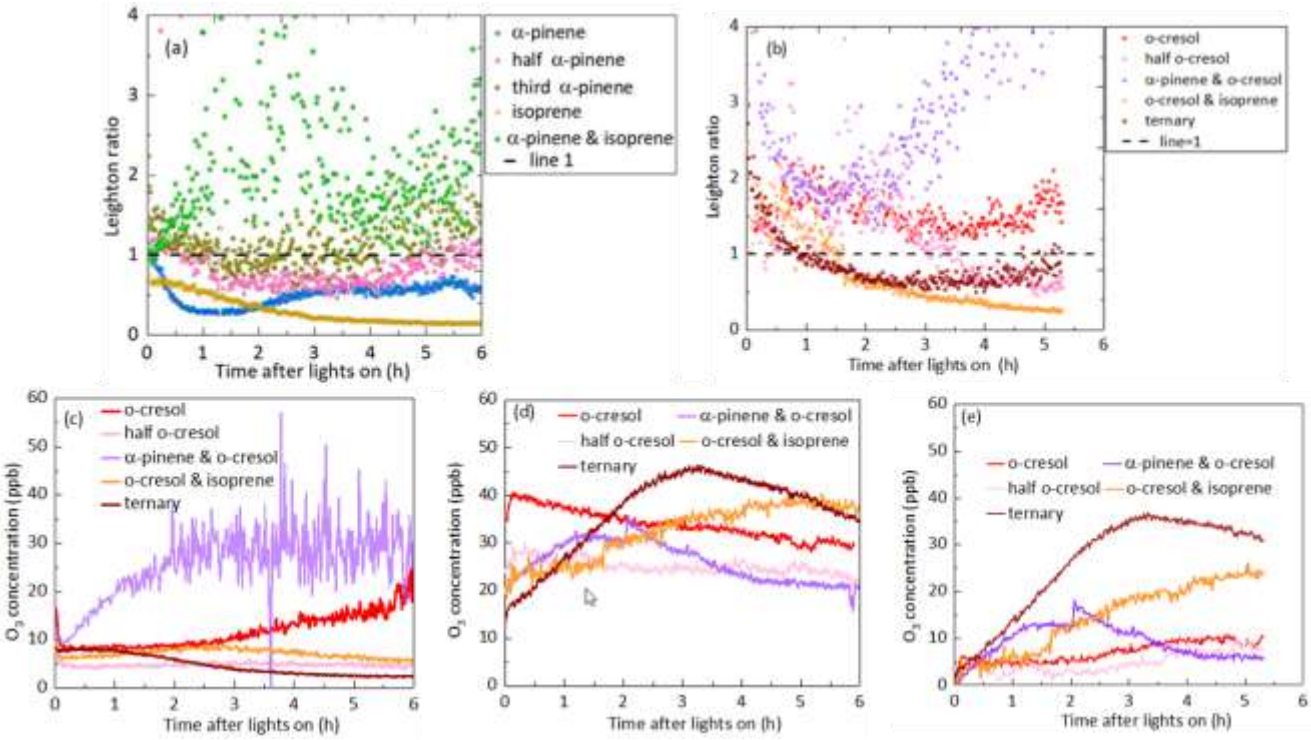

Figure S2: Leighton ratios in all systems and O_3 concentrations in all *o*-cresol containing systems. (a) Leighton ratio in all non-*o*-cresol containing systems, (b) Leighton ratio in all *o*-cresol containing systems, (c) O_3 concentrations calculated assuming PSS in the *o*-cresol containing systems, (d) measured O_3 concentrations from O_3 analyser in all *o*-cresol containing systems, (e) corrected O_3 concentrations based on CIMS *o*-cresol signal in all *o*-cresol containing systems.

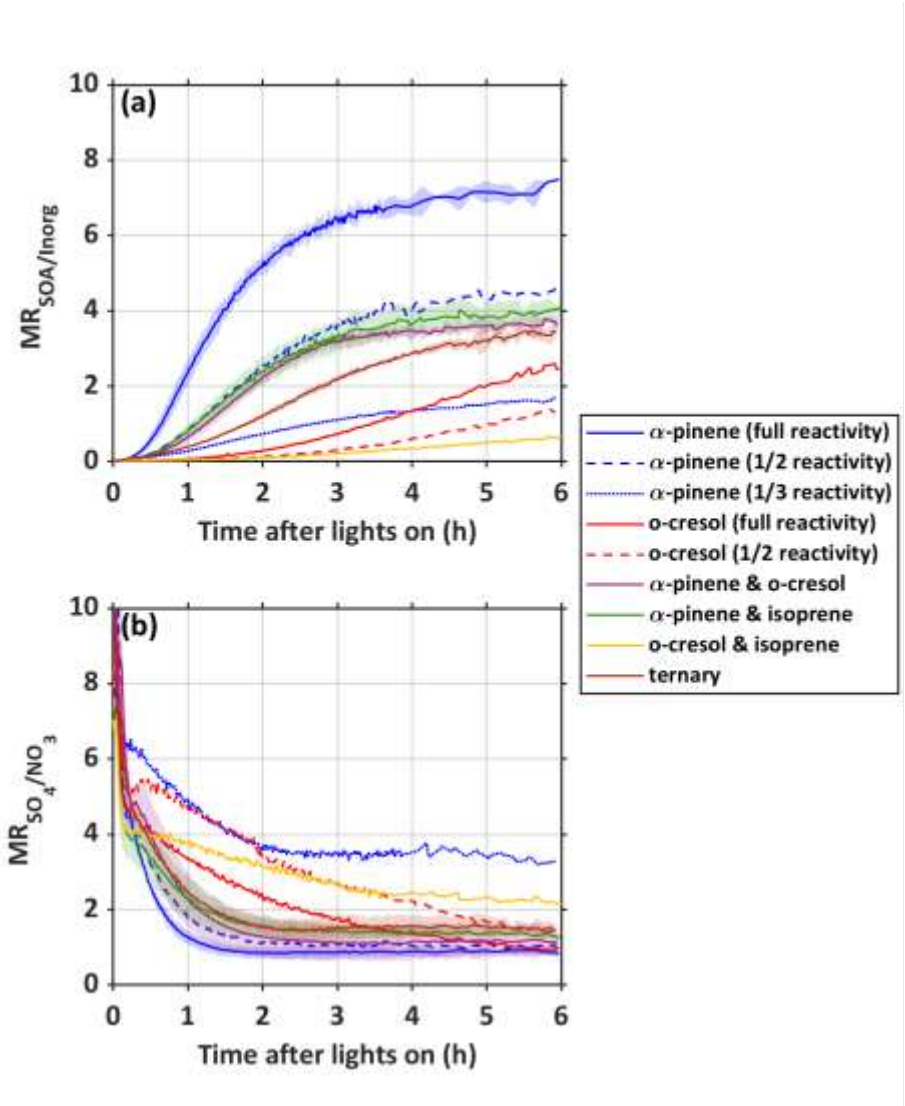

Figure S3: Total particle wall loss corrected particle component mass ratios in each system showing inorganic and organic component evolution. Panel a) shows the increase in SOA:inorg and b) shows the decrease in SO_4^{2-}: NO_3^-, throughout the experiment in each system coloured consistently with Figure 2 and 3. Note that NH_4^+ was found to ion balance the sum of NO_3^- :SO_4^{2-} in all experiments within measurement uncertainty

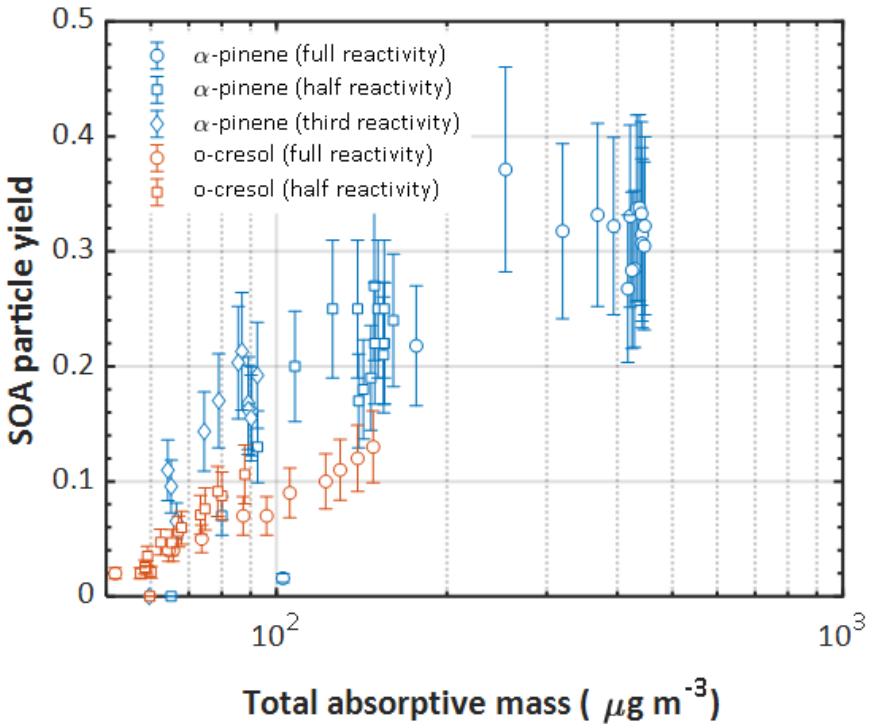

Figure S4: SOA particle mass yield as a function of total absorptive mass, including the remaining inorganic seed mass, in the single precursor □-pinene and *o*-cresol experiments at all initial concentrations. Error bars represent the propagated uncertainties in all measurements and in the particle wall loss corrections applied.

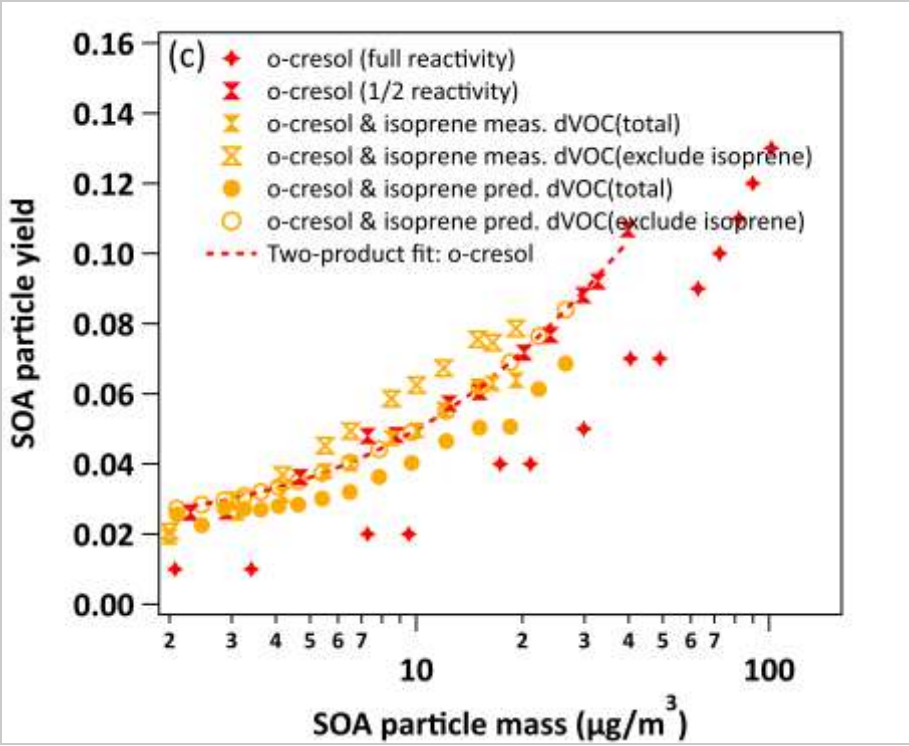

Figure S5: Expanded plot of yield data for the o-cresol / isoprene mixture (with 2-product yield curves o-cresol single VOC experiment). Yields "predicted" from the linear combination of yields from the individual VOC experiment using equation 4 are shown for the mixture.

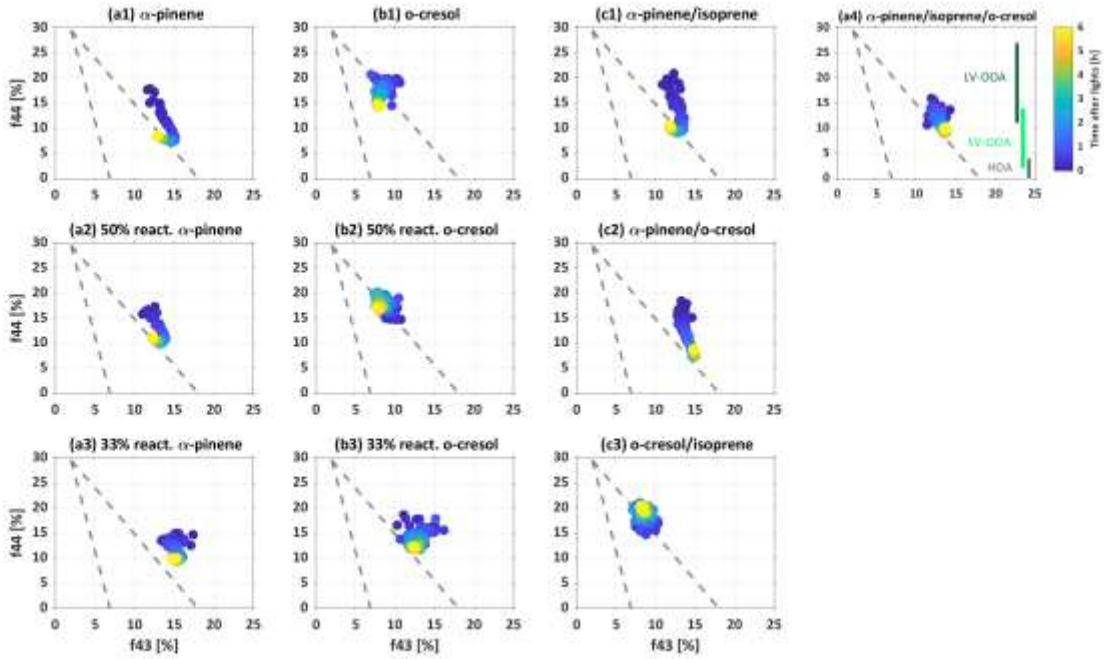

Figure S6: Trajectory of AMS f_{44} vs f_{43} in all systems