

***Interactive comment on “Physico-chemical
characterization of secondary organic aerosol
derived from catechol and guaiacol as a model
substance for atmospheric humic-like
substances” by J. Ofner et al.***

Anonymous Referee #1

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This paper describes a thorough analytical characterization of SOA formed in a smog chamber from catechol and guaiacol. Several analytical methods were used to follow the formation and destruction of chemical functional groups in the SOA (IR and UV spectroscopy, mass spectrometry). The results suggest that high molecular weight compounds are formed in this reaction that may have some chemical signatures that resemble humic substances. The formation is dependent on conditions, but not much

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has been discussed on this topic. The paper starts with a rather (too)long introduction that does not clearly outline the issues that will be discussed and does not provide a clear presentation of the hypothesis or goal of the study. I believe that the introduction can be cut by 30-50%. The experimental section is clear and it is followed by very detailed results section. The conclusions are also clear, but are not discussed thoroughly in the atmospheric context. I have expected to see more effort in characterizing actual atmospheric samples and comparing them to the SOA of this study to put it in an atmospheric context. In addition to that authors do not discuss possible effects of the high concentrations used in the reaction, or compare to other experiments that tried to synthesize "artificial HUMIC substances. At the end, while the paper may provide a good baseline analytical work of these SOA, it reads like a technical report and does not move forward to test a real atmospheric issue.

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