

***Interactive comment on* “Secondary organic aerosol from chlorine-initiated oxidation of isoprene” by Dongyu S. Wang and Lea Hildebrandt Ruiz**

Anonymous Referee #3

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The manuscript "Secondary organic aerosol from chlorine-initiated oxidation of isoprene" by Wang and Ruiz reports SOA yields ranging from 8 to 36% derived from chlorine-initiated isoprene oxidation. These yields are obtained by two different types of aerosol smog-chamber experiments, continuous and initial chlorine injection. The presented work is of highest scientific quality and the manuscript is well written. I therefore recommend publication in ACP after concerning the following minor comments:

Introduction: The authors should add a Paragraph to the introduction about natural and anthropogenic halogen sources and sinks in the atmosphere to introduce this topic to the readers; e.g. by: Simpson et al., Tropospheric Halogen Chemistry: Sources,

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Discussion paper



Cycling, and Impacts, Chem. Reviews, 2015. Roland von Glasow, Wider role for airborne chlorine, nature, 464, 2010. Finlayson-Pitts, Halogens in the Troposphere, Anal. Chem., 82, 770-776, 2010. Buxmann et al., Consumption of reactive halogen species from sea-salt aerosol by secondary organic aerosol: slowing down the bromine explosion, Environ. Chem., 12, 476-488, 2015.

p2 line 30: Please add the characteristics of the UVA light source: actinic flux, quantified UV/VIS spectrum.

P3 line 31 “loss of organic vapors to Teflon surfaces” Teflon films, used for aerosol smog-chambers, are known to store various gaseous species, especially NO_x, which is released from the Teflon film by UV radiation and increased temperatures. Has this been observed or taken into account? Please add a related statement to the manuscript.

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-342>, 2017.

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