

# ***Interactive comment on “Rate coefficients for reactions of OH with aromatic and aliphatic volatile organic compounds determined by the Multivariate Relative Rate Technique” by Jacob T. Shaw et al.***

## **Anonymous Referee #2**

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This is the reviewer report for manuscript entitled “Rate coefficients for reactions of OH with aromatic and aliphatic volatile organic compounds determined by the Multivariate Relative Rate Technique” by Jacob T. Shaw, Andrew R. Rickard, Mike J. Newland and Terry J. Dillon.

The paper describes an experimental gas-phase kinetic study of reactions of VOC with OH at 296 K. Particularly, the multivariate relative rate technique, developed by the authors in previous works, was employed here to determine thirty-five rate coefficients, five of which were determined for the first time. The results are in good agreement with

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available literature values and SAR estimations, which indicates that this methodology is appropriate to determine simultaneously rate coefficients of VOC mixtures with OH. In this work also the sensitivity of this technique was improved and rate coefficients for slower reacting VOC with OH were determined.

In my opinion, this paper is well structured and comprehensive and it represents a significant contribution to the atmospheric chemistry. I support publishing the paper after minor corrections suggested below.

In Section 3.1, Figure S2 is mentioned in the text but Figure S1 is never mentioned in the manuscript. Maybe Figure S1 should be mentioned in the text of Section 2 (Methodology). Page 8, line 17, Figure S2 is related with Mixture 2 but caption of Figure S2 mentions Mixture 1, it should be checked. Figure S4 of the supplemental material (referred to Mixture 3) is never mentioned in the manuscript. Table 2 caption should be checked because it mentions Figure S3 for Mixture 2, but Figure S3 caption mentions Mixture 1.

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