

Interactive comment on “Kinetic isotope effects in the gas phase reactions of OH and Cl with CH₃Cl, CD₃Cl, and ¹³CH₃Cl” by A. A. Gola et al.

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The first comment of the anonymous referee addresses the uncertainties quoted. We have quantified the possible systematic errors from photolysis, dark chemistry and heterogeneous reactions. Direct photolysis does not take place (was not observed) and the “dark chemistry”/heterogeneous reactions in the reactor are such that their contribution to the KIEs are less than the statistical errors from the analyses. This information will be included in the final version of the communication.

The second comment of the referee addresses possible direct photolysis of CH₃Cl in the reactor. The TUV 30W photolysis lamp does not emit radiation below 254 nm (the 185 nm line of Hg is filtered out by the lamp glass and the absorption of CH₃Cl is less than $6 \times 10^{-24} \text{ cm}^2 \text{ molecule}^{-1}$ at wavelengths above 236 nm. This information will be

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included in the final communication.

The third comment relates to the possible interference of OH radicals generated via reaction of $\text{CH}_2\text{Cl} + \text{O}_2$ in the Cl atom experiments. This issue is fully addressed in section 2.4 of the communication. The possible loss of CH_3Cl in the Cl atom experiments due to reactions with OH radicals was investigated by a FACSIMILE model which includes all the reactions that the referee quotes (plus many more). The result of the model is included in the communication: less than 1 o/oo of the total loss of CH_3Cl in the Cl atom experiments is due to reaction with OH.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 3873, 2005.

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