Atmos. Chem. Phys. Discuss., 9, C8024–C8026, 2009
www.atmos-chem-phys-discuss.net/9/C8024/2009/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Measurements of OH and HO_2 yields from the gas phase ozonolysis of isoprene" *by* T. L. Malkin et al.

T. L. Malkin et al.

chtlm@leeds.ac.uk

Received and published: 8 December 2009

Referee 2: Substantive comment, However, it's not clear to me exactly what the authors mean by HO2 yield – direct formation from the CI or from alkoxy radicals downstream of OH formation or from something else? I think a more detailed discussion of the HO2 chemistry would be helpful.

Author: Figure 1 (or 12 in revised paper) has been produce and the text has been improved consequently.

Referee 2: Other comments The Criegee intermediate is referred to throughout the manuscript as a biradical. My understanding is that it is generally considered to be a carbonyl oxide with significant double bond character.

Author: Corrected accordingly

Referee 2: Equation 2 assumes that [tmb] is constant over the course of the experiment. Perhaps this is worth stating here. [C5H8] should be [C5H8]0 in this equation.

Author: Corrected accordingly

Referee 2: Page 17590, lines 6-7. If the OH yield is about 25%, and if isoprene is in excess here, why is the stoichiometry 1:1? Shouldn't significantly more isoprene react away compared to ozone?

Author: In the stoichiometry experiments, the isoprene isn't in excess to the ozone, and there is such an excess of cyclohexane that >95% of the OH is scavenged.

Referee 2: Page 17596, lines 6-10. In the FAGE experiments, the RODA/ROPA plots seem to indicate that HO2 + O3 is a significant source of OH. It is not obvious to me why the OH yield can be determined independently of the HO2 yield, as is implied. Perhaps this could be clarified here.

Author: The OH yield was determined independently of the HO2 yield by keeping the ratios of the non-OH product channels to each other the same, but making sure they made up the remaining fraction of the product branching ratio. Further discussion of this had been included in the revised version of this article.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 17579, 2009.

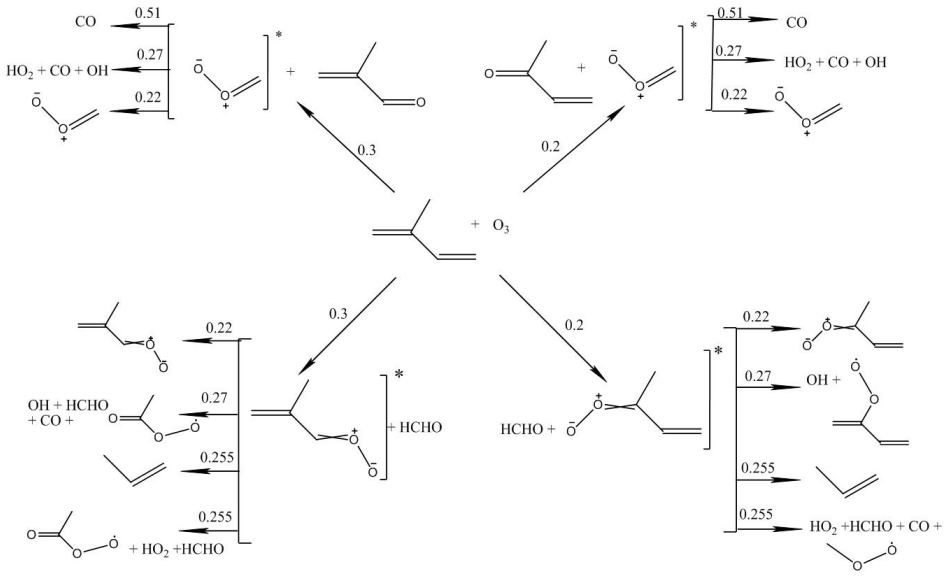

Fig. 1. Full isoprene ozonolysis chemistry with MCM based yields