Response on the Comment on “Kinetics of the reactions of Cl atoms with 2-buten-1-ol, 2-methyl-2-propen-1-ol, and 3-methyl-2-buten-1-ol as a function of temperature” by Rodriguez et al. (J. Atmos. Chem. (2008) 59:187–197)

Diana Rodriguez · Ana Rodriguez · Amparo Soto ·
Alfonso Aranda · Yolanda Diaz-de-Mera ·
Alberto Notario

Received: 18 February 2010 / Accepted: 23 February 2010 /
Published online: 19 March 2010
© Springer Science+Business Media B.V. 2010

Keywords Alcohol · Cl · Kinetic · Smog chamber

Concerning the title reactions, we have checked that the experimental system was not properly operated at low temperatures. This fact probably led to wrong results at this range of temperatures (285–255 K). So, we have carried out new experiments at low temperatures. Because of the time urgency required to publish this comment, we could only carry out the new experiments with MBO321 and MPO221. Essentially, no temperature dependence for the reaction of Cl atoms with these unsaturated alcohols is observed over the studied temperature range. So, the values of the rate constants at room temperature for MBO321 and MPO221 were $(4.0 \pm 0.6) \times 10^{-10}$ and $(2.2 \pm 0.4) \times 10^{-10}$ cm³ molecule⁻¹ s⁻¹, respectively; and the average rate constants (in unit of cm³ molecule⁻¹ s⁻¹) obtained between 285 and 255 K were: MBO321 $(4.2 \pm 0.7) \times 10^{-10}$ and MPO221 $(2.2 \pm 0.4) \times 10^{-10}$. For the crotyl alcohol reaction, it should only be considered the rate constant at room temperature, $k = (3.12 \pm 0.64) \times 10^{-10}$ cm³ molecule⁻¹ s⁻¹.

D. Rodriguez (✉) · A. Rodriguez · A. Soto
Facultad de CC Medio Ambiente, Universidad de Castilla La Mancha, Avenida Carlos III, s/n,
45071 Toledo, Spain
e-mail: diana.rodriguez@uclm.es

A. Aranda · Y. Diaz-de-Mera
Facultad de CC Químicas, Universidad de Castilla La Mancha, Avenida Camilo José Cela, nº 10,
13071 Ciudad Real, Spain

A. Notario
Instituto de Tecnologías Química y Medioambiental (ITQUIMA), Universidad de Castilla La Mancha,
Avenida Camilo José Cela, s/n, 13071 Ciudad Real, Spain