Supplementary information

Cl-initiated oxidation of methacrolein under NOx-free conditions studied by VUV photoionization mass spectrometry†

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Table S1. Assignment of the mass peaks of the secondary products and their fragment ions

m/z	molecular formula	assignment
140	$C_4H_6O^{35}Cl_2$	
142	$C_4H_6O^{35}Cl^{37}Cl$	$C_4H_6OCl + Cl_2 \rightarrow C_4H_6OCl_2 + Cl$
144	$C_4H_6O^{37}Cl_2$	
111	$C_3H_5{}^{35}Cl_2$	$C_4H_6OCl_2^+$ fragment:
113	$C_3H_5{}^{35}Cl^{37}Cl$	$C_3H_5Cl_2^+$ [-CHO]
115	$C_3H_5{}^{37}Cl_2$	
76	$C_3H_5{}^{35}Cl$	$C_4H_6OCl_2^+$ fragment:
78	$C_3H_5{}^{37}Cl$	$C_3H_5Cl^+$ [-CHOCl]
104	$C_4H_5O^{35}Cl$	$C_4H_5O + Cl_2 \rightarrow C_4H_5OCl + Cl$
106	$C_4H_5O^{37}Cl$	

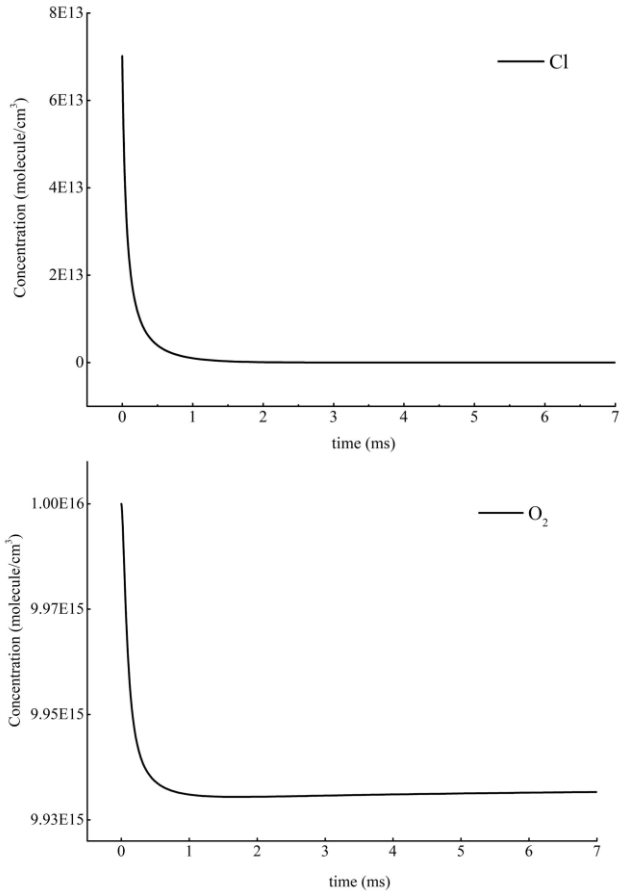

Fig. S1. The theoretical time behavior of reactants (O_2 and Cl atoms) in the Cl-initiated oxidation of MACR.

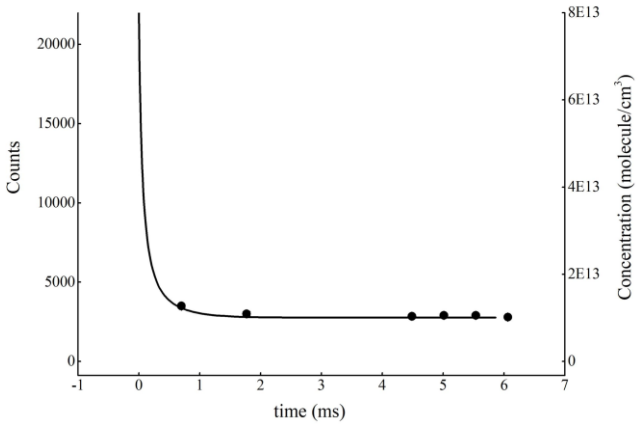

Fig. S2. The experimental (dots) and theoretical (lines) time behavior of reactant (MACR) in the Cl-initiated oxidation of MACR.