

## **Supporting Information**

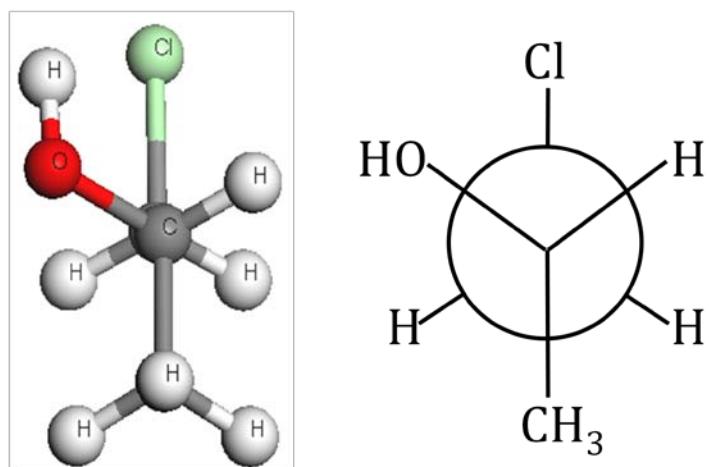
### **Comparison of the Chemistry of ClCH<sub>2</sub>CH(CH<sub>3</sub>)OH and ClCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH on Cu(100) and O/Cu(100)**

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## Scheme S1



The *g,g'*-conformer of ClCH<sub>2</sub>CH(CH<sub>3</sub>)OH

**0.8L CICH<sub>2</sub>CH(CH<sub>3</sub>)OH/Cu(100)**

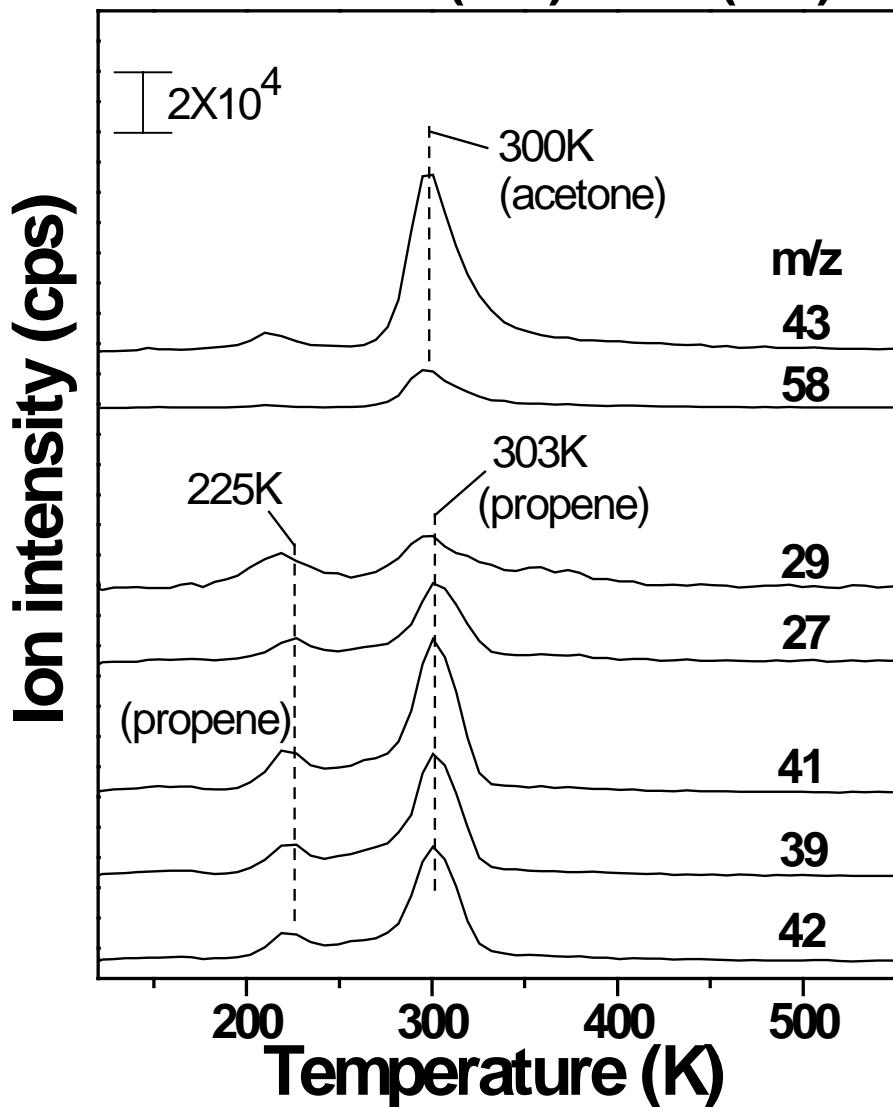


Figure S1. TPR/D spectra showing the evolution of propene and acetone on the basis of the fragmentation patterns.

ClCH2CH(CH3)OH/Cu(100)

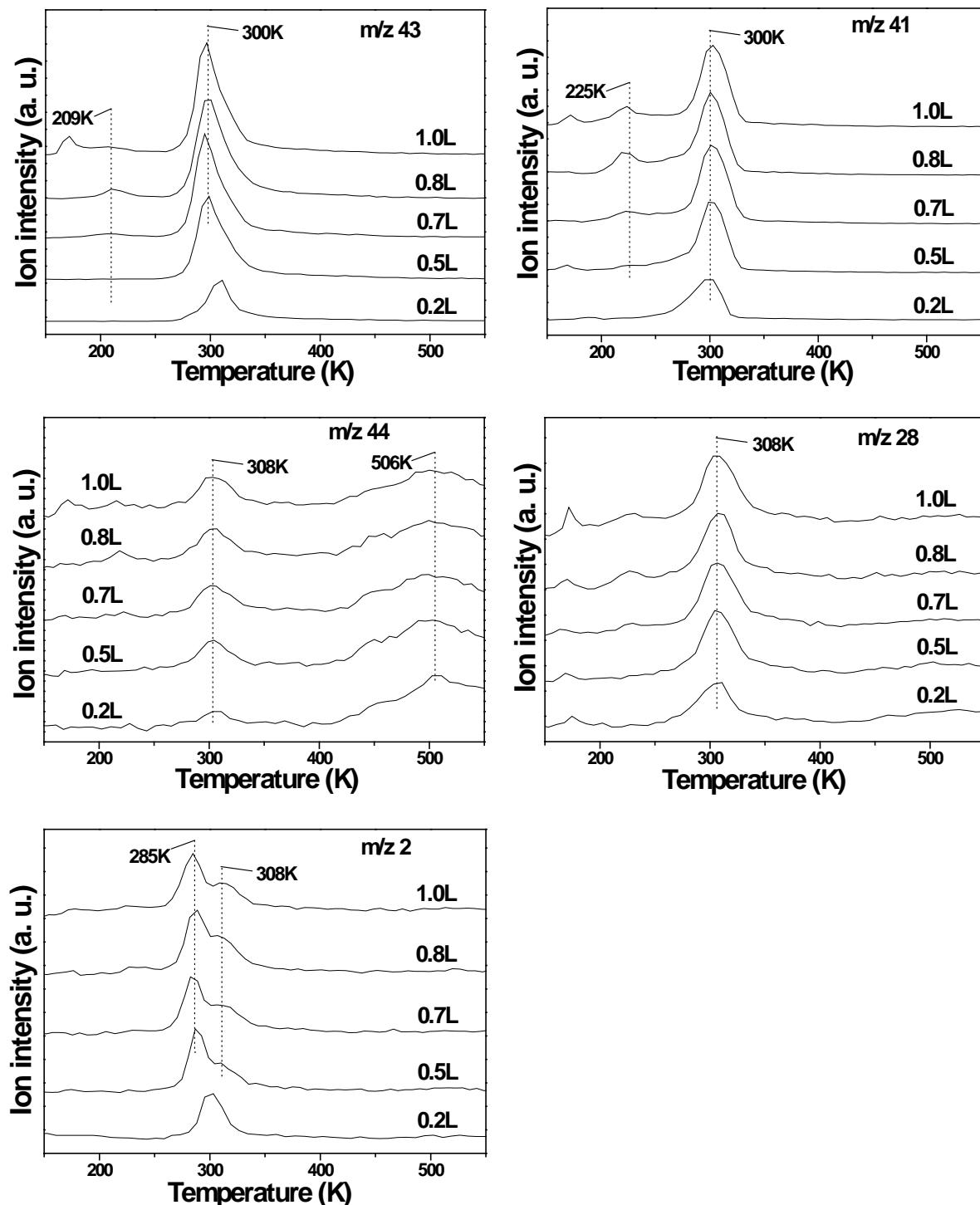


Figure S2. TPR/D spectra of ClCH2CH(CH3)OH/Cu(100) at different exposures.

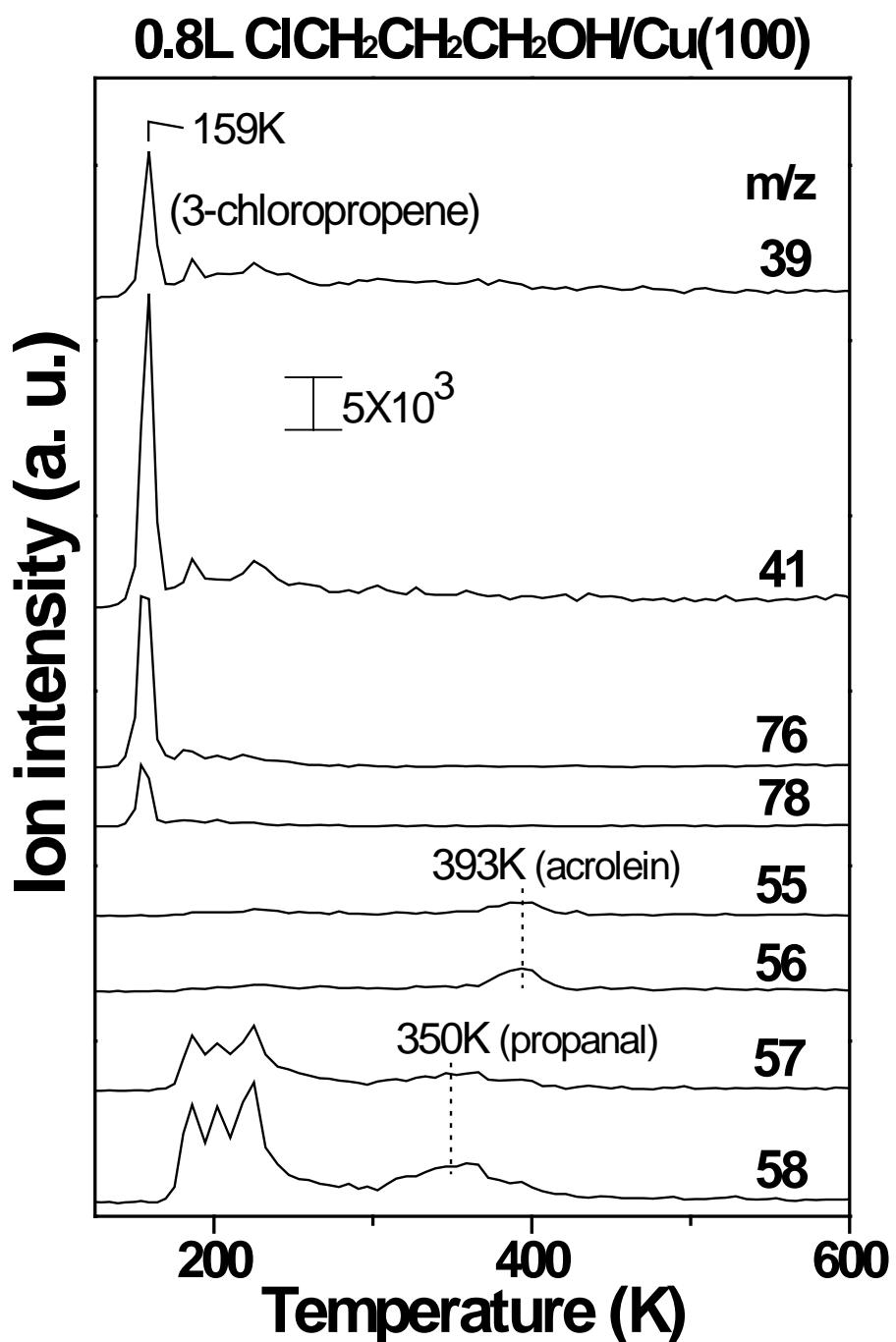


Figure S3. Temperature-programmed reaction/desorption spectra of 0.8 L 3-chloro-1-propanol on Cu(100).

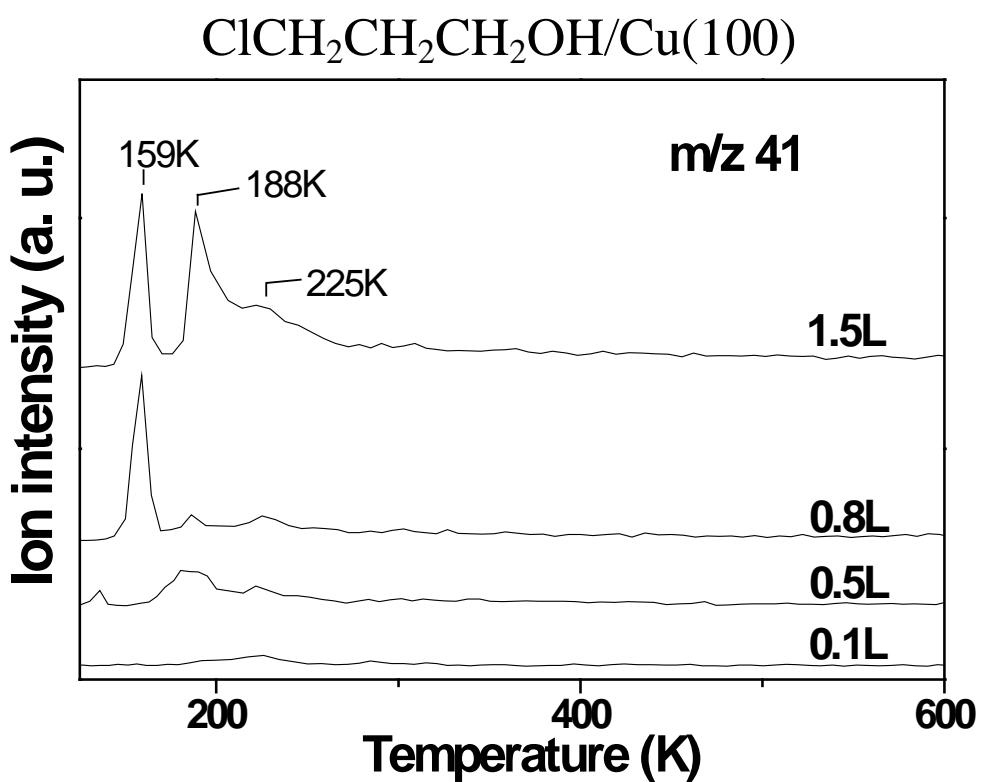


Figure S4. Temperature-programmed reaction/desorption spectra of 3-chloro-1-propanol on Cu(100) at different exposures, showing the formation of 3-chloro-1-propene at 159K.