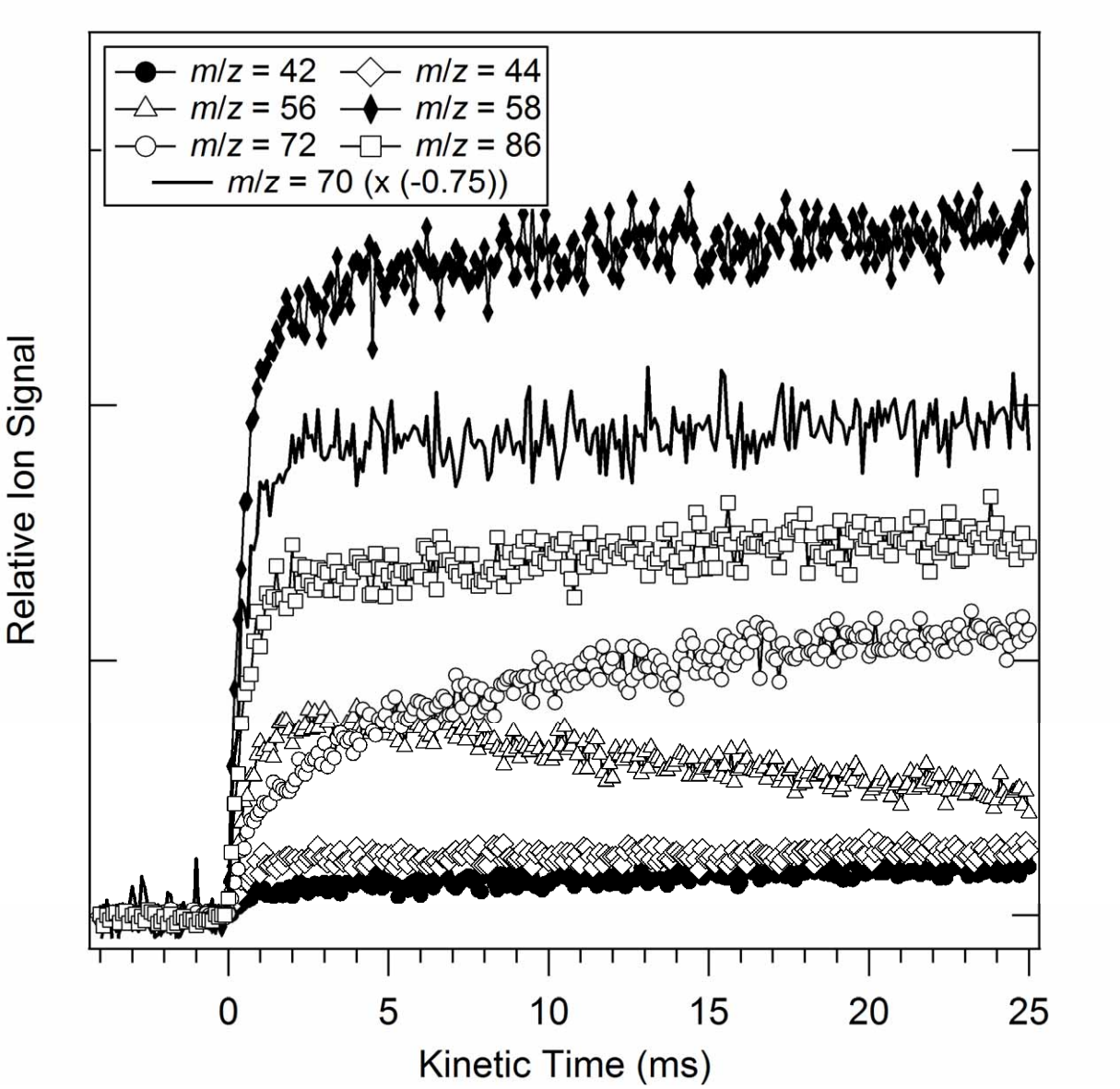

Figure S1: Time profiles of *m*/*z* = 42, 44, 56, 58, 70, 72, and 86 at 550 K, obtained by integration over photon energies from 8.0 – 10.4 eV. The consumption of isopentanol is shown by the profile of its daughter ion at *m*/*z* = 70, shown multiplied by (-0.75).

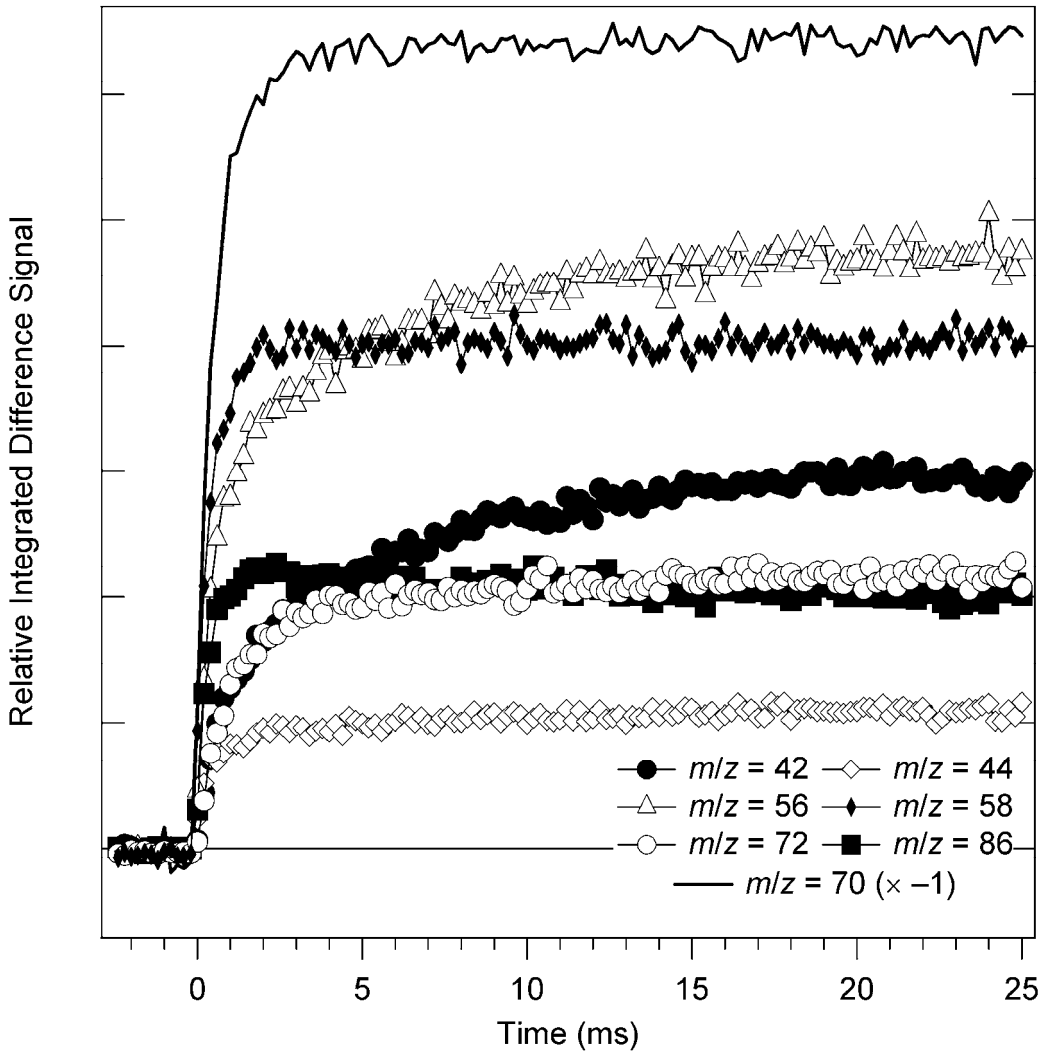

Figure S2: Time profiles of m/z = 42, 44, 56, 58, 70, 72, and 86 at 650 K, obtained by integration over photon energies from 8.0 – 10.4 eV. The consumption of isopentanol is shown by the profile of its daughter ion at m/z = 70 (shown multiplied by (–1)).

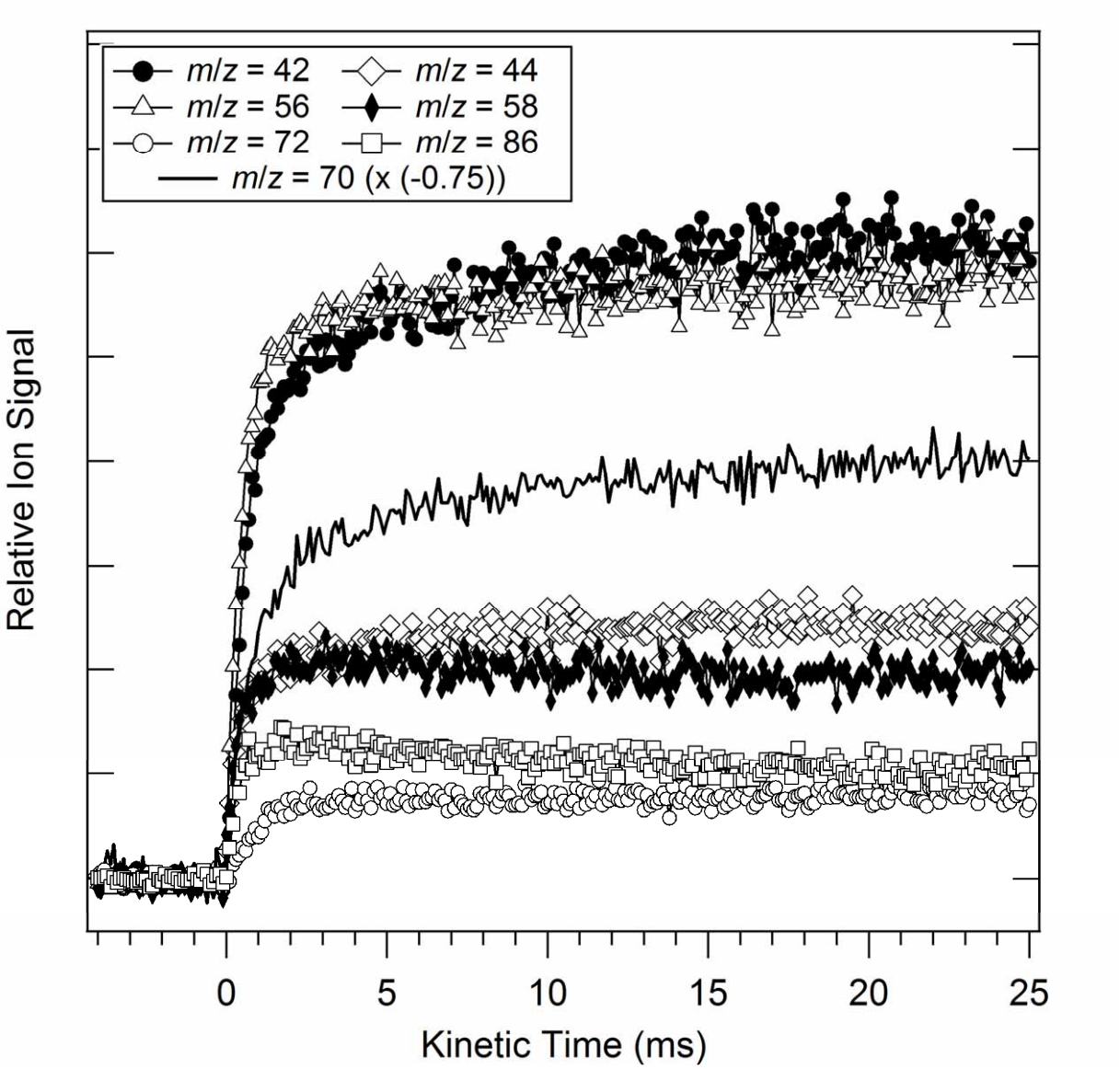

Figure S3: Time profiles of *m*/*z* = 42, 44, 56, 58, 70, 72, and 86 at 750 K, obtained by integration over photon energies from 8.0 – 10.4 eV. The consumption of isopentanol is shown by the profile of its daughter ion at *m*/*z* = 70, shown multiplied by (-0.75).

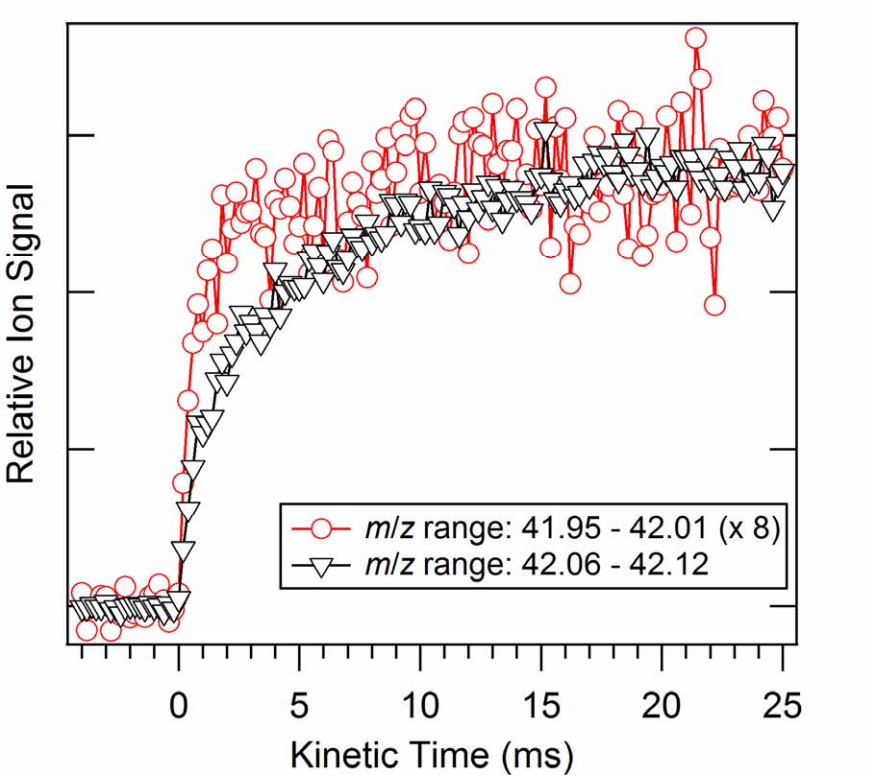

Figure S4: Time profiles of ketene (connected red open circles) and propene (connected black triangles) at 650 K, obtained by integrating over the mass ranges $41.95 < m/z < 42.01$ (shown multiplied x 8) and $42.06 < m/z < 42.12$, respectively. The lower-mass part corresponds mostly to ketene ($m/z = 42.01$), the higher-mass part mostly to propene ($m/z = 42.05$). Propene shows a slower rise than ketene at longer times.

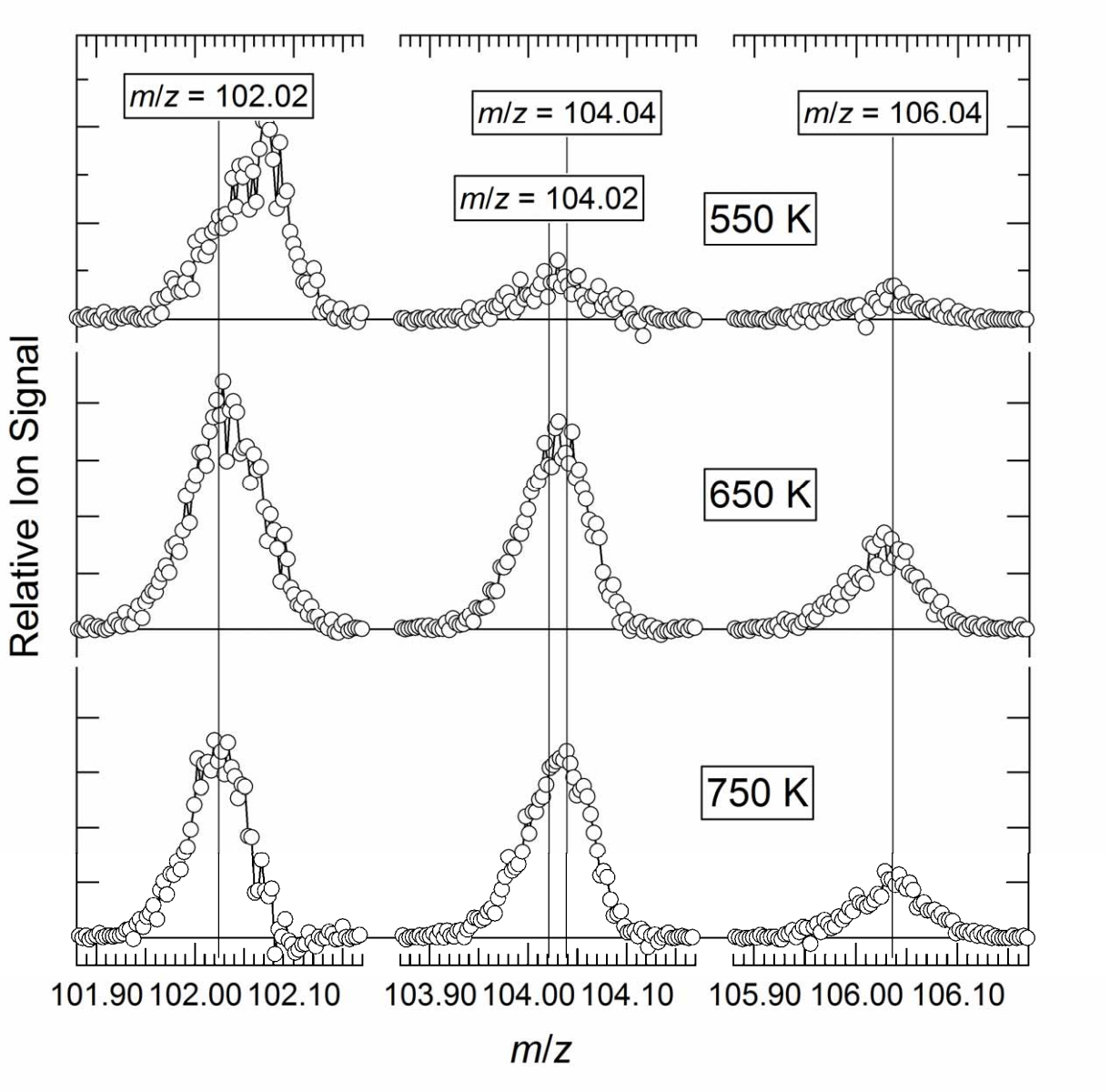

Figure S5: Integrated difference mass spectra for nominal m/z = 102, 104 and 106. The peak maximum at m/z = 102.02 corresponds to $C_5H_7{}^{35}Cl$ (at 550 K, this peak appears as a shoulder of the m/z = 102.07 peak arising from $C_5H_{10}O_2$). The potentially confirmatory contribution of $C_5H_7{}^{37}Cl$ at m/z = 104.02 with an expected intensity ratio of $I(m/z = 102.02) : I(m/z = 104.02)$ = 3:1 is masked by another species, probably $C_5H_9{}^{35}Cl$, with the peak maximum at m/z = 104.04. Its ^{37}Cl isotopologue would appear at m/z = 106.04. The relative intensities of the mass peaks at a given temperature are on an absolute scale so that they can be directly compared.

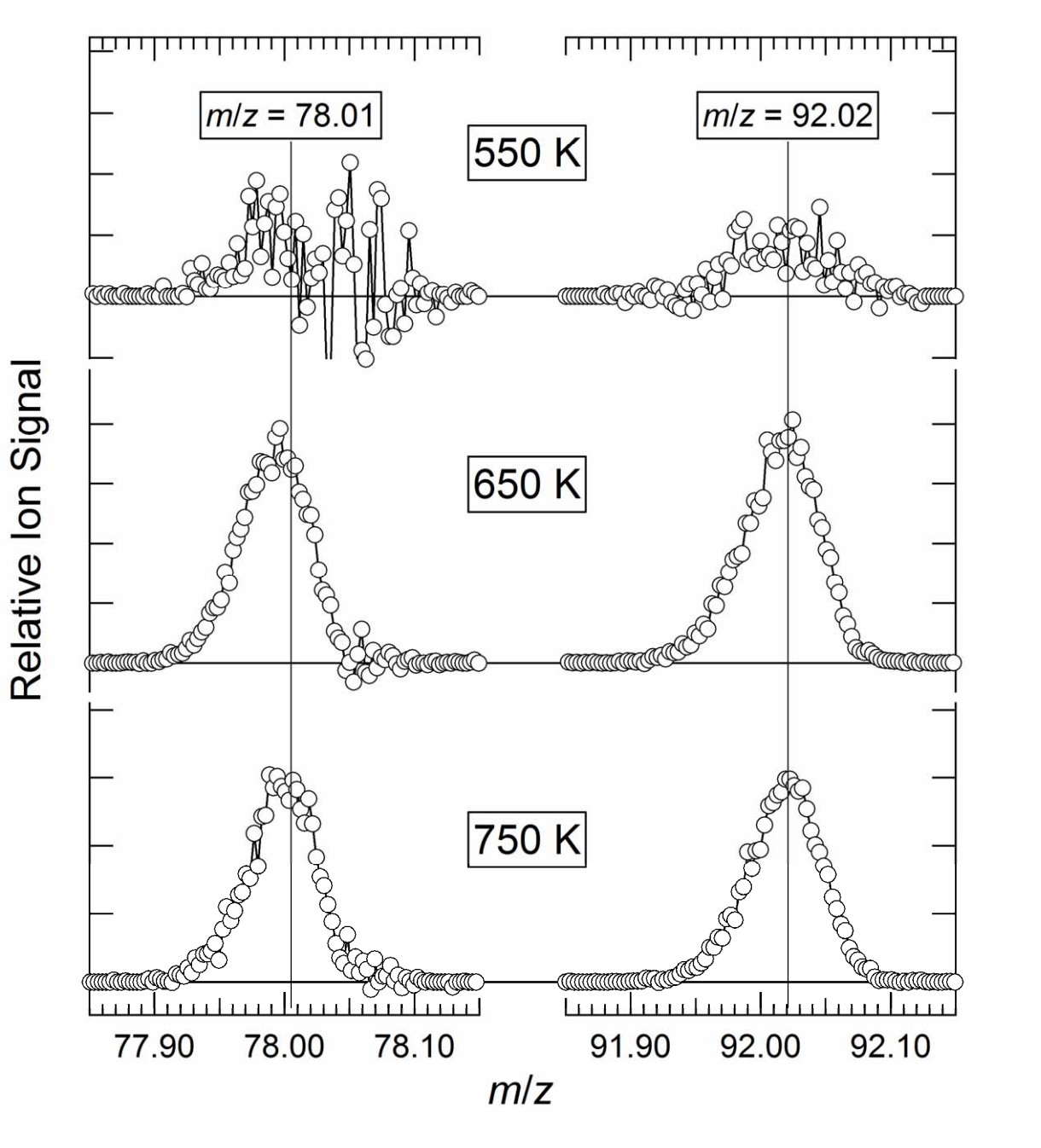

Figure S6: Integrated difference mass spectra for nominal m/z = 78 and 92. The contributions of the ^{37}Cl isotopologues of C_3H_5Cl and C_4H_7Cl have a peak maximum at m/z = 78.01 and m/z = 92.02, respectively. At 550 K, formation of these species is minor. An additional contribution to nominal m/z = 78 from $C_2H_3O^{35}Cl$ (either chlorinated acetaldehyde or ethenol) with a peak maximum at m/z = 77.99 is possible.

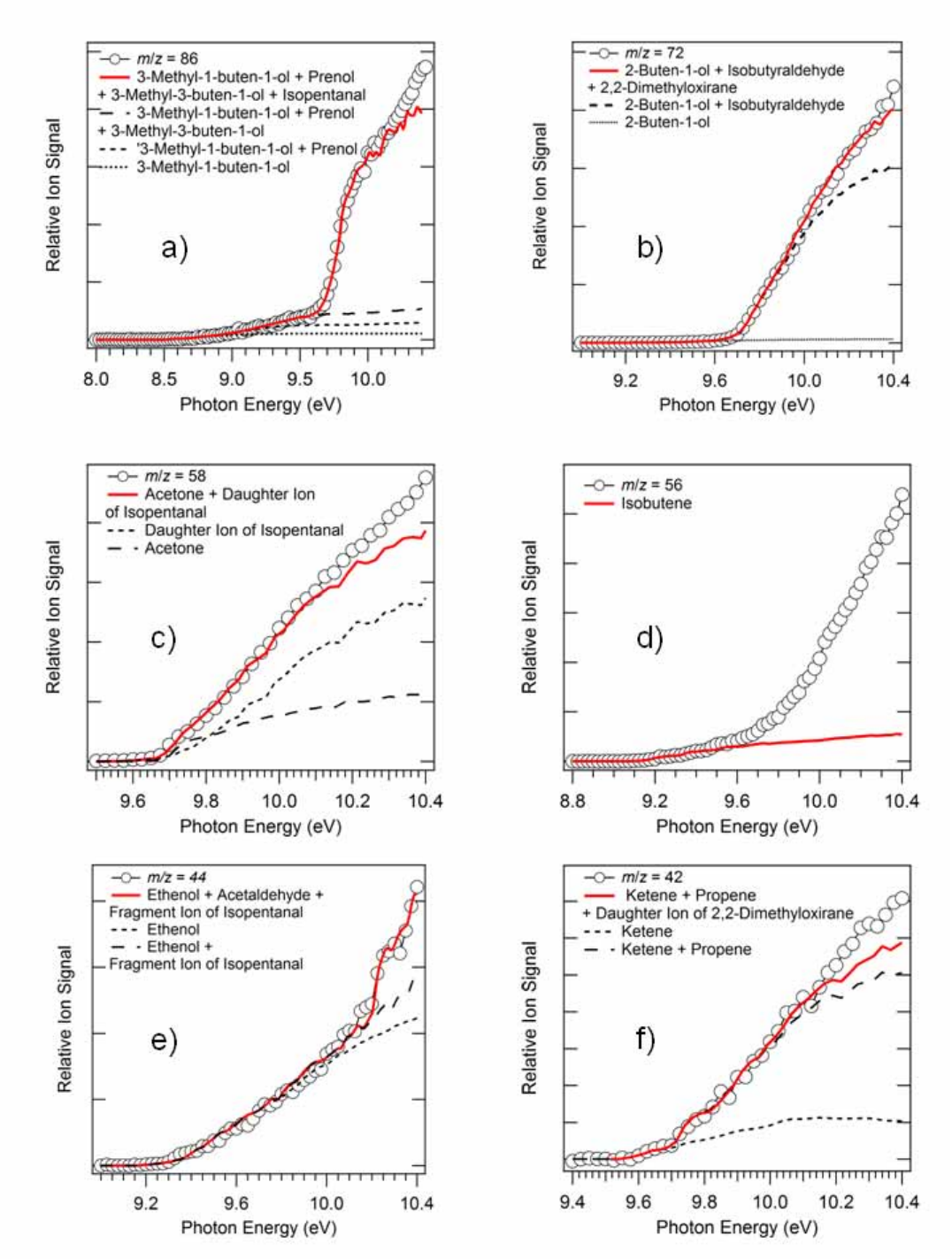

Figure S7: Experimental photoionization spectra and their isomeric contributions at 550 K for a) m/z = 86, b) m/z = 72, c) m/z = 58, d) m/z = 56, e) m/z = 44, and f) m/z = 42.

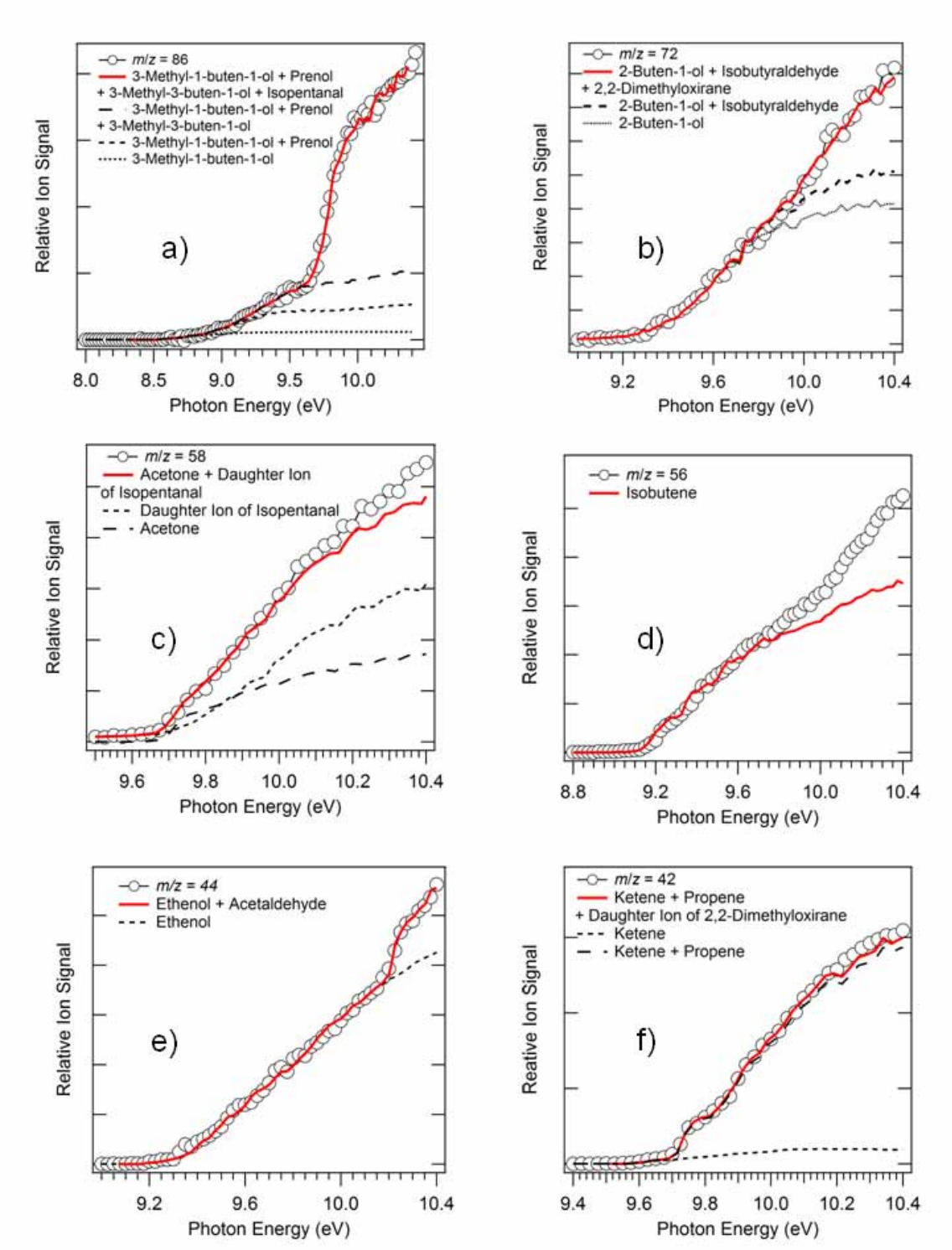

Figure S8: Experimental photoionization spectra and their isomeric contributions at 750 K for a) m/z = 86, b) m/z = 72, c) m/z = 58, d) m/z = 56, e) m/z = 44, and f) m/z = 42.

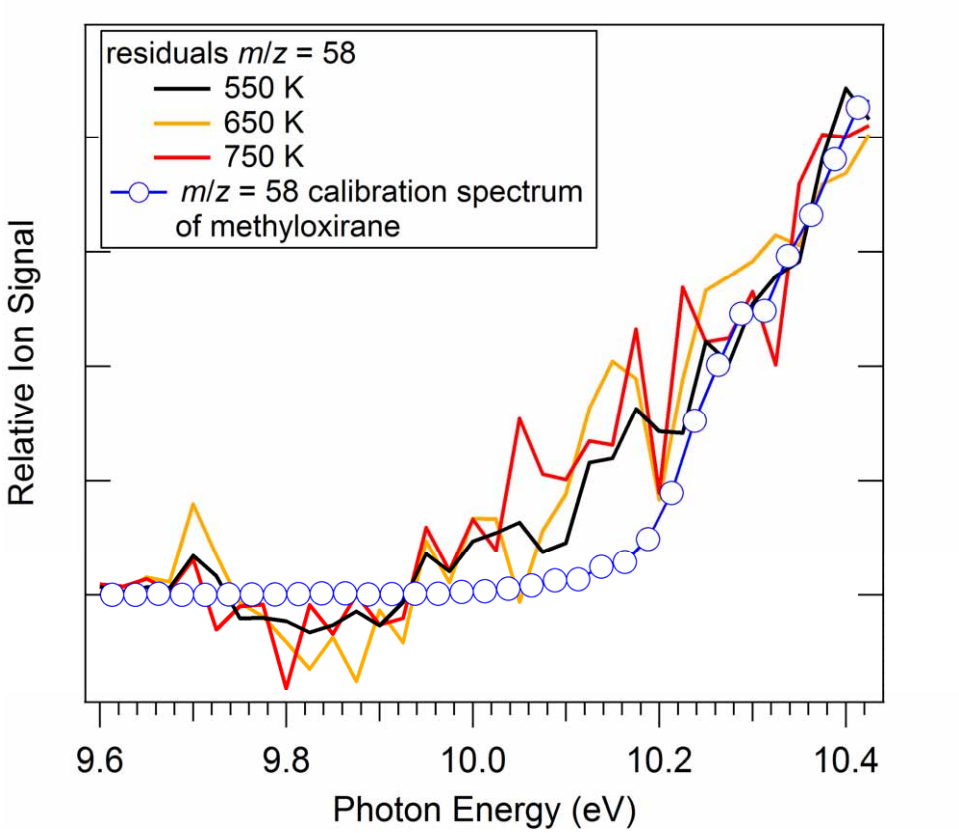

Figure S9: Scaled residuals of the photoionization spectrum of m/z = 58 at 550, 650 and 750 K obtained from the experimental photoionization spectra after subtraction of the contributions of acetone and the daughter ion of isopentanal. Within the uncertainty, the scaled residuals are identical for these temperatures suggesting a temperature-independent species composition in the residuals. The photoionization spectrum of methyloxirane (58-I), a potential isopentanol oxidation product (see Figure 7 in the main text), does not agree in shape with the residuals.

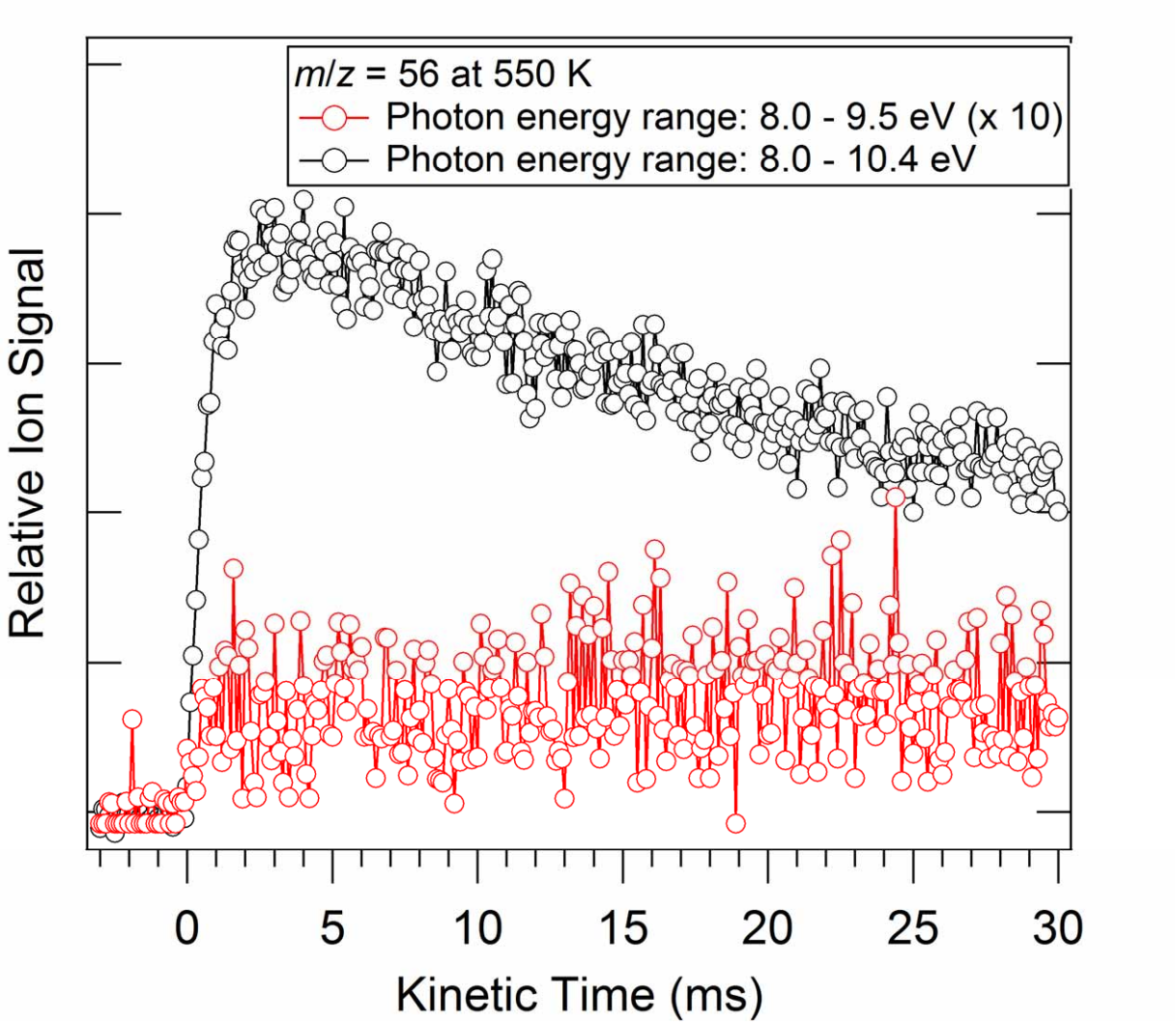

Figure S10: Photon energy-dependent time profiles of m/z = 56 at 550 K, obtained by integration over photon energies from 8.0 – 9.5 eV (connected red open circles, shown multiplied x 10) and from 8.0 – 10.4 eV (connected black open circles). At photon energies < 9.5 eV, isobutene is the only contribution to m/z = 56, whereas at higher photon energies a species contributes, which we were unable to assign. Therefore, the red trace reflects the time profile of isobutene, whereas the black trace represents the sum of the time profiles of isobutene and the unassigned species. These time profiles are different showing different kinetics of isobutene and the unassigned species.

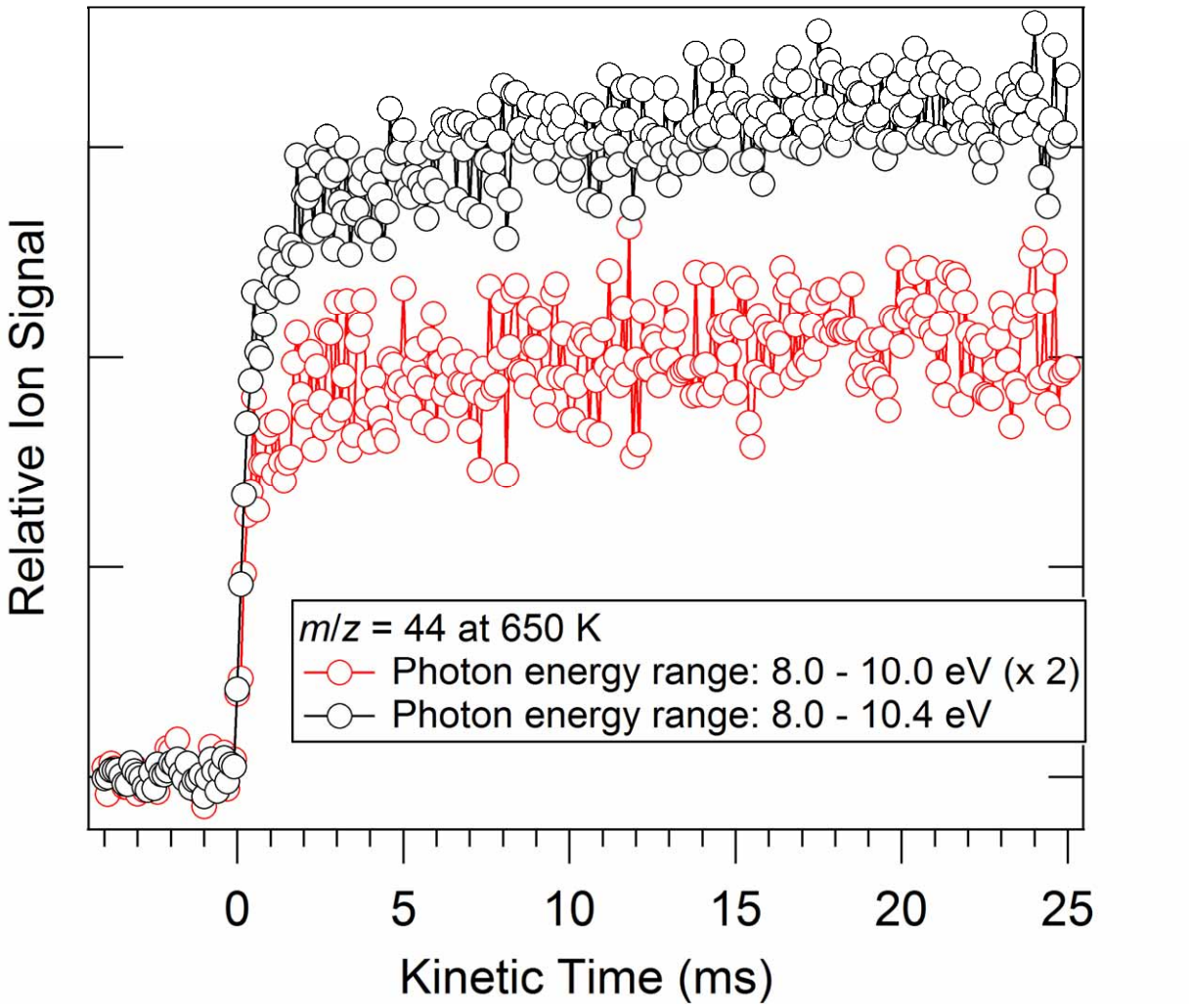

Figure S11: Photon energy-dependent time profiles of m/z = 44 at 650 K, obtained by integration over photon energies from 8.0 – 10.0 eV (connected red open circles, shown multiplied x 2) and from 8.0 – 10.4 eV (connected black open circles). At photon energies < 10.0 eV, ethenol is the only significant contribution to m/z = 44 at 650 K. The trace with the connected black open circles represents the sum of the contributions of ethenol and acetaldehyde. The similar long-time behavior of both time traces precludes a slow ethenol → acetaldehyde isomerization reaction.

Determination of absolute photoionization cross sections of pure compounds

The absolute photoionization cross section $\sigma_T(E)$ of a target species T can be obtained relative to the known photoionization cross section $\sigma_R(E)$ of a reference species R according to the relation

$$\sigma_T(E) = \sigma_R \frac{S_T(E)}{S_R} \frac{c_R}{c_T} \left(\frac{m_R}{m_T} \right)^{\beta} \qquad \text{(X1)}$$

with the ion signal S_i normalized to the photon current, concentration c_i, parent ion masses m_i with i = R, T and the factor β, which accounts for mass-dependent sampling efficiencies (see eq. (1) and (2) in the main text).

To determine absolute photoionization cross sections, a gas mixture containing known amounts of the target and reference species is flowed through the reactor tube and the energy-dependent ion signals S_T and S_R are recorded. A scaling factor σ_R/S_R is determined based on the known absolute photoionization cross section σ_R and the measured signal of the reference species S_R at a single photon energy. Together with the mass discrimination and concentration ratios shown in eq. (X1), this scaling factor converts the relative ion signal $S_T(E)$ of the target compound into the absolute photoionization cross section $\sigma_T(E)$. A commonly used reference is propene, for which the absolute photoionization cross section has been reported by Person and Nicole.[1] As shown in Figure S12, however, the shape, i.e. energy dependence, of the absolute photoionization cross section reported by Person and Nicole is different from the shape of the relative propene ion signal S normalized to the photon current measured in this work using a NIST-calibrated photodiode (SXUV100, International Radiation Detectors, Inc.). This difference possibly arises from differing assumptions inherent in measuring VUV photon current.

The uncertainty in our branching ratios is minimized by utilizing a common reference spectrum taken with our apparatus, normalized to photon current in the same manner as the reaction data. For this reason we do not utilize an energy-dependent scaling factor $\sigma_R(E)/S_R(E)$ to remove the discrepancy with Person and Nicole, and instead scale the propene ion signal measured in this work by a single constant value to match the photoionization cross section

reported by Person and Nicole at 10.325 eV. This propene trace is used as a reference for the determination of photoionization cross sections of pure compounds.

Note that the present normalization differs from that employed in other works,[2-4] where the cross sections were referenced to the Person and Nicole value across the entire spectrum, (i.e., by applying an energy-dependent $\sigma_R(E)/S_R(E)$ at each photon energy), and where the calibrated photodiode measurements were used only to extrapolate beyond the region of the propene reference spectrum. The present measurements will therefore tend to deviate from those reported by the ALS flame group[2-4] and possibly from derived measurements by the Hefei group[5, 6] by the ratio of the present propene reference cross sections (Table T1) to those of Person and Nicole (see Figure S12).

The propene reference spectrum is given in Table T1, and the photoionization cross sections of pure compounds determined in this work are reported in Table T2-T12. The absolute error in the amplitude of the measured photoionization cross sections relative to the propene reference spectrum reported in this work is estimated as 20%, whereas the shapes of the parent spectra have much better precision.

The exponent β in eq. (X1) accounts for mass-dependent sampling efficiencies. In our experimental setup, one part of the mass discriminaton is caused by the expansion of the neutral species N with mass m_N at the pinhole of the reactor and the other part by the velocity spread of the ions I with mass m_I in the horizontal extraction region. For parent ion formation, a value of β = 0.66 ± 0.03 has been experimentally determined under the conditions of this study. For daughter ion formation, experimental evidence exists that the mass discrimination factor is species-dependent and as a consequence not known for our instrument. In order to report absolute photoionization cross sections for daughter ions, mass discrimination factors $\beta_N = \beta_I$ = 0.33 according to the relationship $m_I^{\beta_I} m_N^{\beta_N}$ with the mass of the neutral species m_N and the mass of the daughter ion m_I are used. This choice is arbitrary, but as long as the same mass discrimination factor is used when simulating reactive product spectra according to eq (3) in the

main text taken with the same experimental setup, the effect of the daughter ion mass discrimination factor cancels out. The mass discrimination factor for daughter ion formation on a different instrument, however, might be substantially different and caution should be taken when using the absolute cross sections for daughter ion formation reported in this work.

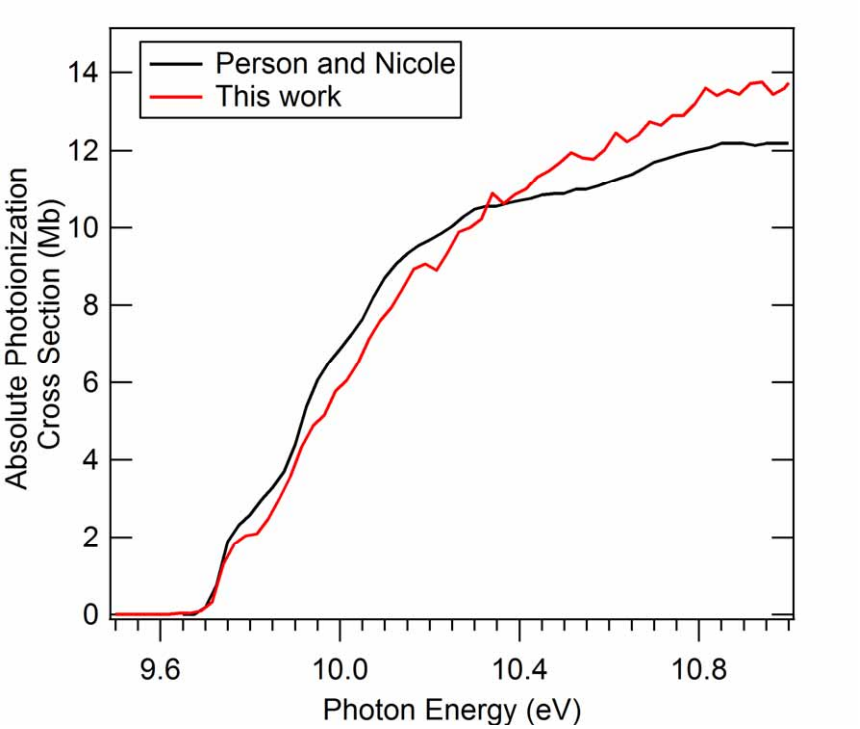

Figure S12: Absolute photoionization cross section of propene as reported by Person and Nicole[1] compared to the relative propene ion signal normalized to the photon current measured in this work. The normalized propene ion signal measured in our experiment has a different energy dependence and is scaled to match the Person and Nicole trace at 10.325 eV.

Table T1 Absolute photoionization cross section of propene (measured, 298 K), obtained by scaling the measured propene ion signal in this work to the absolute photoionization cross section of propene reported by Person and Nicole[1] at 10.325 eV.

E (eV)	σ (Mb) $m/z = 42$	E (eV)	σ (Mb) $m/z = 42$
9.515	0.00	10.265	9.89
9.54	0.00	10.29	10.00
9.565	0.00	10.315	10.21
9.59	0.01	10.34	10.89
9.615	0.00	10.365	10.62
9.64	0.04	10.39	10.85
9.665	0.03	10.415	11.00
9.69	0.10	10.44	11.32
9.715	0.32	10.465	11.47
9.74	1.30	10.49	11.68
9.765	1.83	10.515	11.95
9.79	2.04	10.54	11.81
9.815	2.09	10.565	11.77
9.84	2.47	10.59	12.02
9.865	3.00	10.615	12.45
9.89	3.57	10.64	12.22
9.915	4.33	10.665	12.40
9.94	4.87	10.69	12.74
9.965	5.15	10.715	12.64
9.99	5.77	10.74	12.89
10.015	6.05	10.765	12.89
10.04	6.50	10.79	13.18
10.065	7.13	10.815	13.60
10.09	7.60	10.84	13.40
10.115	7.94	10.865	13.55
10.14	8.43	10.89	13.44
10.165	8.93	10.915	13.71
10.19	9.06	10.94	13.76
10.215	8.90	10.965	13.43
10.24	9.36	10.99	13.59
		11.015	13.95

Table T2: Absolute photoionization cross section of acetaldehyde (measured, 298 K).

E (eV)	σ (Mb) $m/z = 44$	E (eV)	σ (Mb) $m/z = 44$
9.903	0	10.453	7.96
9.928	0	10.478	8.57
9.953	0	10.503	8.28
9.978	0	10.528	8.52
10.003	0	10.553	8.79
10.028	0	10.578	8.92
10.053	0.02	10.603	9.43
10.078	0	10.628	9.18
10.103	0.04	10.653	9.39
10.128	0.04	10.678	9.63
10.153	0.06	10.703	9.53
10.178	0.24	10.728	9.85
10.203	0.61	10.753	9.31
10.228	3.76	10.778	9.75
10.253	4.74	10.803	9.85
10.278	5.31	10.828	9.67
10.303	5.25	10.853	9.67
10.328	5.75	10.878	9.80
10.353	6.01	10.903	9.75
10.378	7.31	10.928	9.60
10.403	7.24	10.953	9.88
10.428	7.54	10.978	9.88
		11.003	9.80

Table T3: Absolute photoionization cross section of isobutene (measured, 298 K). This cross section was measured on a previous experimental setup, but uses the same photon current normalization method.[7] The absolute cross section was obtained by scaling the ion signal to the cross section reported by Wang *et al*.[4] near 10.325 eV.

E (eV)	σ (Mb) $m/z = 56$	E (eV)	σ (Mb) $m/z = 56$
9	0.01	9.8	7.76
9.025	0.03	9.825	7.83
9.05	0.01	9.85	7.96
9.075	0.04	9.875	8.02
9.1	0.08	9.9	8.17
9.125	0.17	9.925	8.35
9.15	0.42	9.95	8.47
9.175	0.79	9.975	8.58
9.2	1.33	10	8.62
9.225	1.64	10.025	8.99
9.25	2.02	10.05	9.13
9.275	2.31	10.075	9.48
9.3	2.28	10.1	9.72
9.325	2.48	10.125	9.76
9.35	3.35	10.15	9.89
9.375	3.93	10.175	10.18
9.4	3.99	10.2	10.28
9.425	4.26	10.225	10.47
9.45	4.51	10.25	10.71
9.475	4.50	10.275	10.63
9.5	4.86	10.3	10.71
9.525	5.52	10.325	10.90
9.55	5.97	10.35	10.91
9.575	5.97	10.375	11.31
9.6	6.24	10.4	11.14
9.625	6.17	10.425	11.07
9.65	6.59	10.45	11.13
9.675	6.90	10.475	10.99
9.7	7.20	10.5	11.00
9.725	7.52	10.525	11.39
9.75	7.32	10.55	11.42
9.775	7.42	10.575	11.14
		10.6	11.33

Table T4: Absolute photoionization cross section of acetone (measured, 298 K).

E (eV)	σ (Mb) $m/z = 58$	σ (Mb) $m/z = 43$	E (eV)	σ (Mb) $m/z = 58$	σ (Mb) $m/z = 43$
9.503	0.00	0.00	10.253	12.55	-0.01
9.528	0.00	0.00	10.278	13.08	0.05
9.553	0.01	0.00	10.303	13.44	0.03
9.578	0.01	0.00	10.328	13.15	0.02
9.603	0.01	0.00	10.353	13.76	0.04
9.628	0.05	0.00	10.378	13.77	0.08
9.653	0.14	0.00	10.403	14.00	0.05
9.678	0.35	0.00	10.428	14.03	0.06
9.703	1.49	0.01	10.453	14.24	0.13
9.728	3.25	0.00	10.478	14.24	0.18
9.753	4.36	-0.01	10.503	14.46	0.28
9.778	4.75	-0.01	10.528	14.79	0.34
9.803	5.30	-0.01	10.553	14.46	0.36
9.828	5.69	0.02	10.578	14.64	0.44
9.853	6.32	0.00	10.603	14.20	0.51
9.878	7.17	0.01	10.628	14.60	0.52
9.903	7.96	-0.01	10.653	14.68	0.62
9.928	8.17	0.00	10.678	14.62	0.77
9.953	8.89	-0.01	10.703	14.36	0.74
9.978	9.37	0.04	10.728	14.51	0.79
10.003	9.26	-0.02	10.753	14.23	0.86
10.028	9.94	0.02	10.778	14.39	0.87
10.053	10.32	-0.01	10.803	14.01	0.88
10.078	10.81	0.03	10.828	14.10	1.12
10.103	11.06	0.02	10.853	14.03	1.14
10.128	11.47	-0.01	10.878	13.71	1.13
10.153	11.23	-0.04	10.903	13.95	1.28
10.178	12.22	0.00	10.928	13.66	1.26
10.203	12.43	0.00	10.953	13.72	1.28
10.228	12.34	0.01	10.978	13.55	1.33
			11.003	13.37	1.36

Table T5: Absolute photoionization cross section of 2-buten-1-ol (measured, 298 K).

E (eV)	σ (Mb), *m*/*z* =							
	72	71	70	58	57	54	44	43
8.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.065	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.09	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.115	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.14	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.165	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.19	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.215	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.24	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.265	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.29	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.315	0.26	0.00	0.00	0.00	0.00	0.01	0.00	0.00
9.34	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.365	0.43	0.00	0.00	0.00	0.00	0.01	0.00	0.00
9.39	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.415	0.63	0.00	0.00	0.00	0.00	0.01	0.00	0.00
9.44	0.70	0.01	0.00	0.00	0.00	0.00	0.00	0.00
9.465	0.91	0.01	0.00	0.00	0.00	0.00	0.00	0.00
9.49	1.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00
9.515	1.20	0.01	0.00	0.00	0.01	0.01	0.00	0.00
9.54	1.42	0.01	0.00	0.00	0.00	0.00	0.00	0.00
9.565	1.54	0.02	0.00	0.00	0.01	0.01	0.00	0.00
9.59	1.74	0.02	0.00	0.00	0.02	0.01	0.00	0.01
9.615	2.04	0.02	0.00	0.00	0.00	0.02	0.00	0.01
9.64	2.17	0.02	0.00	0.00	0.00	0.03	0.00	0.00
9.665	2.47	0.02	0.00	0.00	0.02	0.02	0.00	0.01
9.69	2.55	0.02	0.00	0.01	0.02	0.04	0.00	0.03
9.715	2.45	0.03	0.00	0.02	0.02	0.04	0.00	0.02
9.74	3.04	0.03	0.00	0.02	0.05	0.03	0.00	0.03
9.765	3.04	0.03	0.01	0.03	0.01	0.04	0.01	0.06
9.79	3.28	0.03	0.02	0.01	0.03	0.05	0.00	0.06
9.815	3.40	0.03	0.02	0.03	0.06	0.06	0.00	0.09
9.84	3.46	0.04	0.00	0.04	0.08	0.07	0.00	0.13
9.865	3.57	0.03	0.01	0.03	0.15	0.08	0.01	0.11
9.89	3.75	0.04	0.03	0.04	0.13	0.12	0.01	0.17
9.915	3.80	0.04	0.02	0.04	0.18	0.11	0.01	0.20
9.94	3.62	0.03	0.04	0.05	0.21	0.10	0.00	0.18

9.965	3.63	0.06	0.04	0.03	0.23	0.13	0.02	0.23
9.99	3.91	0.04	0.02	0.05	0.30	0.16	0.01	0.27
10.015	3.97	0.04	0.04	0.06	0.32	0.17	0.01	0.30
10.04	4.06	0.05	0.04	0.05	0.35	0.17	0.03	0.35
10.065	4.13	0.06	0.04	0.05	0.39	0.19	0.02	0.41
10.09	4.01	0.05	0.04	0.06	0.47	0.18	0.03	0.43
10.115	4.13	0.06	0.06	0.06	0.51	0.20	0.01	0.39
10.14	4.17	0.05	0.04	0.06	0.48	0.18	0.03	0.52
10.165	4.38	0.05	0.05	0.07	0.60	0.25	0.02	0.50
10.19	4.18	0.04	0.05	0.07	0.72	0.22	0.04	0.50
10.215	4.32	0.06	0.06	0.08	0.64	0.20	0.04	0.55
10.24	4.40	0.07	0.07	0.09	0.70	0.22	0.05	0.54
10.265	4.31	0.06	0.08	0.06	0.72	0.22	0.05	0.63
10.29	4.33	0.05	0.09	0.08	0.80	0.31	0.07	0.61
10.315	4.54	0.07	0.08	0.09	1.00	0.28	0.05	0.68
10.34	4.34	0.06	0.09	0.08	0.91	0.28	0.09	0.73
10.365	4.41	0.07	0.08	0.07	1.02	0.30	0.07	0.69
10.39	4.41	0.07	0.11	0.11	1.04	0.28	0.10	0.73
10.415	4.44	0.06	0.09	0.09	1.19	0.30	0.09	0.74
10.44	4.63	0.09	0.11	0.12	1.23	0.32	0.12	0.88
10.465	4.68	0.07	0.11	0.12	1.55	0.33	0.08	0.87
10.49	4.78	0.06	0.12	0.12	1.56	0.37	0.13	0.91
10.515	4.85	0.07	0.14	0.13	1.76	0.31	0.13	0.90
10.54	4.88	0.09	0.14	0.14	2.04	0.38	0.13	0.99
10.565	4.75	0.08	0.14	0.14	2.17	0.39	0.14	1.05
10.59	4.98	0.10	0.14	0.16	2.43	0.36	0.14	1.24
10.615	4.94	0.09	0.15	0.15	2.70	0.46	0.18	1.14
10.64	4.78	0.10	0.13	0.15	2.92	0.41	0.21	1.22
10.665	4.99	0.11	0.12	0.18	3.14	0.41	0.19	1.30
10.69	4.89	0.09	0.16	0.17	3.39	0.43	0.19	1.33
10.715	4.93	0.10	0.15	0.17	3.61	0.44	0.17	1.37
10.74	4.93	0.11	0.17	0.23	3.98	0.45	0.25	1.40
10.765	5.04	0.13	0.15	0.17	4.17	0.51	0.23	1.28
10.79	5.12	0.11	0.17	0.21	4.34	0.48	0.22	1.40
10.815	5.01	0.13	0.14	0.21	4.61	0.53	0.24	1.39
10.84	5.06	0.13	0.16	0.20	4.79	0.53	0.24	1.59
10.865	5.25	0.14	0.16	0.25	5.02	0.56	0.26	1.51
10.89	5.12	0.13	0.16	0.23	5.09	0.56	0.25	1.55
10.915	5.11	0.15	0.17	0.24	5.36	0.52	0.30	1.57
10.94	5.11	0.18	0.13	0.24	5.59	0.57	0.30	1.49
10.965	5.23	0.16	0.16	0.26	5.79	0.59	0.31	1.61
10.99	5.19	0.16	0.15	0.28	6.02	0.63	0.32	1.70
11.015	5.32	0.15	0.18	0.24	6.12	0.57	0.31	1.70

Table T6: Absolute photoionization cross section of 3-buten-1-ol (measured, 298 K).

E (eV)	σ (Mb), *m*/*z* =						
	72	71	57	54	44	43	42
9.115	0.01	0.00	0.00	0.00	0.00	0.00	0.00
9.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.165	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.19	0.00	0.00	0.00	0.00	0.00	0.00	0.01
9.215	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.24	0.01	0.00	0.00	0.00	0.00	0.00	0.00
9.265	0.02	0.00	0.00	0.01	0.00	0.00	0.00
9.29	0.01	0.00	0.00	0.00	0.00	0.00	0.00
9.315	0.02	0.00	0.00	0.00	0.00	0.00	0.00
9.34	0.02	0.00	0.00	0.00	0.00	0.00	0.00
9.365	0.04	0.00	0.00	0.00	0.00	0.00	0.00
9.39	0.00	0.00	0.00	0.02	0.00	0.00	0.00
9.415	0.03	0.00	0.00	0.00	0.00	0.00	0.00
9.44	0.08	0.00	0.00	0.00	0.00	0.00	0.00
9.465	0.08	0.00	0.00	0.00	0.00	0.00	0.00
9.49	0.16	0.00	0.00	0.00	0.00	0.00	0.00
9.515	0.21	0.00	0.00	0.00	0.00	0.00	0.00
9.54	0.29	0.02	0.02	0.01	0.00	0.00	0.00
9.565	0.28	0.00	0.00	0.00	0.00	0.00	0.00
9.59	0.66	0.00	0.00	0.00	0.00	0.01	0.00
9.615	0.83	0.02	0.00	0.01	0.00	0.01	0.01
9.64	1.01	0.01	0.01	0.00	0.00	0.00	-0.01
9.665	1.47	0.01	-0.02	0.01	0.00	0.00	0.00
9.69	1.71	0.01	0.00	0.02	0.00	0.00	-0.02
9.715	2.04	0.01	0.00	0.00	0.02	0.01	0.01
9.74	2.53	0.01	-0.01	0.01	0.00	0.03	-0.01
9.765	2.84	0.01	0.06	0.01	0.02	0.09	0.12
9.79	3.33	0.04	0.07	0.04	0.01	0.07	0.07
9.815	3.07	0.01	0.04	0.04	0.02	0.08	0.07
9.84	3.79	0.06	0.12	0.06	0.02	0.16	0.13
9.865	4.64	0.04	0.19	0.09	0.06	0.24	0.21
9.89	4.71	0.06	0.31	0.13	0.07	0.33	0.13
9.915	5.05	0.09	0.40	0.11	0.09	0.38	0.13
9.94	4.85	0.14	0.48	0.18	0.13	0.61	0.26
9.965	5.20	0.13	0.69	0.32	0.17	0.62	0.42
9.99	5.13	0.18	0.89	0.24	0.24	0.84	0.11
10.015	5.44	0.22	1.13	0.41	0.27	1.20	0.18
10.04	5.08	0.33	1.18	0.44	0.39	1.15	0.25
10.065	4.98	0.32	1.59	0.38	0.46	1.45	0.07

10.09	5.51	0.33	1.64	0.56	0.57	1.75	0.79
10.115	5.45	0.47	1.85	0.59	0.66	1.78	0.41
10.14	5.35	0.57	2.06	0.54	0.77	2.00	0.66
10.165	5.48	0.59	2.07	0.54	1.07	2.20	0.45
10.19	5.40	0.70	2.21	0.64	1.18	2.37	0.86
10.215	5.39	0.66	2.49	0.65	1.20	2.62	1.07
10.24	5.98	0.72	2.58	0.70	1.23	2.95	1.24
10.265	5.82	0.72	2.54	0.76	1.43	3.13	1.24
10.29	5.41	0.79	2.52	0.59	1.34	3.30	1.20
10.315	5.69	0.78	2.67	0.72	1.52	3.44	1.65
10.34	5.80	0.91	2.57	0.63	1.72	3.76	1.56
10.365	5.85	0.81	2.80	0.62	1.86	4.07	1.90
10.39	5.78	0.97	2.66	0.60	1.78	3.92	2.43
10.415	5.54	0.86	2.54	0.69	1.64	4.47	3.19
10.44	5.99	0.87	2.66	0.63	1.82	4.51	3.20
10.465	5.81	0.90	2.73	0.69	1.89	4.47	4.19
10.49	6.03	0.77	2.88	0.67	1.92	4.82	4.39
10.515	5.97	0.96	2.84	0.75	1.87	4.79	4.70
10.54	6.00	0.92	2.71	0.66	1.93	5.73	5.98
10.565	6.04	0.90	2.94	0.68	1.78	5.25	7.10
10.59	6.14	0.87	2.99	0.69	2.00	5.50	7.89
10.615	6.15	0.90	2.63	0.74	2.00	5.79	8.82
10.64	6.01	0.89	2.87	0.79	2.15	5.90	9.79
10.665	5.83	0.89	3.06	0.70	2.28	6.49	10.80
10.69	6.18	0.93	3.08	0.78	2.14	6.03	11.71
10.715	6.40	0.90	3.03	0.71	2.07	5.87	12.47
10.74	5.93	0.89	3.16	0.75	2.18	5.97	14.20
10.765	5.87	0.93	3.02	0.88	2.04	6.35	14.21
10.79	6.22	0.91	3.22	0.83	1.98	6.31	15.71
10.815	5.78	0.88	3.01	0.76	2.13	6.79	16.90
10.84	6.00	0.91	3.17	0.78	2.24	6.82	17.89
10.865	6.16	0.88	3.19	0.79	2.24	6.39	18.01
10.89	6.29	1.12	3.23	0.76	2.19	7.08	19.59
10.915	6.00	0.99	3.08	0.73	2.31	6.90	19.99
10.94	6.10	0.93	3.20	0.82	2.25	6.65	20.27
10.965	6.39	1.08	3.25	0.73	2.33	7.00	21.37
10.99	6.12	0.87	3.09	0.71	2.34	7.31	22.75
11.015	6.40	0.89	3.08	0.78	2.50	6.96	23.22

Table T7: Absolute photoionization cross section of methylpropanal (isobutyraldehyde) (measured, 550 K).

	σ (Mb), *m*/*z* =				σ (Mb), *m*/*z* =		
E (eV)	72	57	43	*E* (eV)	72	57	43
9.413	0.00	0.00	0.00	10.213	11.18	0.34	0.26
9.438	0.00	0.00	0.00	10.238	11.32	0.27	0.24
9.463	0.00	0.00	0.00	10.263	11.64	0.31	0.29
9.488	0.00	0.00	0.00	10.288	11.72	0.33	0.38
9.513	0.02	0.00	0.00	10.313	12.34	0.34	0.35
9.538	0.02	0.01	0.00	10.338	12.05	0.37	0.42
9.563	0.03	0.00	0.00	10.363	12.28	0.38	0.40
9.588	0.04	-0.01	0.00	10.388	12.63	0.35	0.43
9.613	0.08	0.02	0.01	10.413	12.56	0.42	0.43
9.638	0.15	0.00	0.00	10.438	12.49	0.49	0.45
9.663	0.21	0.04	0.00	10.463	13.07	0.45	0.48
9.688	0.34	0.01	0.01	10.488	13.03	0.51	0.50
9.713	0.57	0.06	0.01	10.513	13.00	0.45	0.58
9.738	1.07	0.02	0.01	10.538	13.34	0.54	0.62
9.763	1.87	0.01	0.04	10.563	13.16	0.53	0.66
9.788	2.46	0.05	0.01	10.588	13.21	0.55	0.77
9.813	3.18	0.04	0.05	10.613	13.00	0.53	0.74
9.838	3.79	0.04	0.03	10.638	13.18	0.58	0.82
9.863	4.49	0.08	0.07	10.663	13.41	0.62	0.74
9.888	5.03	0.07	0.10	10.688	13.40	0.59	0.80
9.913	5.60	0.06	0.08	10.713	13.42	0.77	0.81
9.938	6.33	0.06	0.08	10.738	13.22	0.74	0.78
9.963	7.08	0.11	0.12	10.763	13.40	0.63	0.89
9.988	7.48	0.08	0.13	10.788	13.28	0.68	0.91
10.013	7.97	0.17	0.18	10.813	13.49	0.71	0.88
10.038	8.74	0.14	0.12	10.838	13.18	0.65	0.87
10.063	9.04	0.19	0.16	10.863	13.38	0.78	1.15
10.088	9.38	0.19	0.18	10.888	13.24	0.73	1.08
10.113	9.83	0.21	0.23	10.913	13.46	0.77	1.08
10.138	10.45	0.23	0.22	10.938	13.32	0.77	1.13
10.163	10.52	0.16	0.21	10.963	13.21	0.73	1.29
10.188	10.93	0.29	0.27	10.988	13.43	0.71	1.24
				11.013	13.28	0.71	1.25

Table T8: Absolute photoionization cross section of 2,2-dimethyloxirane (measured, 298 K).

	σ (Mb), m/z =			
E (eV)	72	44	43	42
9.518	0.00	0.00	0.00	0.00
9.543	0.01	0.00	0.00	0.00
9.568	0.02	0.00	0.00	0.00
9.593	0.01	0.00	0.00	0.00
9.618	0.02	0.00	0.00	0.01
9.643	0.03	0.00	0.00	-0.01
9.668	0.04	0.00	0.01	0.02
9.693	0.03	0.00	0.00	0.08
9.718	0.04	0.00	0.00	0.16
9.743	0.06	0.00	0.00	0.03
9.768	0.11	0.00	0.00	-0.08
9.793	0.12	0.00	0.02	-0.03
9.818	0.20	0.00	0.01	0.13
9.843	0.25	0.00	0.01	-0.03
9.868	0.35	0.00	0.01	-0.13
9.893	0.55	0.01	0.03	-0.02
9.918	0.84	0.00	0.02	-0.03
9.943	1.41	0.01	0.00	0.05
9.968	2.02	0.00	0.03	0.04
9.993	2.55	0.01	0.06	-0.10
10.018	3.05	0.02	0.04	-0.15
10.043	3.50	0.01	0.04	0.01
10.068	4.24	0.02	0.06	0.00
10.093	4.86	0.03	0.10	0.08
10.118	5.44	0.04	0.05	0.08
10.143	6.20	0.04	0.11	-0.11
10.168	6.74	0.04	0.14	-0.23
10.193	7.32	0.04	0.18	0.00
10.218	7.79	0.04	0.18	0.33
10.243	8.64	0.06	0.19	0.39
10.268	9.36	0.06	0.31	0.16
10.293	9.57	0.09	0.35	0.19
10.318	10.13	0.07	0.42	0.00
10.343	10.42	0.07	0.49	-0.35
10.368	10.83	0.10	0.56	0.26
10.393	11.15	0.11	0.65	0.28
10.418	11.42	0.11	0.74	0.43
10.443	11.53	0.15	0.87	-0.03
10.468	11.72	0.19	1.05	-0.07

10.493	11.88	0.19	1.16	-0.06
10.518	11.86	0.24	1.32	0.04
10.543	12.09	0.26	1.66	0.28
10.568	12.20	0.28	1.79	0.61
10.593	12.15	0.34	2.07	0.70
10.618	12.24	0.32	2.31	0.64
10.643	11.92	0.37	2.61	1.16
10.668	11.85	0.46	2.70	1.69
10.693	12.05	0.48	2.92	1.24
10.718	11.81	0.49	3.17	1.29
10.743	11.63	0.48	3.32	1.60
10.768	11.44	0.53	3.54	2.15
10.793	11.43	0.54	3.66	2.43
10.818	11.49	0.55	3.87	2.70
10.843	11.38	0.50	4.06	3.18
10.868	11.13	0.56	4.19	3.51
10.893	11.40	0.54	4.33	3.75
10.918	11.42	0.57	4.51	3.90
10.943	11.34	0.57	4.70	4.17
10.968	11.69	0.61	4.61	4.92
10.993	11.69	0.62	4.81	5.22
11.018	12.05	0.63	5.01	5.45

Table T9: Absolute photoionization cross section of 3-methyl-1-buten-1-ol (simulated).

E (eV)	σ (Mb), m/z = 86	E (eV)	σ (Mb), m/z = 86	E (eV)	σ (Mb), m/z = 86
8.4	0.00	9.06	13.88	9.74	16.97
8.42	0.00	9.08	14.18	9.76	16.97
8.44	0.00	9.1	14.47	9.78	16.98
8.46	0.00	9.12	14.73	9.8	16.98
8.48	0.01	9.14	14.96	9.82	16.99
8.5	0.11	9.16	15.16	9.84	16.99
8.52	0.49	9.18	15.34	9.86	16.99
8.54	1.18	9.2	15.50	9.88	16.99
8.56	1.87	9.22	15.65	9.9	16.99
8.58	2.35	9.24	15.79	9.92	17.00
8.6	2.71	9.26	15.92	9.94	17.00
8.62	2.97	9.28	16.04	9.96	17.00
8.64	3.22	9.3	16.15	9.98	17.00
8.66	3.54	9.32	16.25	10	17.00
8.68	4.05	9.34	16.34	10.02	17.00
8.7	4.75	9.36	16.41	10.04	17.00
8.72	5.56	9.38	16.48	10.06	17.00
8.74	6.43	9.4	16.54	10.08	17.00
8.76	7.18	9.42	16.60	10.1	17.00
8.78	7.76	9.44	16.65	10.12	17.00
8.79	7.99	9.46	16.69	10.14	17.00
8.8	8.21	9.48	16.73	10.16	17.00
8.82	8.62	9.5	16.77	10.18	17.00
8.84	9.06	9.52	16.80	10.2	17.00
8.86	9.56	9.54	16.83	10.22	17.00
8.88	10.12	9.56	16.85	10.24	17.00
8.9	10.72	9.58	16.87	10.26	17.00
8.92	11.30	9.6	16.89	10.28	17.00
8.94	11.83	9.62	16.91	10.3	17.00
8.96	12.27	9.64	16.92	10.32	17.00
8.98	12.63	9.66	16.93	10.34	17.00
9	12.95	9.68	16.94	10.36	17.00
9.02	13.26	9.7	16.95	10.38	17.00
9.04	13.57	9.72	16.96	10.4	17.00

Table T10: Absolute photoionization cross section of 3-methyl-2-buten-1-ol (prenol) (measured, 550 K).

E (eV)	σ (Mb), m/z =									
	86	85	84	72	71	69	68	67	58	43
8.513	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
8.538	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.563	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.588	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.613	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
8.638	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.663	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.688	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.713	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.738	0.05	0.01	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
8.763	0.22	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
8.788	0.19	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
8.813	0.26	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00
8.838	0.47	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00
8.863	0.39	0.00	0.00	0.00	0.02	0.01	0.03	0.00	0.00	0.00
8.888	0.66	0.01	0.00	0.01	0.02	0.00	0.05	0.00	0.00	0.00
8.913	0.91	0.00	0.00	0.00	0.02	0.01	0.02	0.00	0.00	0.00
8.938	1.00	0.01	0.01	0.00	0.05	0.00	0.11	0.00	0.00	0.00
8.963	1.47	0.01	0.01	0.00	0.06	0.01	0.12	0.00	0.00	0.00
8.988	1.57	0.01	0.00	0.00	0.07	0.02	0.17	0.00	0.00	0.00
9.013	1.75	0.02	0.00	0.00	0.07	0.01	0.16	0.00	0.02	0.00
9.038	2.12	0.01	0.00	0.01	0.08	0.01	0.15	0.01	0.01	0.00
9.063	2.44	0.00	0.01	0.00	0.07	0.03	0.32	0.00	0.01	0.00
9.088	2.91	0.02	0.00	0.01	0.09	0.01	0.20	0.00	0.01	0.00
9.113	3.19	0.02	0.00	0.00	0.13	0.01	0.30	0.00	0.00	0.00
9.138	3.68	0.01	0.01	0.00	0.14	0.04	0.48	0.00	0.00	0.01
9.163	3.91	0.00	0.01	0.01	0.16	0.03	0.44	0.00	0.02	0.00
9.188	4.59	0.02	0.00	0.03	0.31	0.06	0.50	0.00	0.01	0.00
9.213	4.75	0.03	0.00	0.01	0.34	0.03	0.50	0.00	0.04	0.01
9.238	5.13	0.03	0.01	0.02	0.19	0.02	0.63	0.00	0.02	0.00
9.263	5.40	0.03	0.00	0.00	0.39	0.04	0.64	0.00	0.06	0.01
9.288	5.86	0.03	0.01	0.03	0.33	0.08	0.80	0.00	0.06	0.01
9.313	6.08	0.01	0.00	0.05	0.45	0.05	0.97	0.00	0.06	0.00
9.338	6.30	0.02	0.00	0.04	0.62	0.07	0.93	0.01	0.02	0.00
9.363	6.53	0.02	0.00	0.07	0.73	0.05	1.20	0.01	0.05	0.01
9.388	6.46	0.04	0.00	0.03	0.75	0.05	1.26	0.01	0.07	0.01
9.413	6.66	0.02	0.03	0.03	0.84	0.11	1.43	0.00	0.06	0.01

9.438	6.98	0.04	0.03	0.06	0.83	0.08	1.61	0.00	0.09	0.00
9.463	7.06	0.07	0.08	0.05	1.09	0.10	1.70	0.00	0.10	0.01
9.488	7.17	0.04	0.08	0.06	1.18	0.16	1.92	0.00	0.11	0.00
9.513	7.19	0.05	0.12	0.05	1.16	0.13	2.01	0.01	0.13	0.01
9.538	6.93	0.06	0.10	0.07	1.35	0.12	2.01	0.00	0.08	0.00
9.563	7.24	0.07	0.14	0.07	1.41	0.12	2.24	0.00	0.11	0.00
9.588	7.60	0.04	0.16	0.05	1.49	0.17	2.28	0.00	0.18	0.02
9.613	7.21	0.08	0.17	0.09	1.72	0.18	2.46	0.00	0.15	0.01
9.638	7.22	0.10	0.22	0.10	1.87	0.19	2.53	0.00	0.20	0.01
9.663	7.14	0.06	0.26	0.11	1.97	0.19	2.62	0.01	0.26	0.01
9.688	7.78	0.09	0.27	0.11	2.31	0.19	2.66	0.01	0.27	0.03
9.713	7.41	0.07	0.23	0.12	2.39	0.15	2.71	0.00	0.48	0.02
9.738	7.12	0.07	0.27	0.17	2.37	0.16	2.78	0.01	0.49	0.03
9.763	7.64	0.08	0.34	0.14	2.70	0.17	2.77	0.00	0.68	0.01
9.788	7.33	0.08	0.40	0.18	2.78	0.18	2.88	0.00	0.70	0.01
9.813	7.30	0.11	0.32	0.15	2.86	0.16	2.88	0.00	0.68	0.05
9.838	7.35	0.12	0.35	0.17	3.15	0.19	2.78	0.00	0.78	0.05
9.863	7.24	0.05	0.45	0.16	3.24	0.23	2.85	0.00	0.84	0.03
9.888	7.64	0.08	0.34	0.18	3.46	0.21	3.09	0.00	0.97	0.01
9.913	7.61	0.11	0.45	0.19	3.62	0.23	3.15	0.00	0.93	0.07
9.938	7.39	0.15	0.46	0.20	3.48	0.22	3.05	0.00	1.04	0.03
9.963	8.10	0.15	0.51	0.21	3.96	0.20	3.28	0.00	1.05	0.10
9.988	7.91	0.13	0.55	0.20	4.04	0.25	3.32	0.02	1.11	0.10
10.013	7.96	0.10	0.49	0.28	4.36	0.25	3.41	0.01	1.08	0.02
10.038	7.85	0.15	0.68	0.29	4.27	0.22	3.43	0.01	1.18	0.04
10.063	8.08	0.13	0.64	0.20	4.59	0.24	3.41	0.01	1.19	0.05
10.088	8.41	0.17	0.61	0.25	4.83	0.26	3.43	0.01	1.27	0.05
10.113	8.37	0.15	0.61	0.26	5.09	0.27	3.54	0.00	1.27	0.05
10.138	8.60	0.15	0.67	0.38	5.13	0.27	3.60	0.01	1.35	0.11
10.163	8.50	0.14	0.68	0.39	5.66	0.24	3.55	0.01	1.41	0.04
10.188	8.77	0.20	0.72	0.38	5.68	0.25	3.61	0.00	1.31	0.10
10.213	8.70	0.15	0.71	0.38	6.34	0.29	3.73	0.01	1.43	0.05
10.238	8.95	0.18	0.72	0.42	6.94	0.25	3.90	0.00	1.51	0.14
10.263	9.05	0.17	0.81	0.46	7.45	0.31	3.98	0.01	1.58	0.12
10.288	8.92	0.16	0.86	0.45	7.89	0.29	4.10	0.01	1.55	0.09
10.313	9.21	0.19	0.89	0.56	8.60	0.28	4.22	0.01	1.47	0.11
10.338	9.13	0.20	0.85	0.50	9.15	0.29	4.16	0.01	1.51	0.13
10.363	9.21	0.18	0.88	0.56	9.81	0.33	4.28	0.02	1.55	0.18
10.388	9.46	0.20	0.87	0.73	10.57	0.34	4.32	0.02	1.62	0.16
10.413	9.25	0.19	0.90	0.67	11.15	0.33	4.34	0.01	1.58	0.25
10.438	9.48	0.22	0.86	0.71	12.30	0.34	4.57	0.03	1.69	0.25
10.463	9.58	0.21	0.85	0.74	12.86	0.36	4.69	0.02	1.82	0.19
10.488	9.68	0.25	0.93	0.78	13.39	0.40	4.60	0.02	1.67	0.29

10.513	9.62	0.25	0.99	0.82	14.03	0.33	4.71	0.04	1.69	0.23
10.538	9.98	0.24	0.89	0.82	14.99	0.38	5.00	0.05	1.73	0.19
10.563	9.70	0.25	0.84	0.88	15.53	0.37	4.93	0.01	1.79	0.31
10.588	9.88	0.26	1.00	0.89	16.28	0.43	5.10	0.03	1.77	0.29
10.613	9.86	0.22	1.01	0.98	16.57	0.39	5.06	0.06	1.79	0.37
10.638	9.63	0.26	1.03	1.03	17.51	0.45	5.20	0.05	1.82	0.29
10.663	9.99	0.26	1.02	1.00	17.94	0.38	5.26	0.05	1.78	0.33
10.688	9.49	0.26	0.96	1.01	17.70	0.39	5.12	0.07	1.55	0.32
10.713	9.84	0.28	0.97	1.19	18.61	0.42	5.31	0.05	1.74	0.40
10.738	9.90	0.28	0.94	1.15	19.43	0.44	5.47	0.07	1.62	0.41
10.763	10.00	0.28	0.99	1.09	19.60	0.42	5.31	0.11	1.84	0.42
10.788	9.91	0.28	0.92	1.26	20.00	0.44	5.08	0.09	1.71	0.42
10.813	9.76	0.38	0.94	1.14	20.52	0.46	5.45	0.12	1.78	0.46
10.838	9.78	0.40	1.02	1.28	20.60	0.53	5.62	0.17	1.72	0.45
10.863	9.85	0.37	1.00	1.23	21.39	0.50	5.39	0.14	1.79	0.38
10.888	10.10	0.36	0.94	1.31	21.82	0.51	5.51	0.21	1.71	0.51
10.913	9.82	0.33	0.91	1.21	22.26	0.57	5.52	0.21	1.63	0.50
10.938	9.80	0.32	0.92	1.39	22.47	0.53	5.50	0.23	1.68	0.37
10.963	9.89	0.39	0.96	1.34	22.83	0.55	5.57	0.23	1.58	0.59
10.988	10.00	0.36	1.00	1.35	23.43	0.56	5.82	0.29	1.61	0.56
11.013	10.16	0.40	0.99	1.47	23.75	0.61	5.83	0.31	1.66	0.52

Table T11: Absolute photoionization cross section of 3-methyl-3-buten-1-ol (measured, 550 K).

E (eV)	σ (Mb), *m*/*z* =									
	86	84	71	69	68	67	58	57	56	44
8.803	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.828	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.853	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
8.878	0.03	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
8.903	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	-0.01	0.00
8.928	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.01	-0.01	0.00
8.953	0.07	0.00	0.00	0.00	0.01	0.00	0.00	0.01	-0.01	0.00
8.978	0.12	0.00	0.00	0.00	0.02	0.00	0.00	0.00	-0.01	0.00
9.003	0.14	0.00	0.00	0.00	0.05	0.00	0.00	0.00	-0.01	0.00
9.028	0.21	0.00	0.00	0.00	0.06	0.00	0.00	0.00	-0.02	0.00
9.053	0.26	0.00	0.01	0.00	0.05	0.00	0.01	0.00	-0.02	0.00
9.078	0.31	0.00	0.00	0.01	0.06	0.00	0.00	0.00	-0.02	0.00
9.103	0.44	0.00	0.00	0.00	0.06	0.00	0.00	0.00	-0.02	0.00
9.128	0.53	0.00	0.00	0.00	0.08	0.00	0.00	0.00	-0.02	0.00
9.153	0.64	0.00	0.01	0.00	0.12	0.01	0.00	0.00	-0.03	0.00
9.178	0.81	0.01	0.00	0.01	0.13	0.00	0.00	0.00	-0.03	0.00
9.203	0.95	0.01	0.03	0.00	0.17	0.00	0.01	0.00	-0.02	0.00
9.228	1.28	0.01	0.02	0.00	0.20	0.00	0.00	0.00	-0.02	0.00
9.253	1.40	0.00	0.01	0.02	0.28	0.00	0.00	0.00	-0.03	0.00
9.278	1.77	0.00	0.02	0.01	0.27	0.00	0.00	0.00	-0.02	0.00
9.303	2.08	0.00	0.02	0.01	0.38	0.01	0.00	0.00	-0.03	0.00
9.328	2.14	0.01	0.03	0.03	0.48	0.00	0.00	0.00	-0.02	0.00
9.353	2.55	0.00	0.06	0.03	0.56	0.00	0.01	0.00	-0.01	0.00
9.378	3.12	0.01	0.06	0.05	0.61	0.00	0.01	0.00	-0.02	0.00
9.403	3.21	0.01	0.07	0.04	0.68	0.00	0.00	0.00	-0.02	0.00
9.428	3.79	0.01	0.08	0.06	0.98	0.00	0.01	0.00	-0.01	0.00
9.453	4.01	0.03	0.05	0.06	1.05	0.00	0.00	0.00	-0.01	0.00
9.478	4.50	0.04	0.07	0.06	1.22	0.00	0.00	0.00	0.05	0.00
9.503	4.88	0.05	0.12	0.07	1.30	0.00	0.00	0.00	0.07	0.00
9.528	5.02	0.05	0.08	0.08	1.40	0.00	0.02	0.00	0.12	0.00
9.553	5.22	0.07	0.14	0.08	1.71	0.00	0.01	0.01	0.16	0.00
9.578	5.71	0.05	0.16	0.11	2.04	0.00	0.02	0.01	0.07	0.00
9.603	5.86	0.12	0.19	0.14	2.29	0.00	0.03	-0.01	-0.03	0.00
9.628	6.08	0.13	0.18	0.16	2.56	0.00	0.02	-0.01	0.01	0.00
9.653	6.21	0.11	0.21	0.18	2.43	0.00	0.02	0.00	0.10	0.00
9.678	6.12	0.16	0.28	0.15	3.26	0.00	0.03	0.01	0.03	0.00
9.703	6.55	0.13	0.26	0.21	3.40	0.00	0.06	-0.01	0.06	0.00
9.728	6.51	0.14	0.34	0.26	3.79	0.01	0.09	0.02	0.11	0.00
9.753	6.54	0.14	0.34	0.19	4.16	0.01	0.11	0.01	0.00	0.00

9.778	6.74	0.22	0.41	0.26	4.56	0.00	0.10	0.00	0.21	0.00
9.803	6.92	0.22	0.35	0.31	4.75	0.01	0.10	0.03	0.23	0.00
9.828	6.71	0.20	0.39	0.38	5.03	0.01	0.12	0.08	0.13	0.00
9.853	6.59	0.17	0.40	0.31	5.15	0.01	0.12	0.00	0.54	0.00
9.878	7.02	0.24	0.42	0.36	5.96	0.01	0.14	0.06	0.33	0.01
9.903	6.68	0.23	0.42	0.30	6.06	0.02	0.15	0.04	0.26	0.00
9.928	6.65	0.25	0.46	0.38	6.35	0.01	0.19	0.02	0.46	0.01
9.953	7.08	0.26	0.45	0.38	7.13	0.02	0.18	0.00	0.44	0.01
9.978	6.91	0.28	0.49	0.37	6.92	0.01	0.20	0.03	0.23	0.00
10.003	7.10	0.27	0.46	0.40	7.23	0.00	0.18	0.10	0.63	0.01
10.028	7.12	0.27	0.56	0.37	7.73	0.01	0.18	0.03	0.96	0.00
10.053	7.19	0.33	0.54	0.40	7.77	0.02	0.23	0.00	0.48	0.00
10.078	6.98	0.33	0.57	0.40	7.82	0.01	0.25	0.04	0.73	0.02
10.103	7.50	0.36	0.56	0.42	8.04	0.02	0.22	0.11	0.66	0.01
10.128	7.45	0.41	0.60	0.55	8.20	0.01	0.23	0.06	0.55	0.01
10.153	7.55	0.37	0.63	0.50	8.60	0.02	0.25	0.08	0.88	0.01
10.178	7.59	0.35	0.71	0.52	8.88	0.02	0.23	0.08	0.81	0.02
10.203	7.57	0.42	0.66	0.48	9.30	0.03	0.20	0.07	0.96	0.02
10.228	7.75	0.43	0.65	0.53	9.36	0.03	0.24	0.07	0.97	0.01
10.253	7.82	0.40	0.75	0.54	9.48	0.04	0.25	0.08	0.71	0.02
10.278	7.73	0.41	0.75	0.51	9.84	0.02	0.25	0.06	1.11	0.03
10.303	8.17	0.38	0.79	0.54	10.37	0.05	0.29	0.09	1.39	0.03
10.328	8.27	0.39	0.73	0.66	10.10	0.05	0.29	0.10	1.32	0.03
10.353	7.94	0.41	0.89	0.63	11.06	0.06	0.32	0.13	1.53	0.03
10.378	8.14	0.43	0.85	0.65	11.57	0.07	0.30	0.13	1.52	0.04
10.403	8.25	0.50	0.92	0.70	11.82	0.10	0.24	0.12	1.91	0.06
10.428	8.23	0.50	1.00	0.78	12.18	0.11	0.32	0.17	1.91	0.05
10.453	8.45	0.50	1.07	0.78	13.08	0.11	0.31	0.15	2.61	0.06
10.478	8.40	0.50	1.12	0.82	13.28	0.15	0.33	0.16	2.51	0.05
10.503	8.72	0.48	1.22	0.82	13.84	0.21	0.36	0.24	2.68	0.08
10.528	8.56	0.49	1.18	0.87	14.50	0.26	0.36	0.16	2.93	0.07
10.553	8.91	0.54	1.32	0.86	15.31	0.27	0.39	0.23	3.12	0.08
10.578	8.89	0.48	1.36	0.97	15.69	0.24	0.39	0.21	3.70	0.10
10.603	8.87	0.53	1.47	0.94	16.18	0.38	0.42	0.26	3.52	0.12
10.628	8.93	0.56	1.39	1.00	16.54	0.43	0.40	0.27	3.36	0.13
10.653	8.95	0.50	1.46	1.01	17.01	0.51	0.39	0.24	4.12	0.13
10.678	9.18	0.56	1.52	0.94	17.41	0.49	0.39	0.35	4.57	0.10
10.703	9.15	0.55	1.54	1.09	17.51	0.55	0.46	0.32	4.52	0.16
10.728	8.96	0.51	1.71	1.14	18.01	0.63	0.32	0.26	5.21	0.15
10.753	8.72	0.53	1.60	1.02	17.84	0.76	0.43	0.33	5.51	0.15
10.778	8.85	0.49	1.77	1.10	18.46	0.77	0.39	0.36	5.04	0.18
10.803	9.07	0.51	1.80	1.10	18.90	1.04	0.38	0.41	5.41	0.19
10.828	8.96	0.48	1.78	1.07	19.14	1.02	0.42	0.37	6.06	0.19

10.853	9.35	0.45	1.84	1.09	19.64	1.15	0.44	0.38	5.82	0.19
10.878	9.17	0.52	1.92	1.16	19.62	1.33	0.40	0.39	5.76	0.19
10.903	9.28	0.50	1.92	1.13	19.54	1.33	0.48	0.46	6.47	0.20
10.928	9.36	0.52	1.85	1.15	19.34	1.59	0.50	0.49	6.34	0.23
10.953	9.25	0.51	1.96	1.33	20.31	1.67	0.44	0.33	7.07	0.25
10.978	9.41	0.52	2.03	1.18	20.17	1.92	0.39	0.43	7.03	0.22
11.003	9.10	0.54	2.10	1.29	20.45	2.03	0.47	0.50	7.07	0.24
11.028	9.34	0.54	2.11	1.27	20.51	2.24	0.43	0.47	6.89	0.25

Table T12: Absolute photoionization cross section of 3-methylbutanal (isopentanal) (measured, 550 K).

E (eV)	σ (Mb), *m*/*z* =							
	86	71	68	59	58	57	45	44
9.513	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.538	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
9.563	0.00	0.00	0.01	0.01	0.02	0.00	0.00	0.00
9.588	0.00	0.00	0.00	0.01	0.03	-0.01	0.00	0.01
9.613	0.04	0.01	0.00	0.00	0.05	-0.01	0.00	0.00
9.638	0.06	0.00	0.00	0.00	0.09	-0.01	0.00	0.00
9.663	0.16	0.00	0.00	0.00	0.08	0.00	0.00	0.00
9.688	0.24	0.00	0.00	0.01	0.19	0.05	0.00	0.00
9.713	0.42	0.00	0.00	0.00	0.29	0.01	0.00	0.00
9.738	0.61	0.00	0.00	0.02	0.47	0.01	0.00	0.00
9.763	0.85	0.01	0.00	0.01	0.59	0.02	0.00	0.01
9.788	1.12	0.02	0.00	0.03	0.86	0.01	0.01	0.00
9.813	1.57	0.00	0.01	0.05	1.13	0.03	0.02	0.02
9.838	1.80	0.02	0.02	0.04	1.39	0.03	0.00	0.03
9.863	1.88	0.03	0.01	0.06	1.73	0.04	0.00	0.02
9.888	2.00	0.02	0.02	0.08	1.89	0.03	0.00	0.03
9.913	2.20	0.01	0.02	0.06	2.39	0.03	0.03	0.03
9.938	2.26	0.02	0.02	0.10	2.57	0.02	0.02	0.03
9.963	2.27	0.04	0.03	0.13	2.71	0.07	0.02	0.02
9.988	2.37	0.07	0.03	0.12	3.35	-0.01	0.04	0.02
10.013	2.50	0.05	0.02	0.11	3.61	0.06	0.03	0.03
10.038	2.42	0.05	0.05	0.12	4.00	0.03	0.05	0.03
10.063	2.49	0.08	0.03	0.17	4.37	0.10	0.03	0.02
10.088	2.41	0.04	0.04	0.17	4.63	0.06	0.03	0.06
10.113	2.64	0.06	0.06	0.16	4.81	0.01	0.06	0.06
10.138	2.78	0.08	0.04	0.17	5.05	0.02	0.04	0.08
10.163	2.82	0.08	0.04	0.14	5.02	0.01	0.08	0.05
10.188	2.76	0.08	0.08	0.18	5.46	0.09	0.07	0.07
10.213	2.80	0.09	0.10	0.21	5.92	0.07	0.06	0.08
10.238	2.91	0.11	0.06	0.22	5.84	0.10	0.07	0.10
10.263	2.79	0.12	0.09	0.19	5.90	0.07	0.10	0.11
10.288	3.08	0.12	0.07	0.26	6.30	0.13	0.08	0.08
10.313	3.00	0.12	0.08	0.25	6.39	0.04	0.12	0.11
10.338	2.99	0.12	0.08	0.26	6.69	0.05	0.11	0.12
10.363	3.16	0.13	0.06	0.21	6.67	0.11	0.10	0.12
10.388	3.05	0.15	0.09	0.28	6.61	0.10	0.13	0.18
10.413	3.02	0.14	0.09	0.26	7.25	0.14	0.15	0.18

10.438	3.14	0.16	0.11	0.29	7.17	0.13	0.16	0.21
10.463	3.25	0.16	0.09	0.30	7.41	0.11	0.13	0.18
10.488	3.19	0.13	0.07	0.27	7.33	0.08	0.15	0.21
10.513	3.05	0.15	0.08	0.29	6.99	0.15	0.18	0.27
10.538	3.25	0.19	0.10	0.35	7.83	0.22	0.17	0.28
10.563	3.43	0.18	0.10	0.27	7.88	0.16	0.20	0.26
10.588	3.41	0.17	0.10	0.28	7.56	0.20	0.28	0.34
10.613	3.34	0.23	0.10	0.28	8.20	0.16	0.26	0.37
10.638	3.28	0.22	0.10	0.31	7.82	0.16	0.21	0.38
10.663	3.46	0.24	0.14	0.27	7.96	0.15	0.28	0.45
10.688	3.49	0.21	0.15	0.29	8.54	0.23	0.32	0.44
10.713	3.48	0.25	0.11	0.29	8.27	0.23	0.32	0.51
10.738	3.48	0.26	0.12	0.31	8.29	0.22	0.35	0.57
10.763	3.46	0.29	0.11	0.37	8.42	0.22	0.34	0.65
10.788	3.38	0.27	0.12	0.33	8.00	0.19	0.37	0.68
10.813	3.56	0.29	0.11	0.32	8.56	0.21	0.40	0.74
10.838	3.50	0.27	0.11	0.36	8.51	0.20	0.45	0.83
10.863	3.73	0.28	0.14	0.33	8.37	0.19	0.52	0.92
10.888	3.70	0.31	0.12	0.31	8.56	0.26	0.43	1.05
10.913	3.69	0.34	0.14	0.29	8.58	0.25	0.43	1.12
10.938	3.82	0.31	0.14	0.37	8.96	0.26	0.52	1.30
10.963	3.61	0.35	0.15	0.37	8.54	0.20	0.51	1.33
10.988	3.75	0.40	0.13	0.35	8.67	0.28	0.55	1.49
11.013	3.92	0.42	0.14	0.35	8.99	0.31	0.63	1.56

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