

Supplementary information for:
**Kinetic analysis of the thermal processing of
silica and organosilica**

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1 Overview of all recorded MS-data

These figures give the full overview of the MS-data, of which a selection is given in the main article figures 1-4. In the main article, the following m/z -ratios were assigned to specific compounds (where ‘sim’ indicates ‘recorded simultaneous with’ and [O₂] and [N₂] implies that signal may be masked by O₂ or N₂ from atmosphere): 2 to hydrogen, 16 to oxygen (sim 32, [O₂]), 17 to water (sim 18, 19), 26 to acetylene (sim 25), 30 to NO_x (or, when sim 46 for NO₂), 31 to ethanol (sim 45, 46), 41 to unknown, 42 to C₂H₄O, 43 to acetaldehyde (when sim 29 and 44), 44 to C₂H₄O (when sim with 41, 42, 43, acetylene and/or 29 [N₂]) or to carbon dioxide (when sim with 12 or 28 [N₂]).

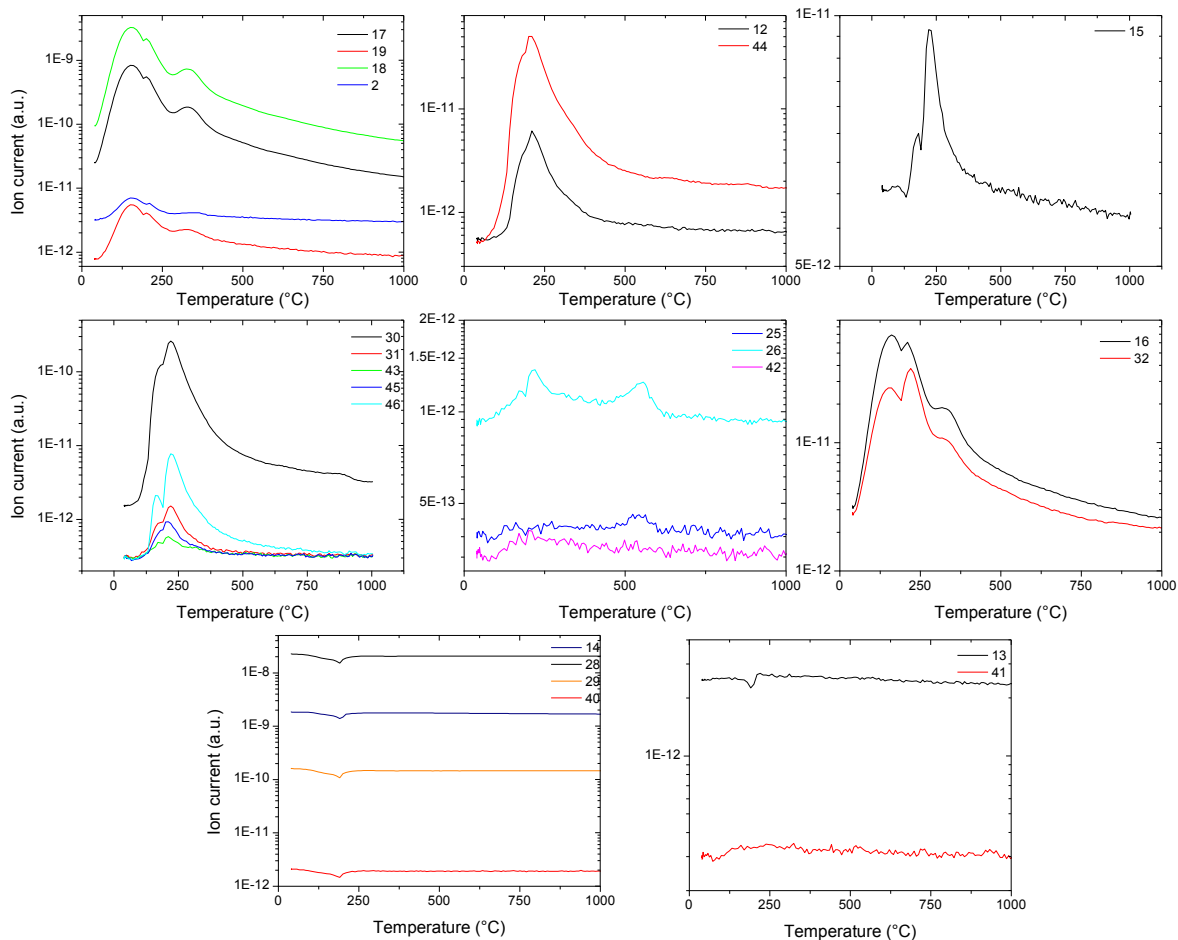


Figure S1: Overview of all recorded MS-signals for silica under nitrogen, the numbers in the legend denote the m/z -signal.

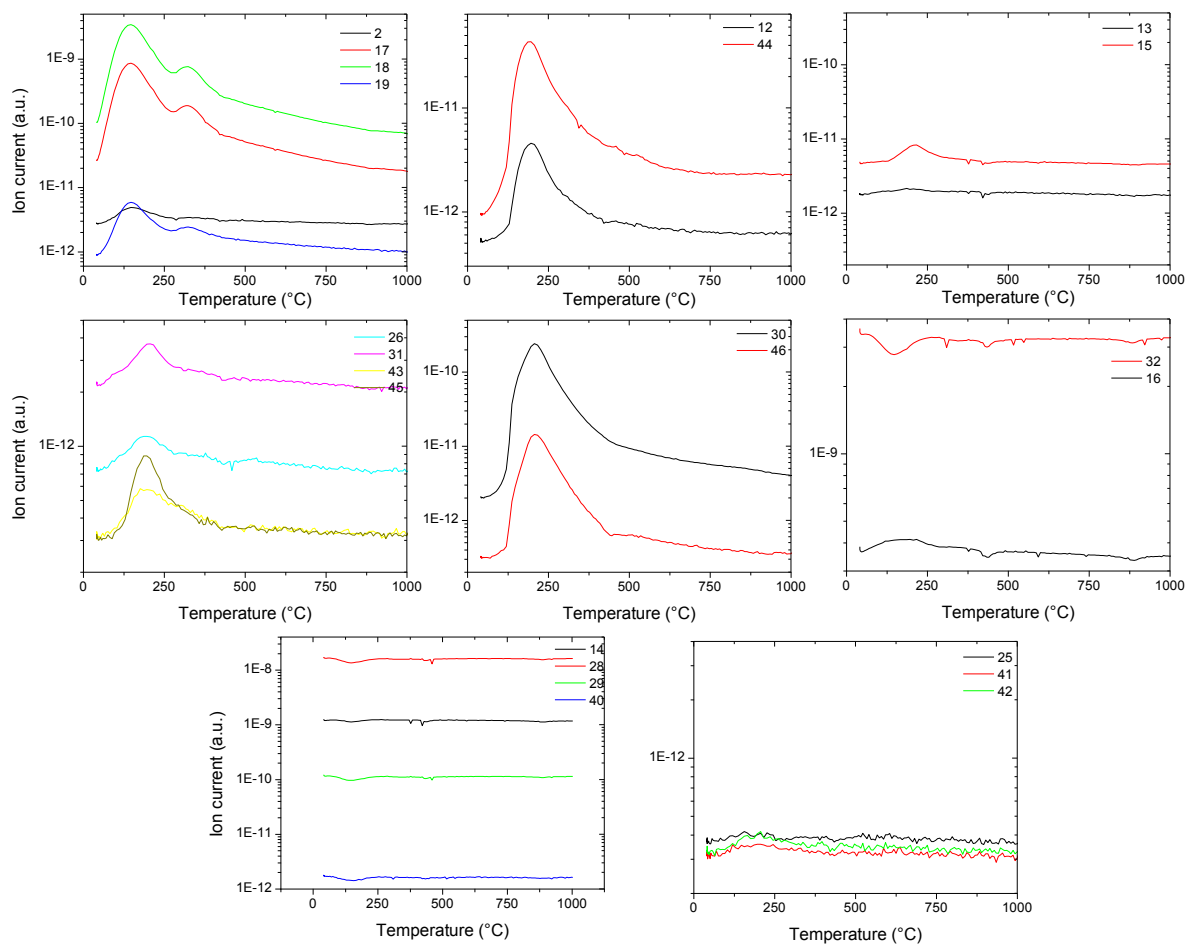


Figure S2: Overview of all recorded MS-signals for silica under air, the numbers in the legend denote the m/z -signal.

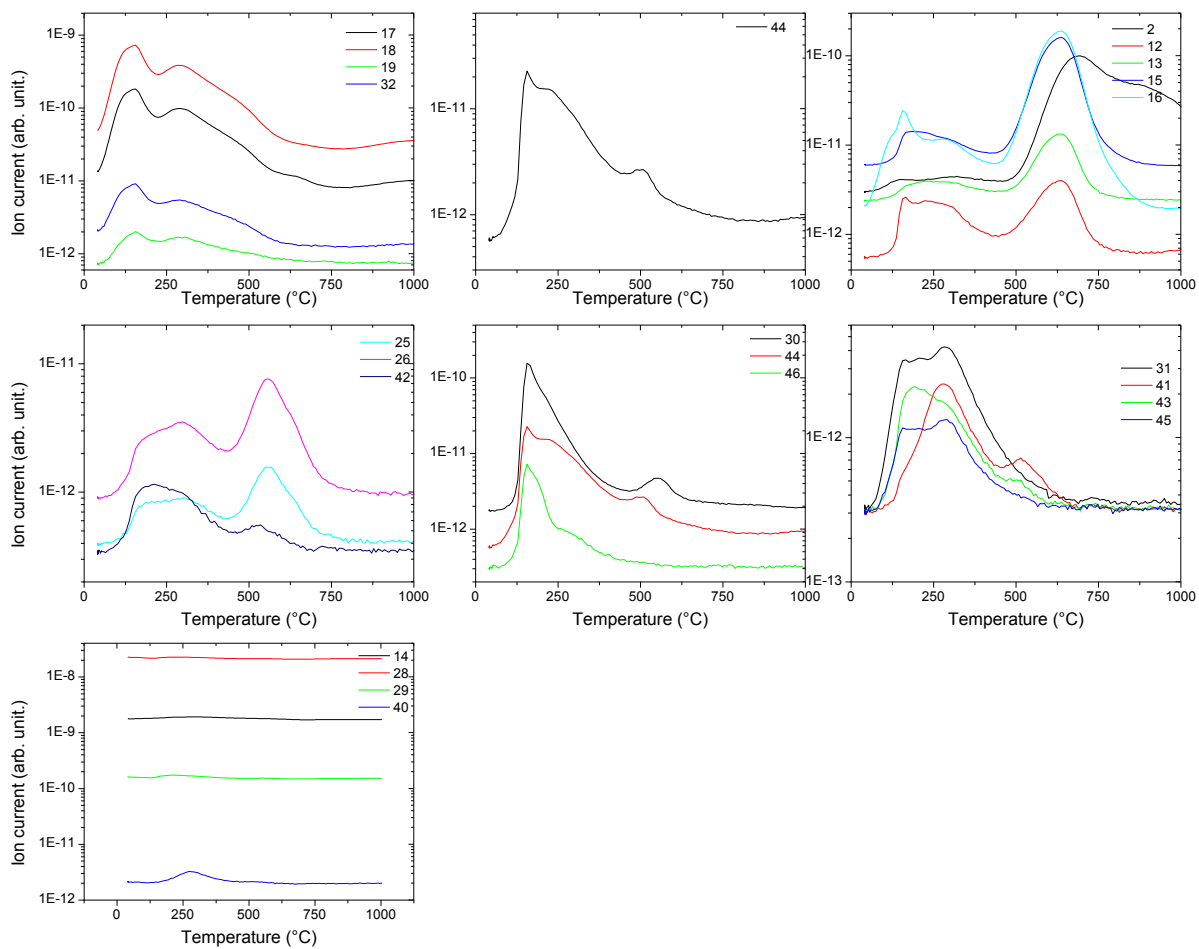


Figure S3: Overview of all recorded MS-signals for BTESE under nitrogen, the numbers in the legend denote the m/z -signal.

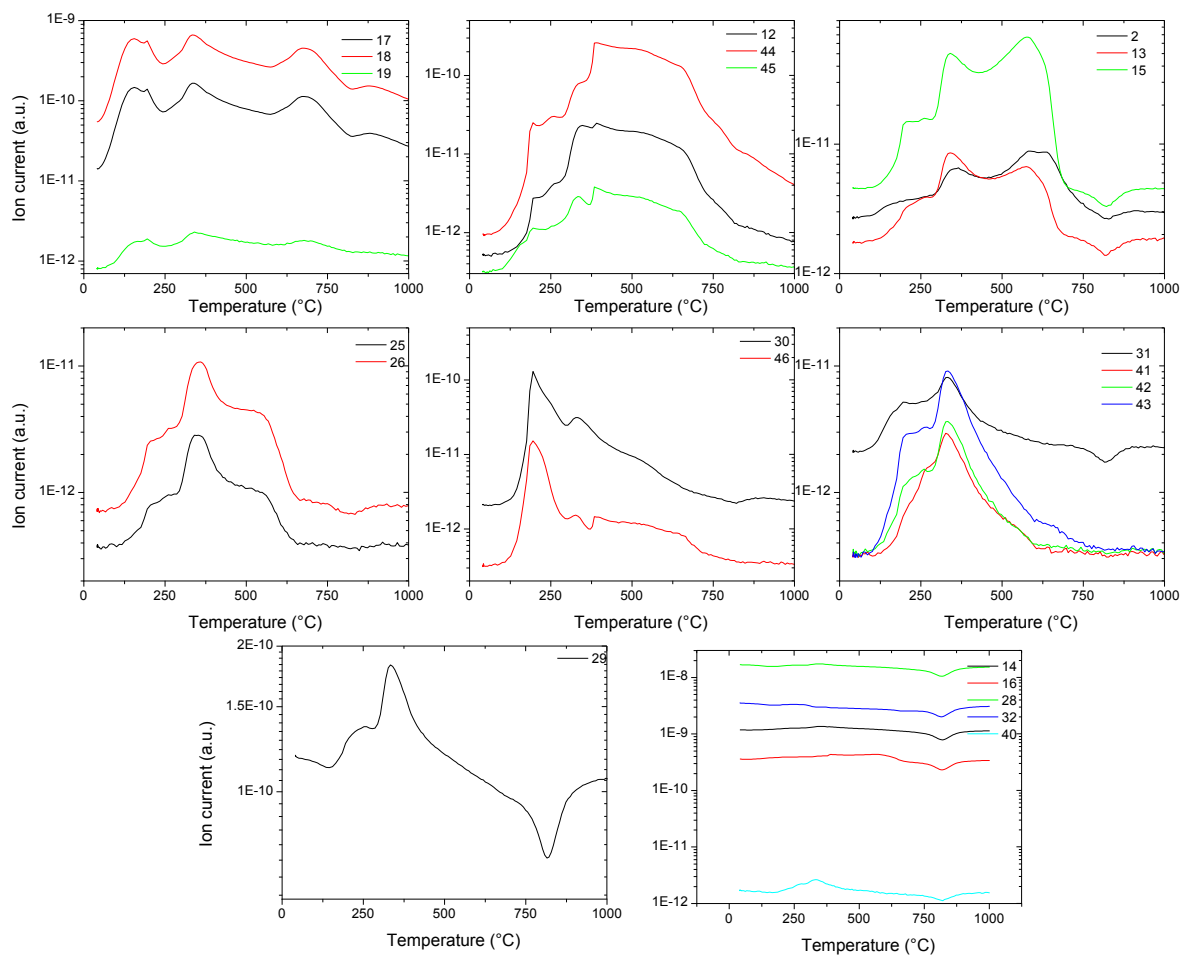


Figure S4: Overview of all recorded MS-signals for BTESE under air, the numbers in the legend denote the m/z -signal.

2 Mass loss data

These figures give the mass loss data and the corresponding conversion curves for silica and organosilica under N₂ and air for all heating rates.

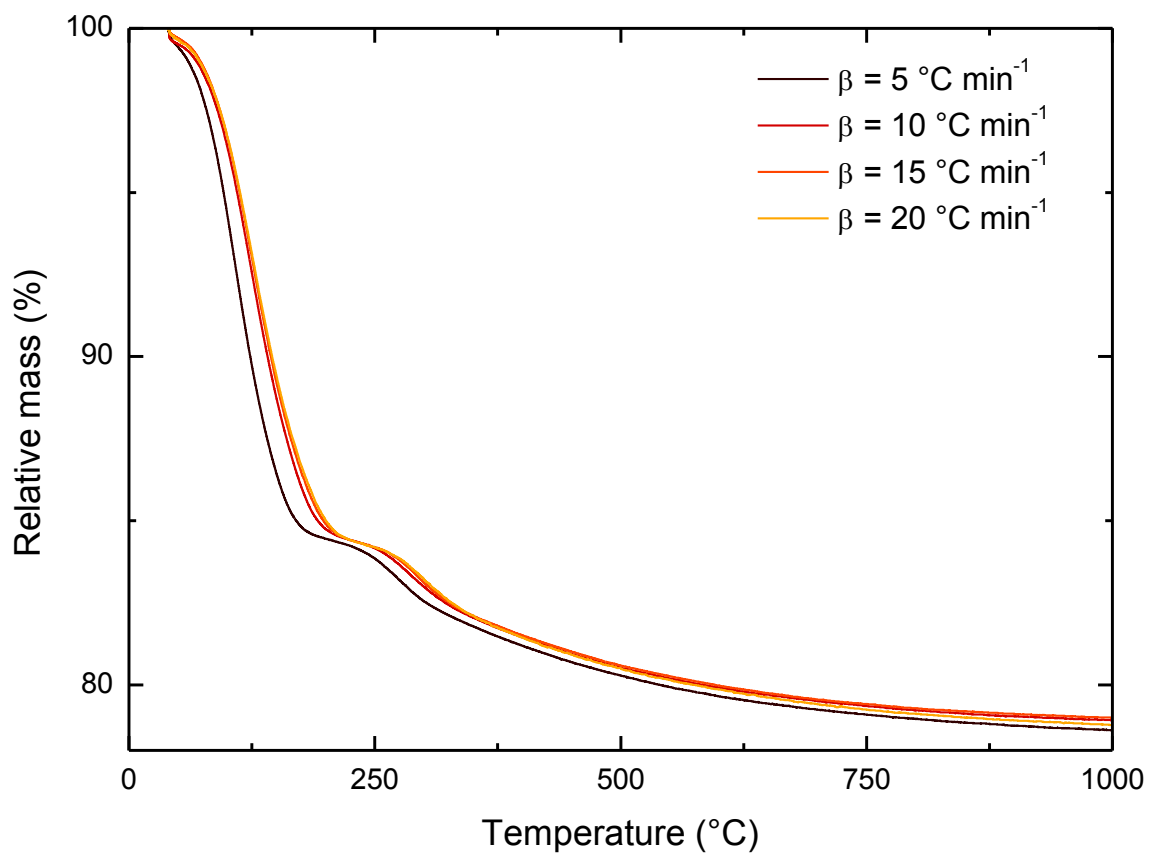


Figure S5: TGA-graphs for the thermal treatment of silica under N₂ at heating rates β of 5, 10, 15, and 20 °C min⁻¹.

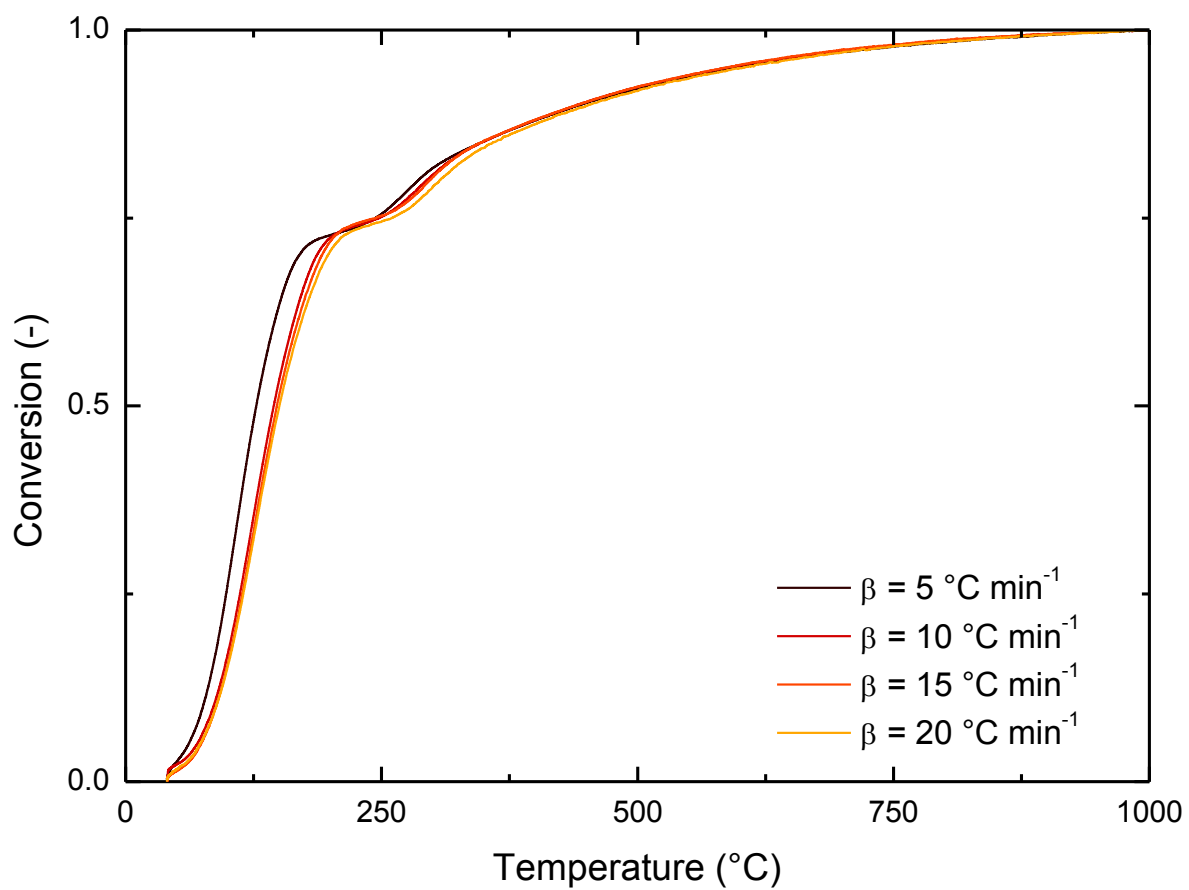


Figure S6: Conversion of the mass loss of silica under N_2 at heating rates β of 5, 10, 15, and 20 °C min^{-1} .

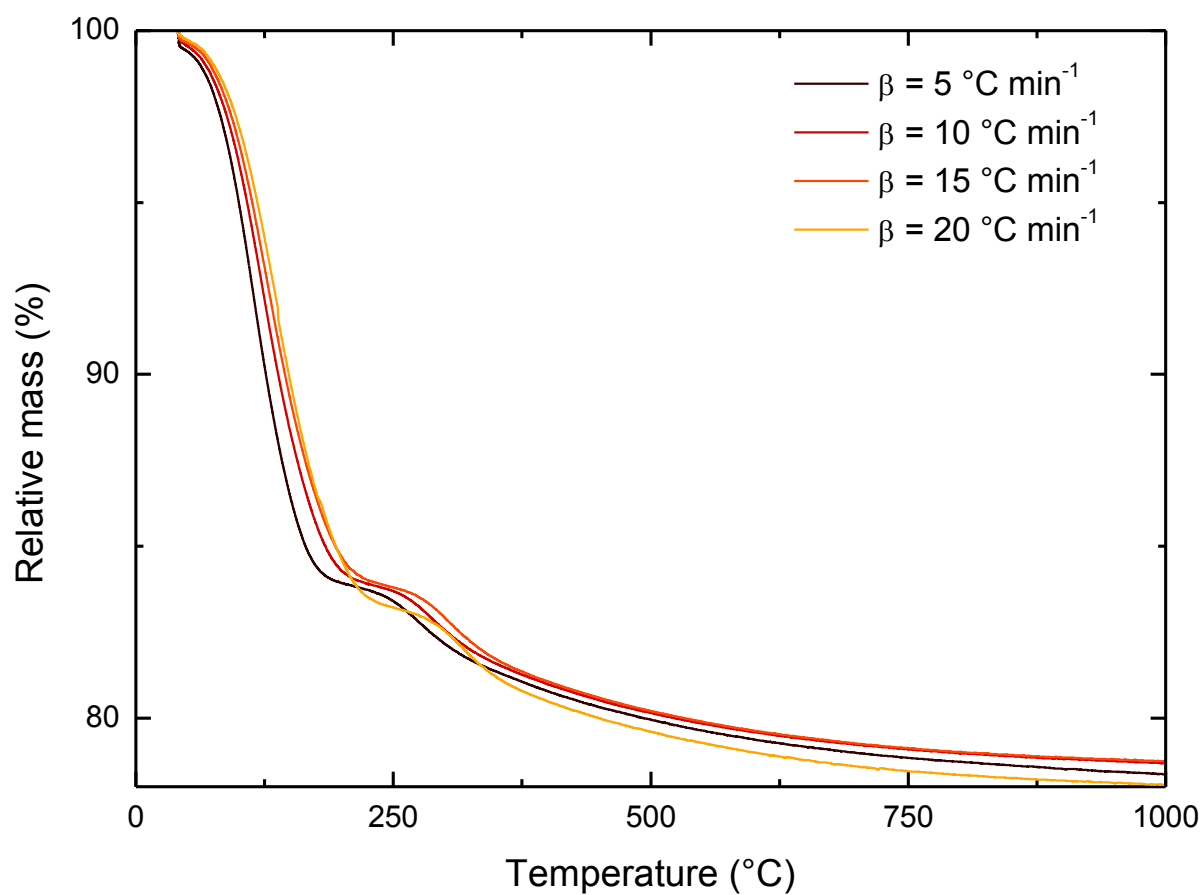


Figure S7: TGA-graphs for the thermal treatment of silica under air at heating rates β of 5, 10, 15, and 20 °C min⁻¹.

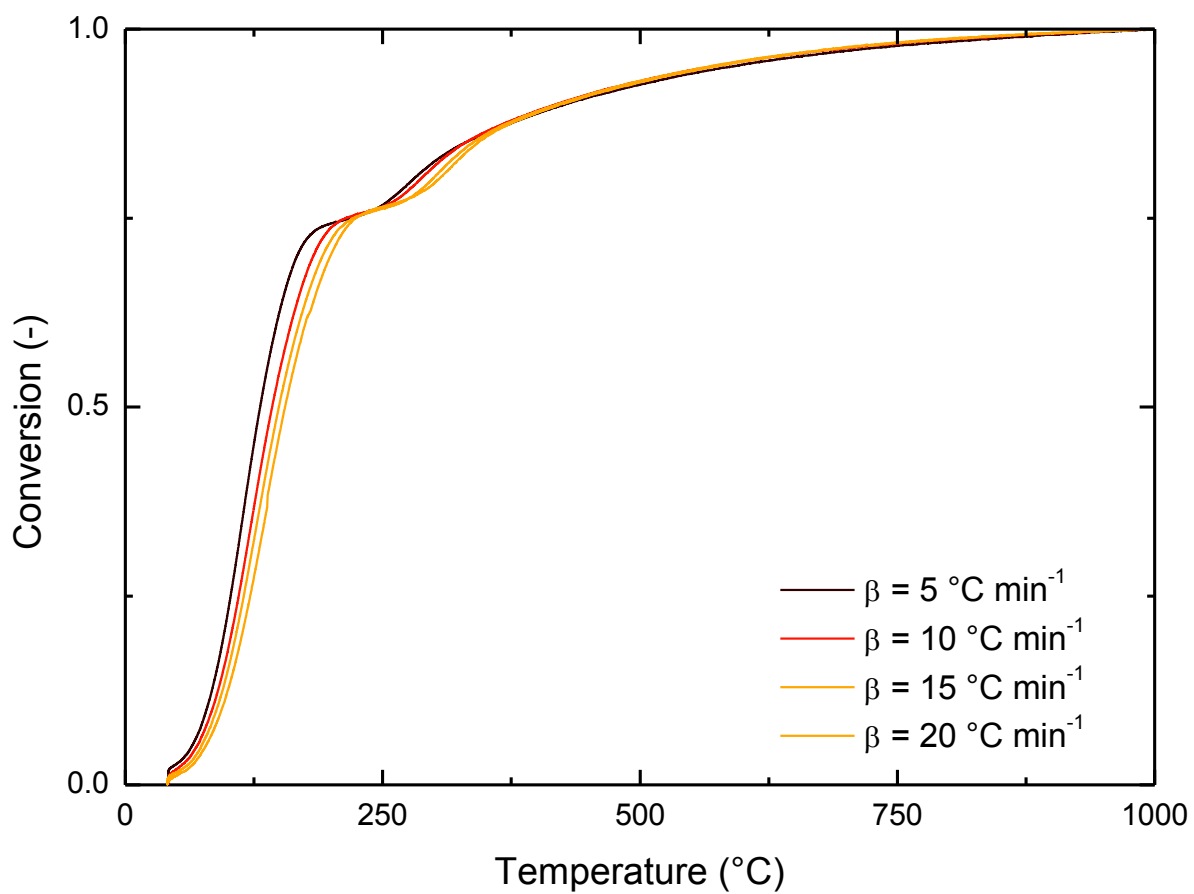


Figure S8: Conversion of the mass loss of silica under air at heating rates β of 5, 10, 15, and 20 $^\circ\text{C min}^{-1}$.

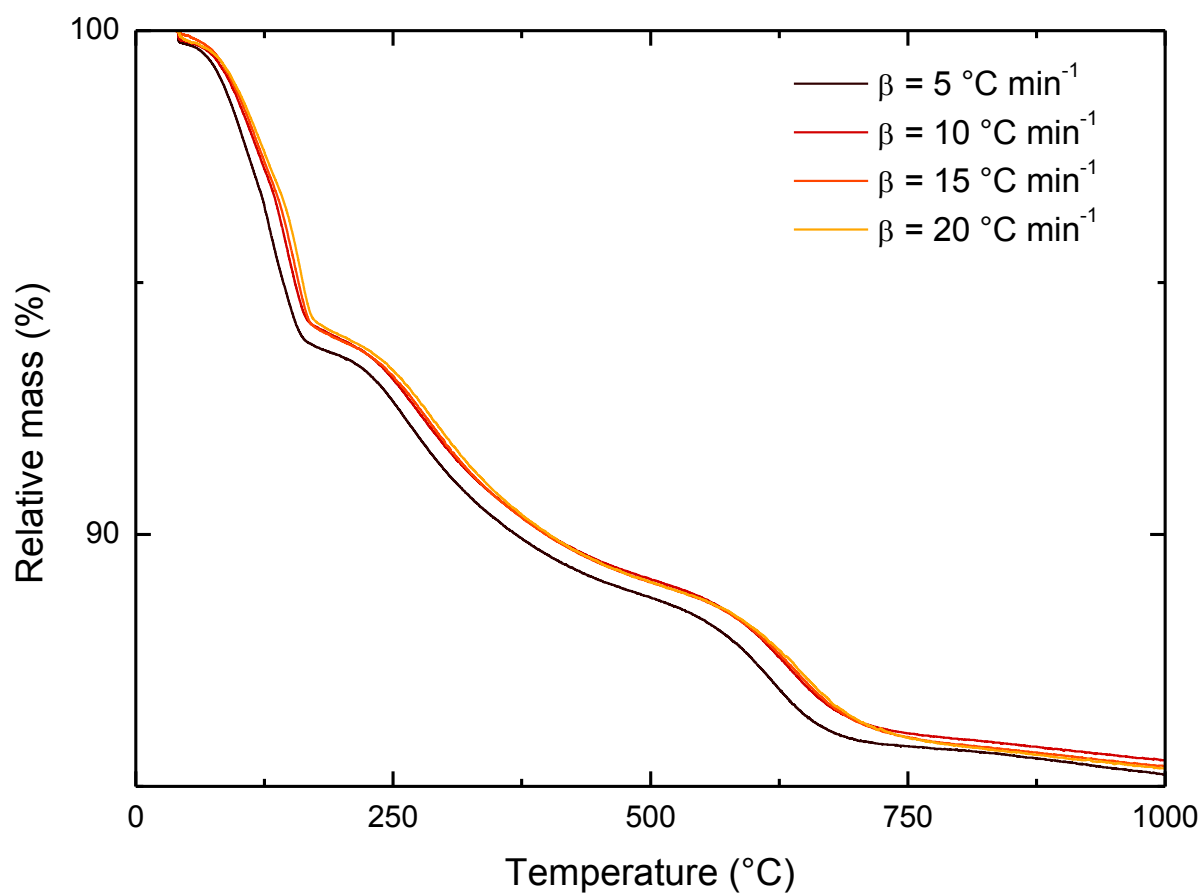


Figure S9: TGA-graphs for the thermal treatment of organosilica under N₂ at heating rates β of 5, 10, 15, and 20 °C min⁻¹.

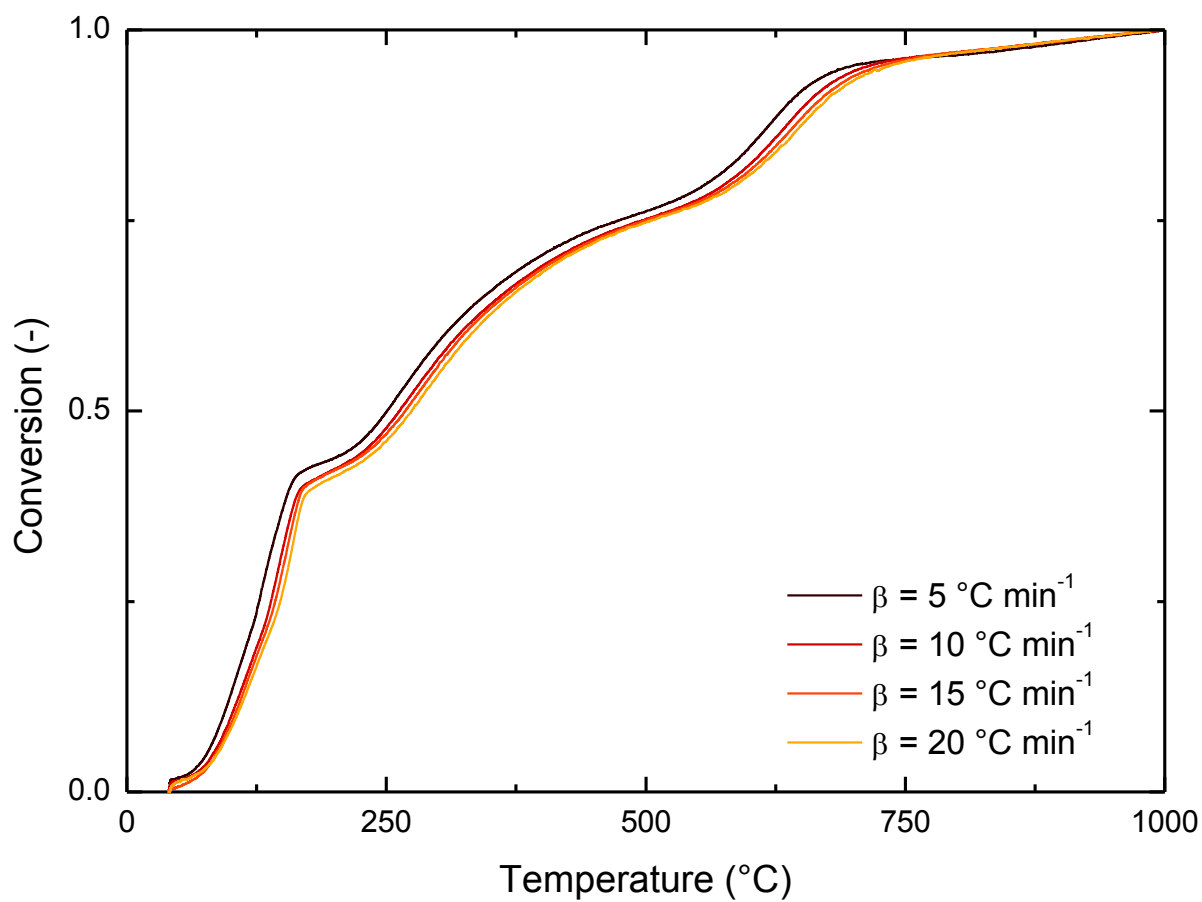


Figure S10: Conversion of the mass loss of organosilica under N₂ at heating rates β of 5, 10, 15, and 20 °C min⁻¹.

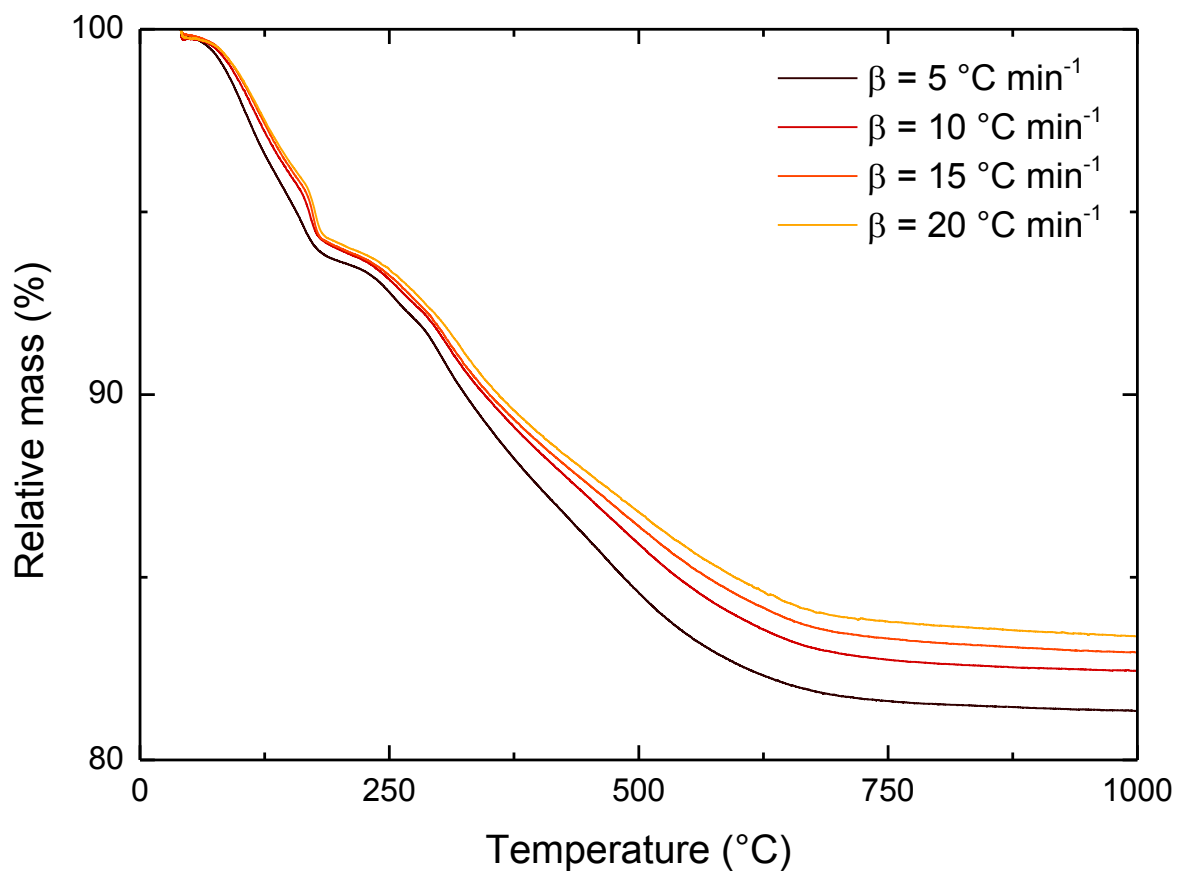


Figure S11: TGA-graphs for the thermal treatment of organosilica under air at heating rates β of 5, 10, 15, and 20 °C min⁻¹.

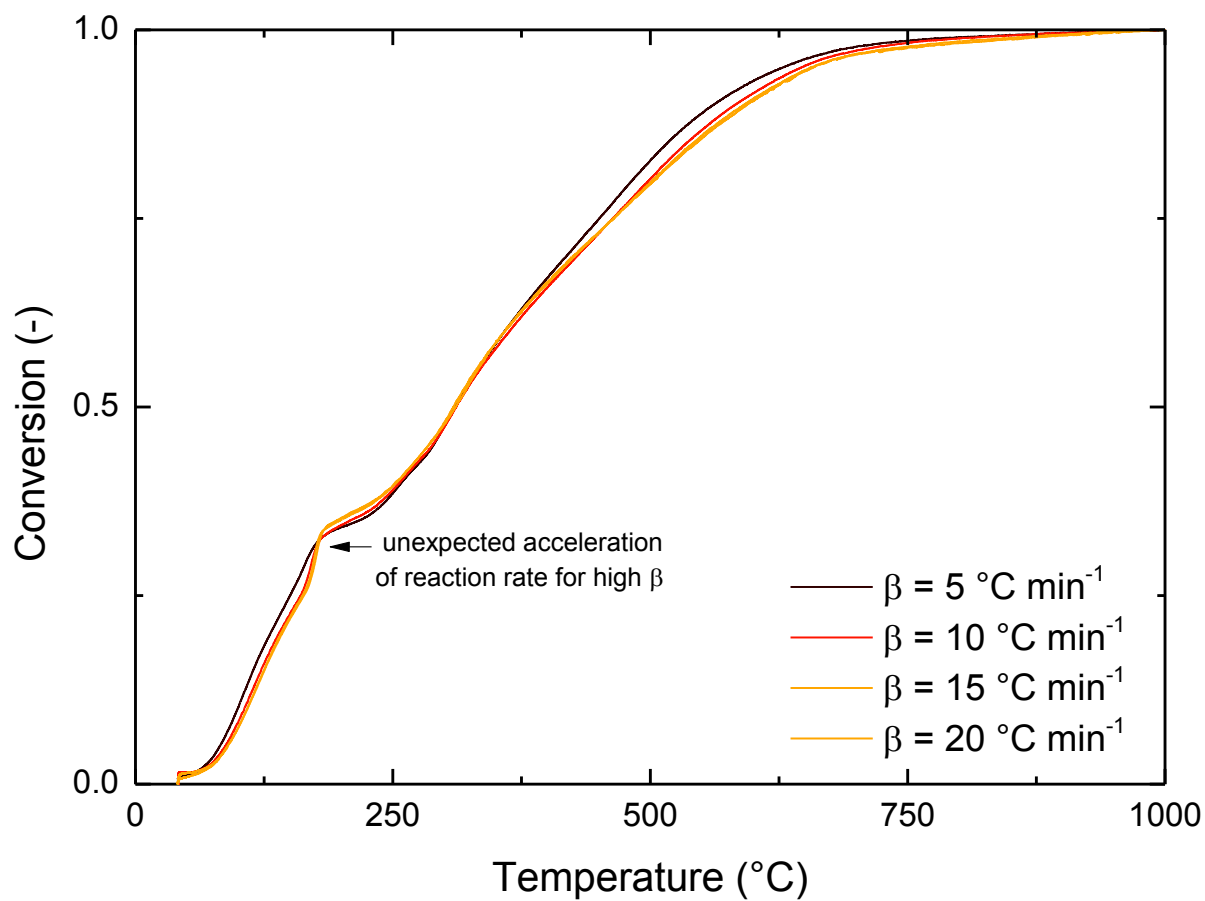


Figure S12: Conversion of the mass loss of organosilica under air at heating rates β of 5, 10, 15, and 20 °C min⁻¹.

3 Activation energy from isoconversional analysis

This figure shows the full data of figure 5b in the manuscript (see the explanation in the manuscript).

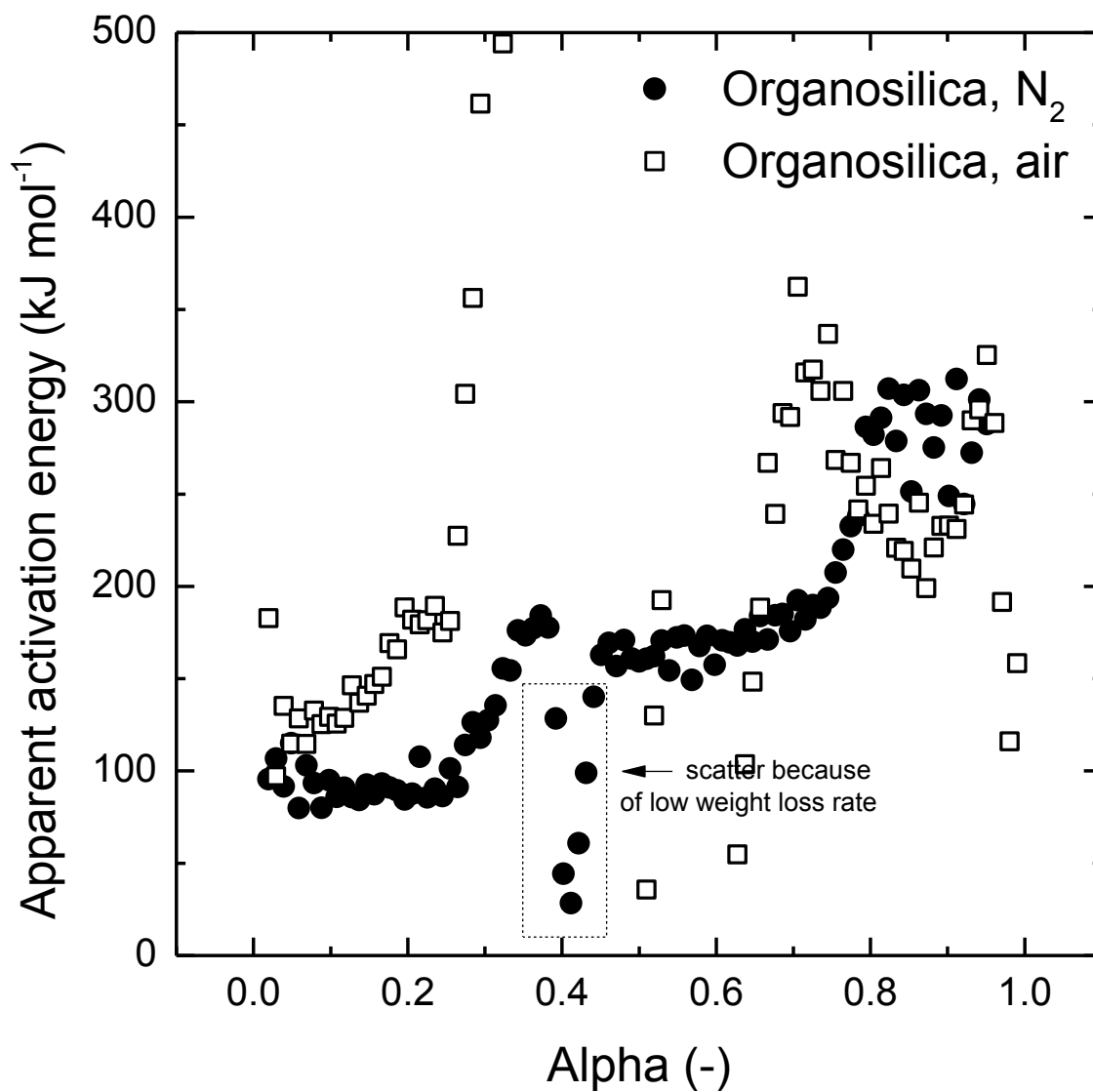


Figure S13: Apparent activation energy for calcination of silica (a) and organosilica (b) under nitrogen (\bullet) and air (\square). See Figure 5 in the paper.