

# Supplementary material

## Thermo-mechanical behavior of poly(ether ether ketone): experiments and modeling

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## **S-1 Accuracy of fitting observations**

To assess the ability of the model to describe observations on PEEK specimens, experimental data in selected tensile tests, relaxation tests and creep tests (at temperatures  $T = 20$  and  $170$  °C) are presented with error bars (indicating standard deviations of measurements on different specimens) together with results of numerical analysis. Figs. S-1 to S-4 demonstrate good agreement between the data and results of simulation, which implies that the model predicts adequately observations of PEEK specimens.

## S-2 Supplementary figures

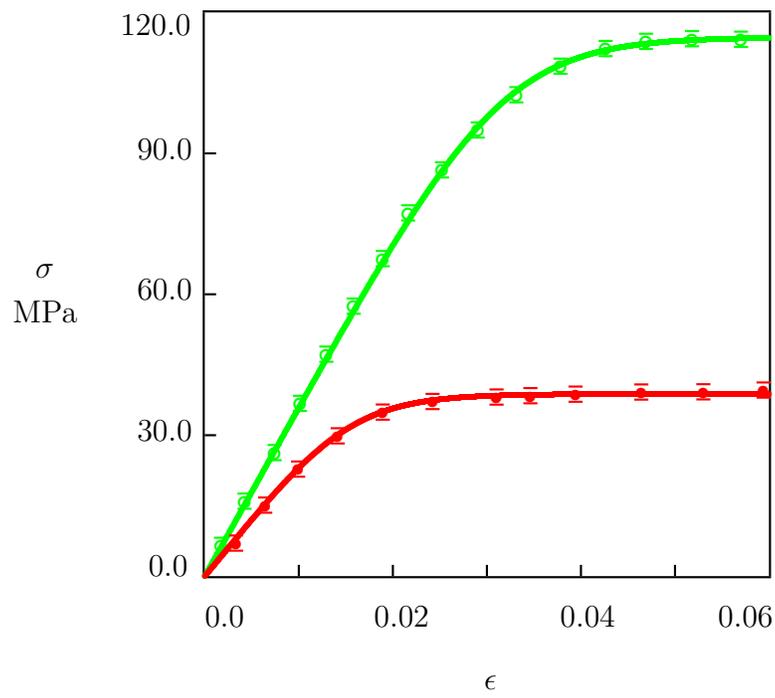


Figure S1: Stress  $\sigma$  versus strain  $\epsilon$ . Symbols: experimental data in tensile tests at temperatures  $T = 20$  ( $\circ$ ) and  $170$  ( $\bullet$ ) °C. Bars stand for the standard deviations. Solid lines: results of simulation.

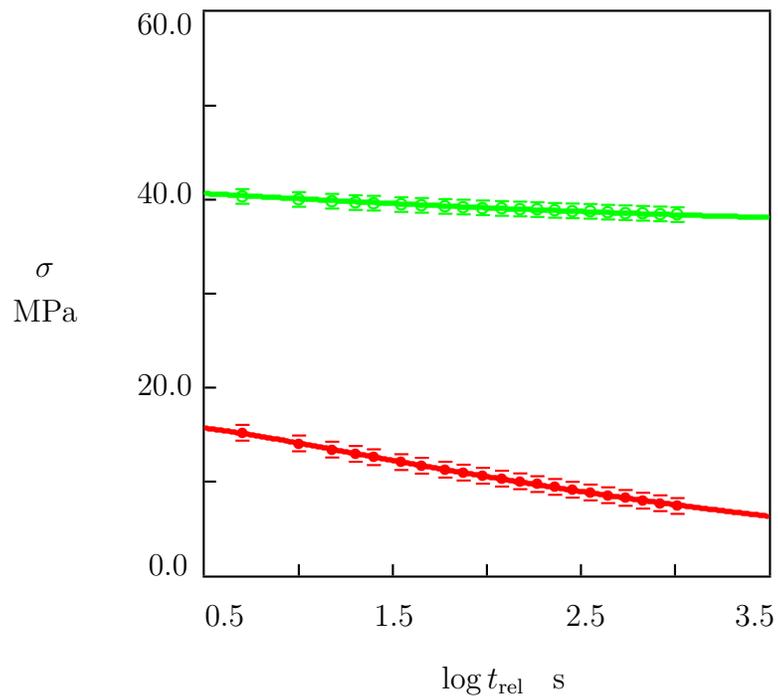


Figure S2: Stress  $\sigma$  versus relaxation time  $t_{\text{rel}}$ . Symbols: experimental data in tensile relaxation tests with strain  $\epsilon_0 = 0.01$  at temperatures  $T = 20$  ( $\circ$ ) and  $170$  ( $\bullet$ )  $^{\circ}\text{C}$ . Bars stand for the standard deviations. Solid lines: results of simulation.

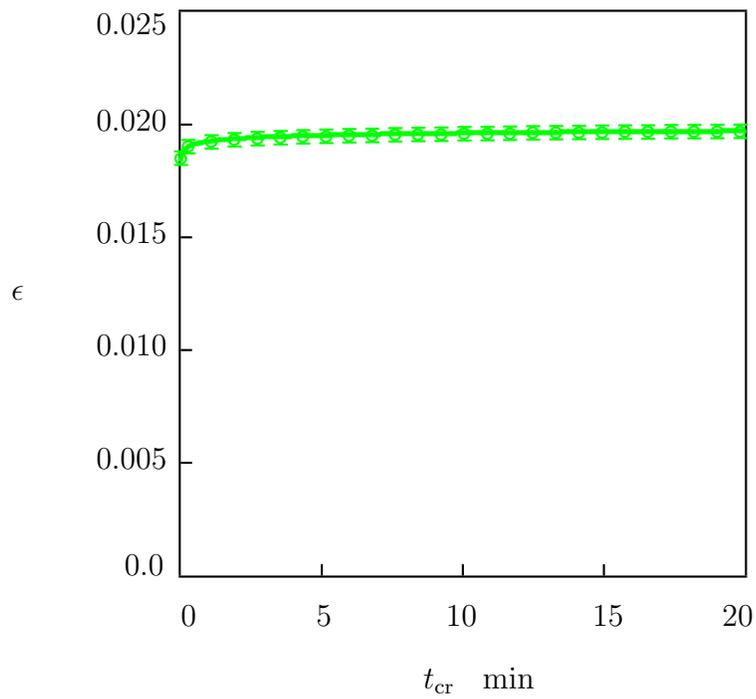


Figure S3: Strain  $\epsilon$  versus creep time  $t_{cr}$ . Circles: experimental data in creep test with stress  $\sigma_0 = 70.0$  MPa at temperature  $T = 20$  °C. Bars stand for the standard deviations. Solid line: results of simulation.

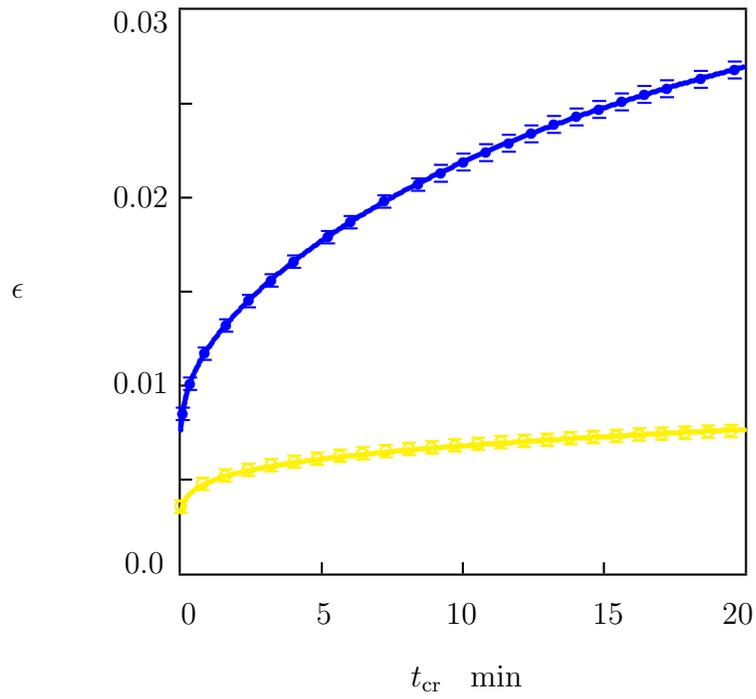


Figure S4: Strain  $\epsilon$  versus creep time  $t_{cr}$ . Symbols: experimental data in creep tests with stresses  $\sigma_0 = 10$  ( $\circ$ ) and  $20$  ( $\bullet$ ) MPa at temperature  $T = 170$  °C. Bars stand for the standard deviations. Solid lines: results of simulation.