

Influence of carbon dioxide on the glass transition of styrenic and vinyl pyridine polymers: Comparison of calorimetric, creep and rheological experiments

Supplementary Materials

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1 ISOTHERMAL DSC MEASUREMENTS AT HIGH PRESSURE

No artificial drift of heat flow appears in the second isothermal interval of our experiments which is the relevant interval of heat flow measurement. In Figure S1, first an isothermal test with no crucible at ambient pressure and air followed by a second isothermal interval at 10 bar CO₂ loading is presented:

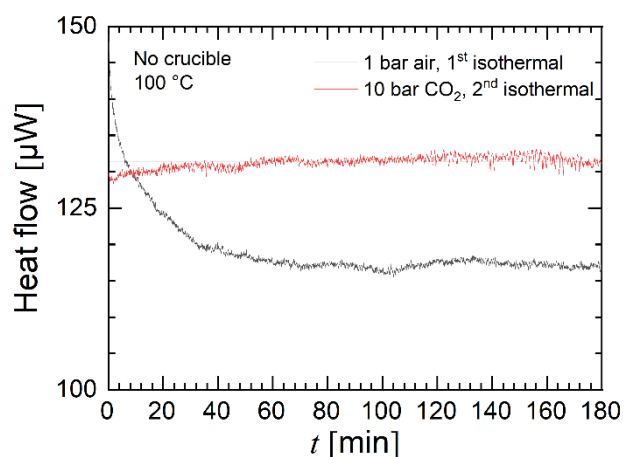


Figure S1. Results of isothermal DSC measurements at 100 °C with no crucible. The first interval was performed at ambient pressure and air atmosphere. The second interval was performed with CO₂ loading at a pressure of 10 bar.

In the first isothermal interval (air, ambient pressure) the heat flow is not constant because of very small temperature variations. In the second isothermal interval after full temperature equilibration, the heat flow is almost constant. Consequently, for an isothermal test with polystyrene in the second isothermal interval, the decay of heat flow corresponds to the sorption of CO₂ as shown in Figure S2:

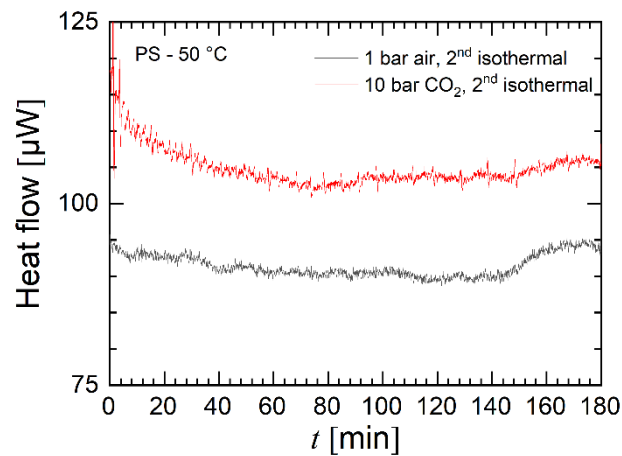


Figure S2. Results of isothermal DSC measurements at 50 °C with a polystyrene sample (second isothermal interval for each test). The first test was performed at ambient pressure and air atmosphere. The second test was performed with CO₂ loading at a pressure of 10 bar.