Supporting information for:
Star-Like Branched Polyacrylamides by RAFT polymerization - Part II: Performance Evaluation in Enhanced Oil Recovery (EOR).

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• Figure S1a and S1b: Measurements were carried out to compare the highest molecular weight SB-PAMs with linear PAMs at equal concentration (2 wt%). The results for SB-PAMs (entry 15, 17 and 18) show that higher frequencies are required in order to dominate the viscoelastic behaviour for the SB-polymers. In contrast entry 20 (high \(M_w\) linear PAM) shows that both (G’ and G”) storage and loss moduli increase with increasing oscillation frequency (figure S1a). Hence, the phase angle of entry 20 displays higher elasticity compared with the SB-PAMs (figure S1b). Moreover, entry 19 (linear PAM with a \(M_w\) comparable to the SB-PAMs) display only slightly more pronounced elastic behaviour compared with the SB-PAMs.
Figure S1: a) $G'$ and $G''$ of the highest molecular weight SB-PAMs in comparison with linear PAM. b) Their respective phase angles

- Figure S2: Phase angles for the different SB-PAMs and two linear PAMs at equal $\eta_0$ as a function of frequency are displayed in figure S2. The viscoelasticity observations in figure 8, show that specifically entry 20 (linear PAM) and SB-PAMs (entry 15, 17 and 18) are highly elastic, which is supported by the phase angle measurements seen in figure S2.

Figure S2: Phase angles (at equal $\eta_0$) as function of frequency for the polymer solutions used in the flow-cell experiments.