Supporting Information

Glassy and compressed nanoemulsions stabilized with sodium dodecyl sulfate in the presence of poly(ethylene glycol)-diacrylate

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Estimation of dielectric constant of continuous phase (ε_r)

The ε_r is calculated by using mixing rule. Using mixing rule gives different values for each nanoemulsion depending on SDS solution and PEGDA percentage in the continuous phase. The dielectric constant of PEGDA is considered to be 14.5 for PEG backbone[34] and for SDS solutions, the quadratic fitting function at concentration above CMC reported by Pérez-Rodríguez et al.[35] is used. Table S1 shows the calculated ε_r for concentrated nanoemulsions. Theε_r values are approximately the same for the nanoemulions at both volume fractions of 50% and 60%.

Table S1. The calculated ε_r values for concentrated nanoemulsions.

Final PEGDA (wt%)	φ=50%-60%
0	66.75
3	65.19
6	63.62
9.5	61.79
13	59.96
20	56.31
28	52.12

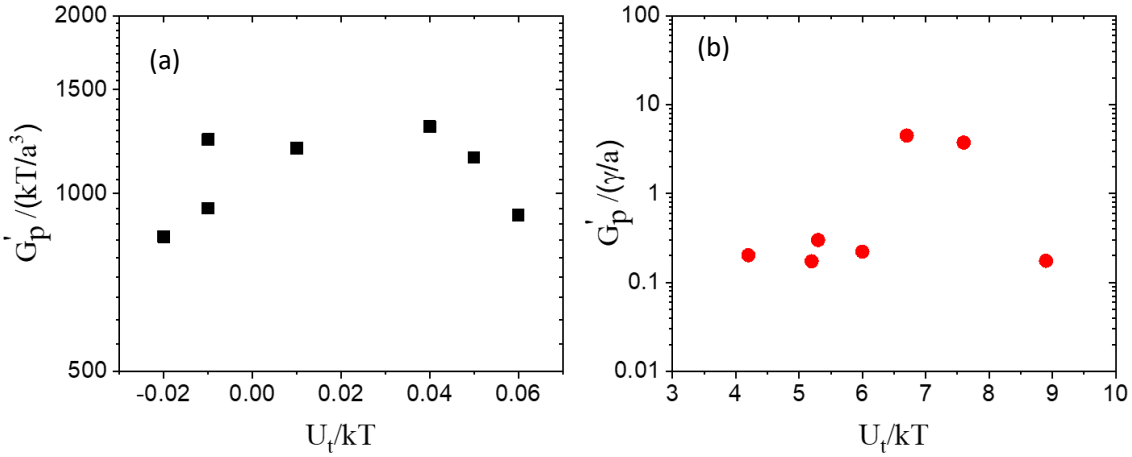

Figure S1. The scaled plateau storage modulus of (a) glassy nanoemulsions and (b) compressed nanoemulsions vs the overall interaction potential calculated at average of interdroplet distance.

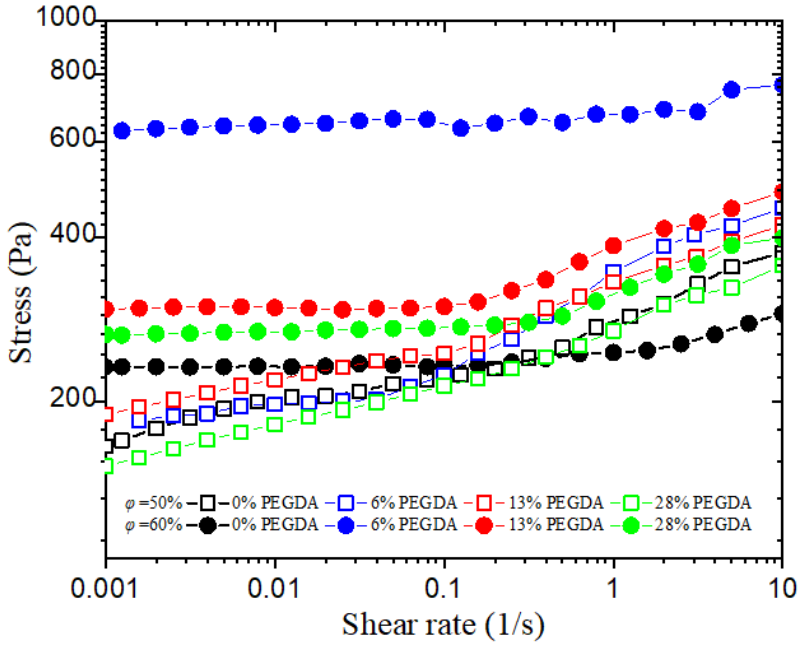

Figure S2. Flow curves of glassy (φ=50%, squares) and compressed (φ=60%, circles) nanoemulsions at different final PEGDA concentrations. The lines are used as a guide to the eye.