Supporting Material (ESI) for

"Equilibrium and nonequilibrium dynamics of soft sphere fluids"

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TABLE I. The state points (density ρ and temperatures T) employed in simulations for different particle softness, n, and values of the coupling paramter at the freezing point, Γ_f, from Refs. 15 and 16 in the main text.

n	Density range	Temperature	Γ_f
36	0.01-1.00	1.0	0.942
24	0.01-1.00	1.0	0.970
12	0.01-1.20	1.0	1.167
10	0.01-1.40	1.0	1.300
8	0.01-1.70	1.0	1.579
6	0.01-2.50	1.0	2.331
4	0.01-5.80	1.0	5.685

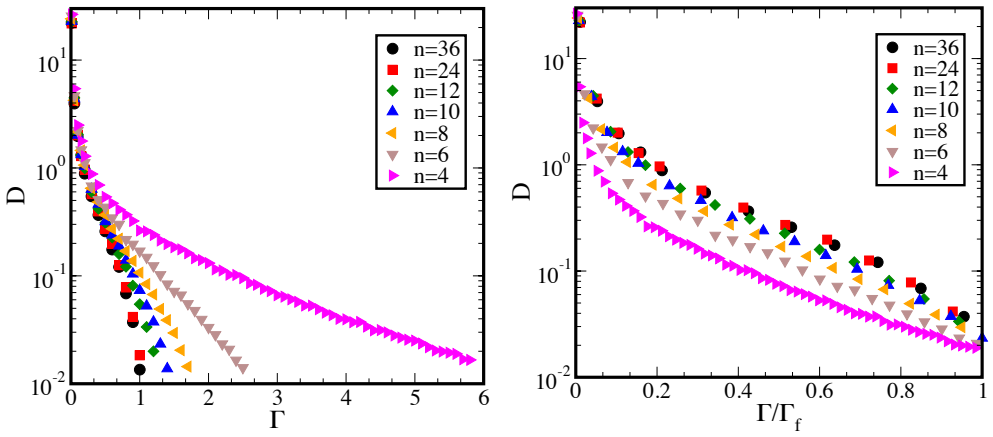

Figure S 1. Diffusion coefficient D versus the coupling parameter Γ (left panel) and the reduced coupling parameter Γ/Γ_f (right panel) for different particle softness, n, as indicated in the legend.

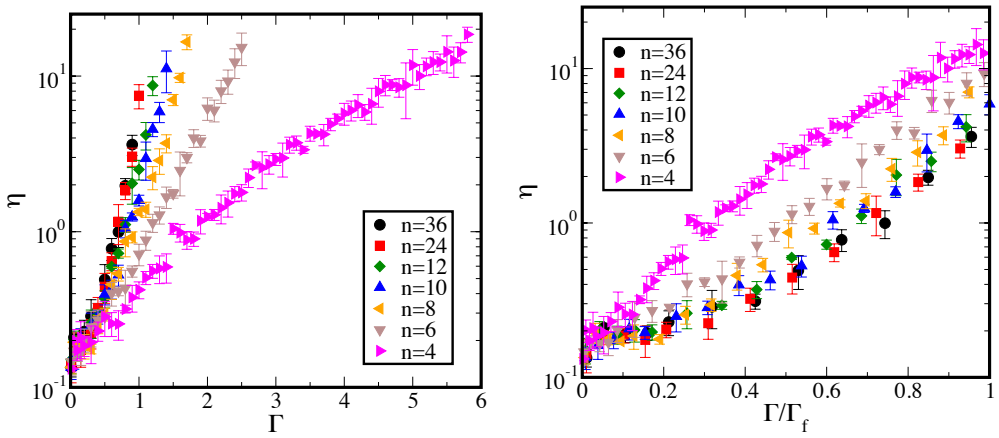

Figure S 2. Viscosity η versus the coupling parameter Γ (left panel) and the reduced coupling parameter Γ/Γ_f (right panel) for different particle softness, n, as indicated in the legend

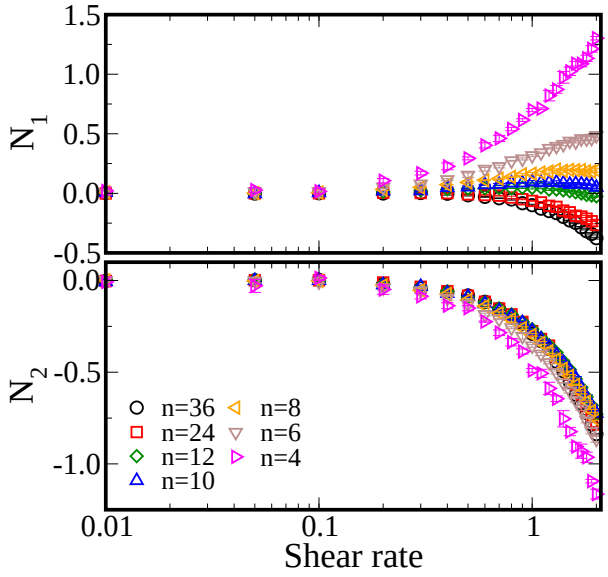

Figure S 3. First normal stress difference, N_1, and second normal stress difference, N_2 as function of shear rate for different particle softness, n, as indicated in the legend