Electronic Supplementary Material (ESI) for Soft Matter.

Supporting information for

Solvent Effects on Modulus of Poly(propylene oxide) Based Organogels as Measured by Cavitation Rheology

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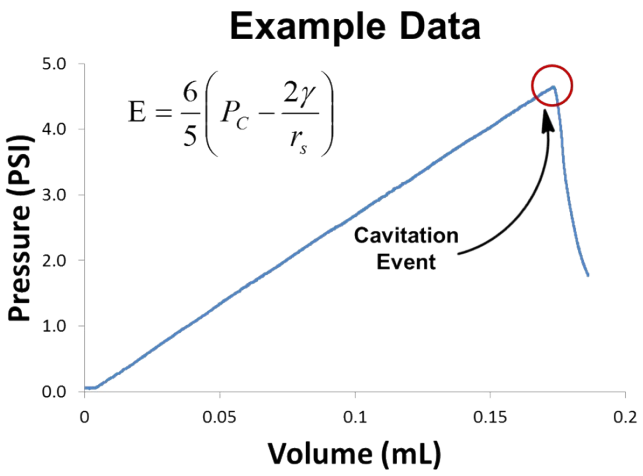

Figure S1. Example data for typical cavitation experiment. Critical pressure, P_c, is given as the maximum in the pressure vs. volume curve.

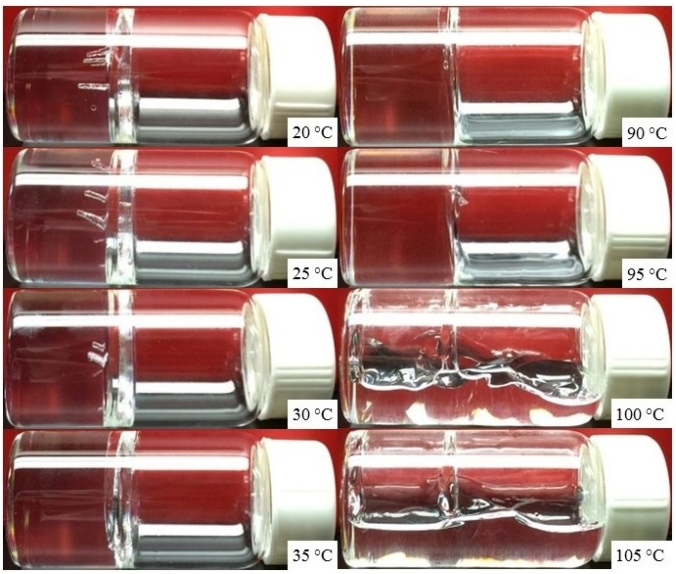

Figure S2. Determination of the sol/gel transition temperature for PPO-2000 organogels in toluene. At 100 °C the gel was incapable of withstanding gravitational stress and failed; at 105 °C the gelator was soluble and the system was a low viscosity fluid. After cooling to room temperature the gel was reformed. Note the punctures in the gel at 20 °C left behind from cavitation testing. Upon heating these punctures begin to heal, with full healing realized at 35 °C.

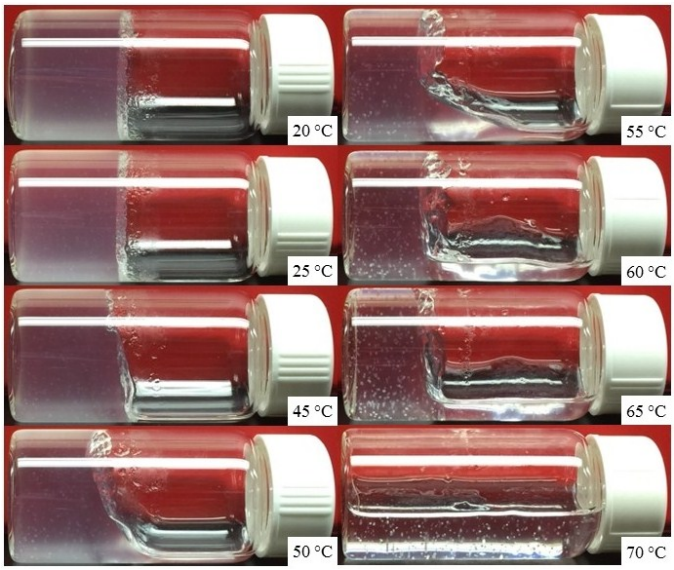

Figure S3. Determination of the sol/gel transition temperature for PPO-2000 organogels in ethyl acetate. Weakening of the gel occurs near 45 °C with a transition to a sol occurring until full disruption of the gel network at 70 °C. Note the increasing clarity of the gel with increasing temperature.

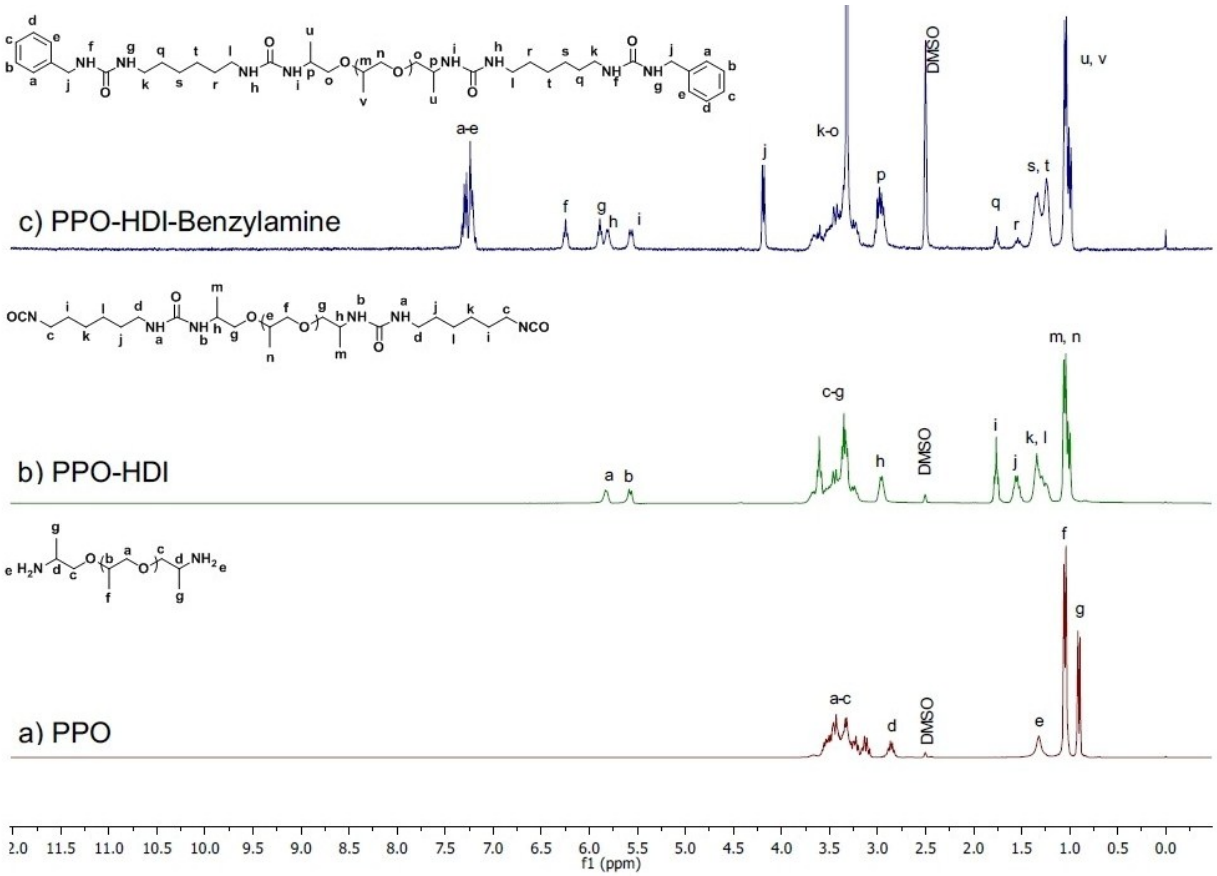

Figure S4. ^{1}H NMR spectra of a) unmodified PPO-400 [amine terminated poly(propylene oxide) (Jeffamine D-400)], b) PPO-400 modified with hexamethylene diisocyanate, c) PPO-400 modified with hexamethylene diiscyanate and subsequent reaction with benzylamine. Spectra collected in d_6DMSO.

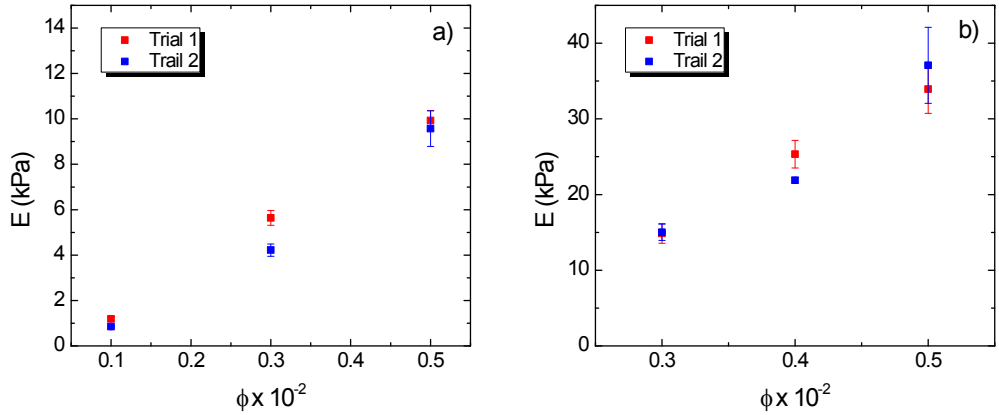

Figure S5. Representative examples of data reproducibility: a) PPO-2000 gels in toluene, octylamine end cap; b) PPO-2000 gels in carbon tetrachloride, butylamine end cap.

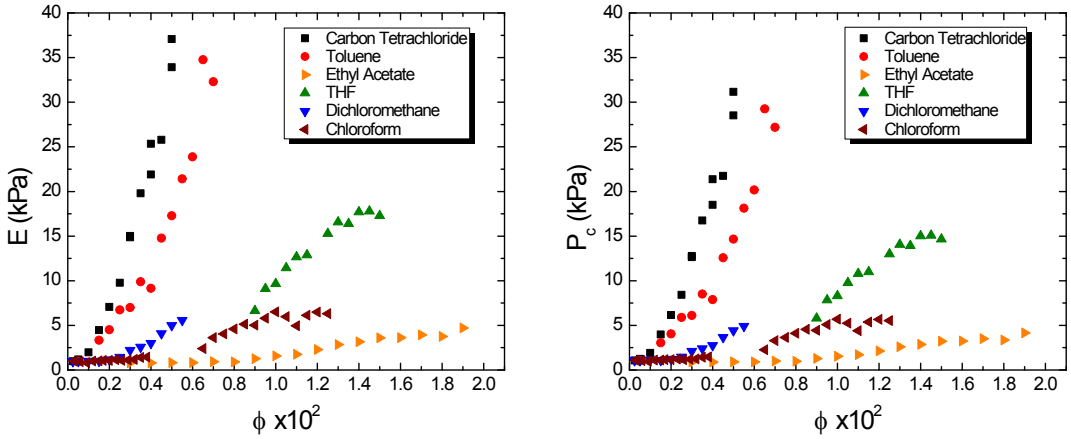

Figure S6. Moduli versus mass fraction (left) and critical pressure versus mass fraction (right) for PPO-2000 gels.

Table S1. Sol-gel transition temperatures for all gels.

Solvent	Sol-Gel Transition tempertatue (°C)		
	PPO-400	PPO-2000	PPO-4000
THF	>65	60	41
Carbon Tetrachloride		65	71
Dichloromethane	>41	40	>41
Toluene	>110	100	>110
Ethyl Acetate		70	>77
Chloroform	>61	55	>61

Table S2. Qualitative description of gels formed in this study. 'Clear' denotes gels that were perfectly transparent. 'Hazy' denotes gels that were very slightly cloudy to the eye and began to display characteristics of forming phase separated gels. 'Phase' denotes gels that were fully phase separated and formed fully cloudy and poorly solvated gels.

Solvent	Phase Behavior		
	PPO-400	PPO-2000	PPO-4000
THF	Phase	Clear	Clear
Carbon Tetrachloride		Clear	Hazy
Dichloromethane	Phase	Clear	Clear
Toluene	Phase	Clear	Clear
Ethyl Acetate		Hazy	Hazy
Chloroform	Phase	Clear	Clear