Electronic Supplementary Material (ESI) for Soft Matter

Advancing the Boundary of Insolubility of Non-linear PEG-Analogues in Alcohols: UCST transitions in Water–Ethanol Mixtures

– Supporting Information –

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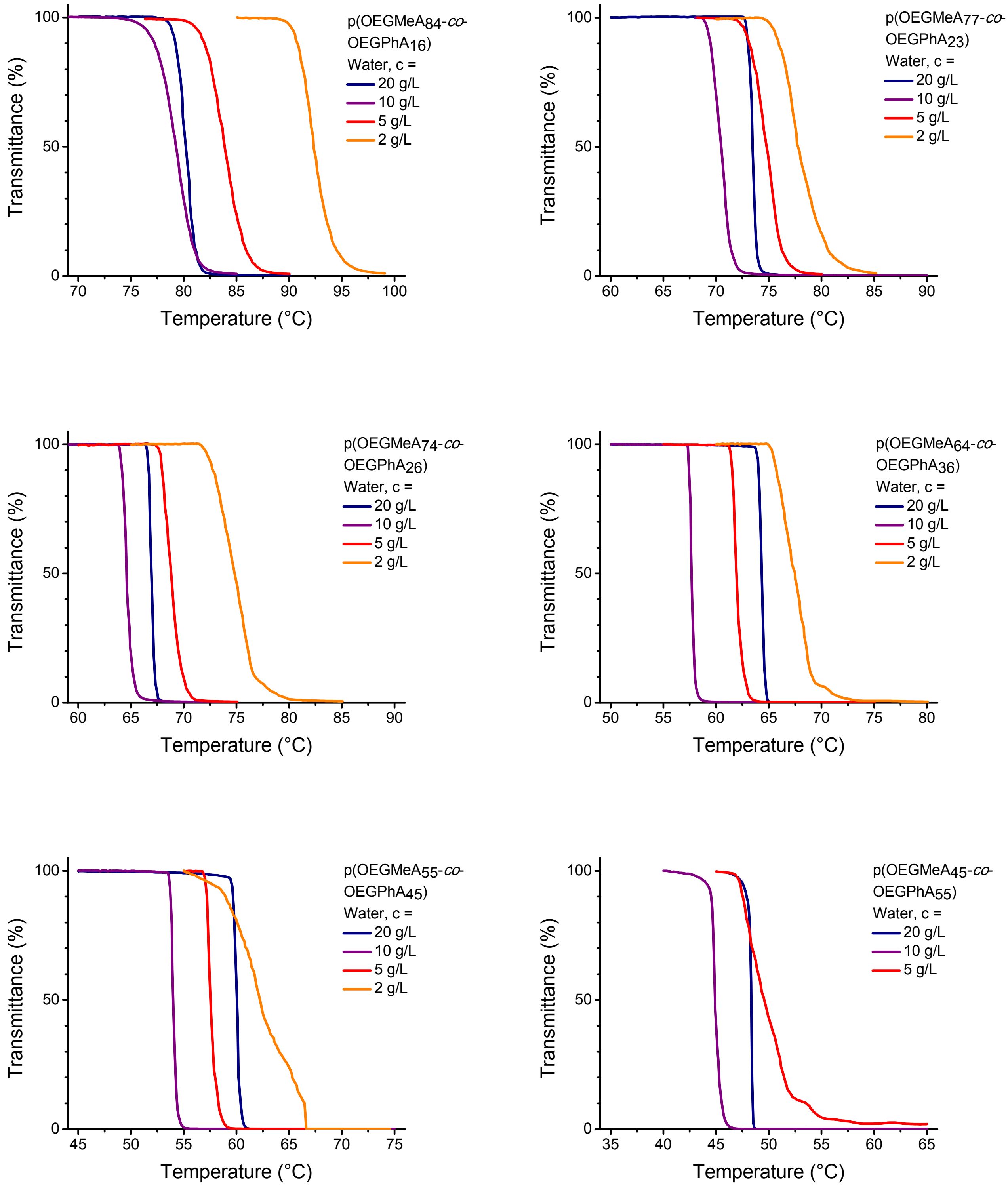
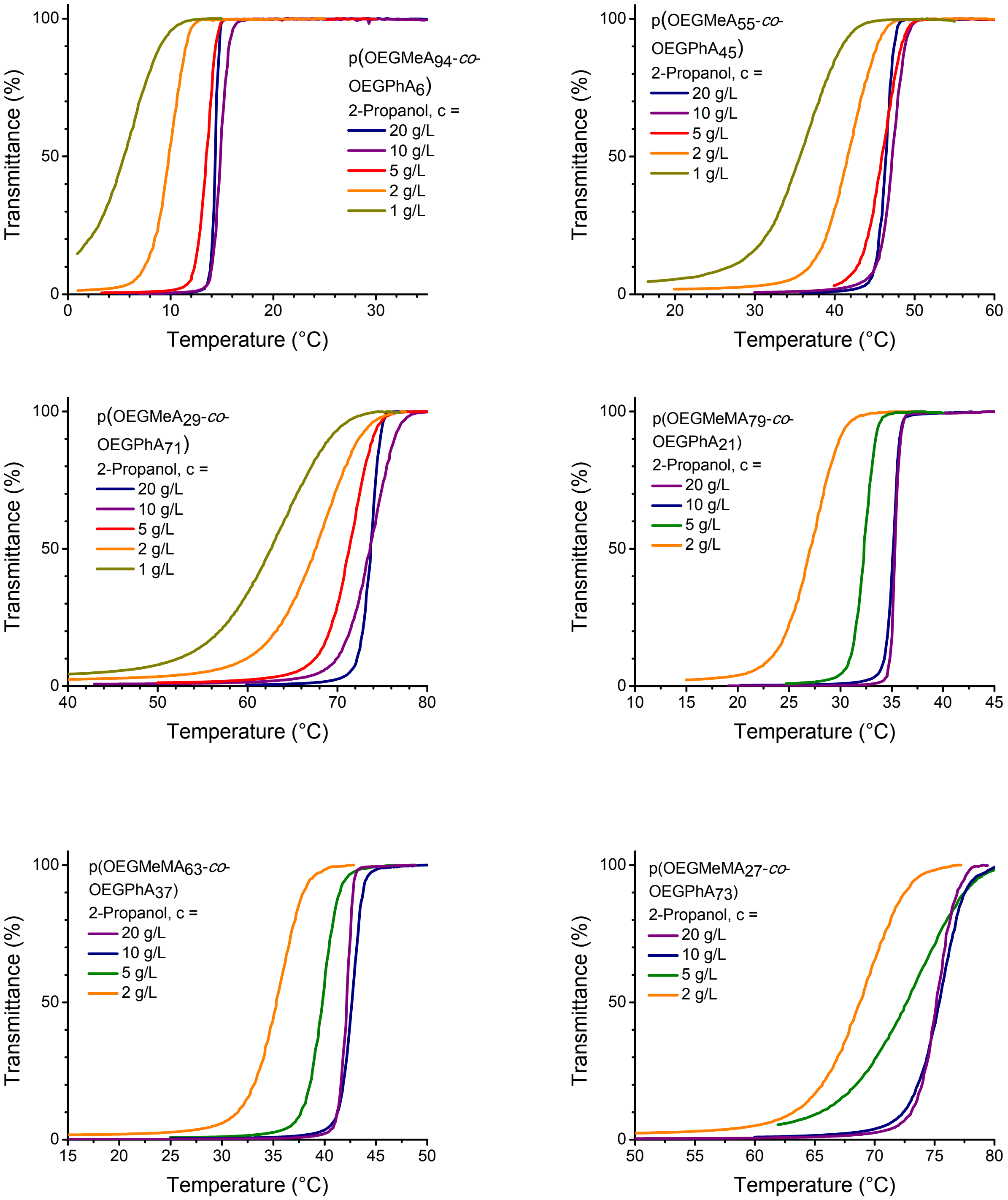
Behaviour in Water



Figures S1–S6. Transmittance measurements of copolymers in water at varying concentrations.

Behaviour in Alcohols: 2-Propanol



Figures S7–S12. Transmittance measurements of selected copolymers in 2-propanol at varying concentrations.

Other Alcohols

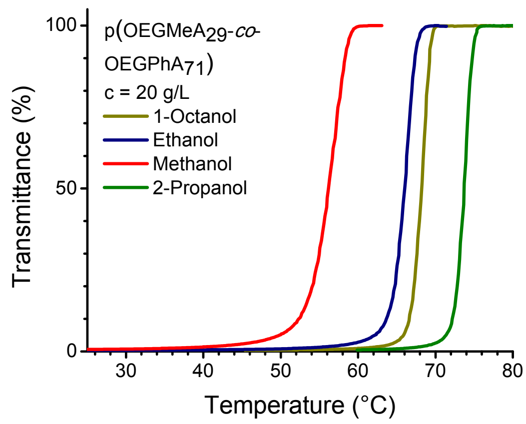


Figure S13. Transmittance curves of p(OEGMeA$_{0.29}$-*co*-OEGPhA$_{0.71}$) in various alcohols

Diblock Copolymer

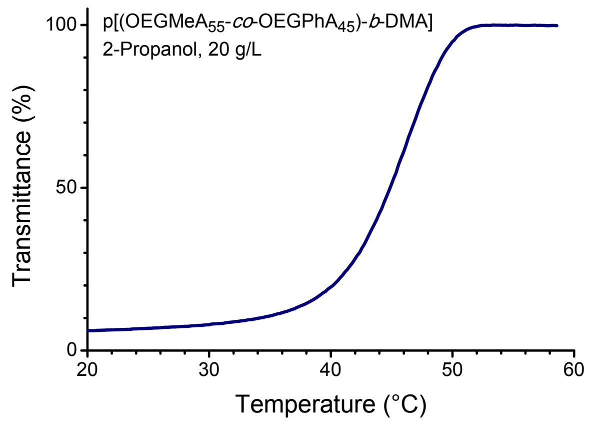


Figure S14. Transmittance of diblock copolymer p[(OEGMeA$_{0.55}$-*co*-OEGPhA$_{0.45}$)-*b*-DMA] in 2-propanol showing a cloud point of 45.2°C. The transmittance does not decrease to ~ 0 % due to the formation of aggregates caused by the soluble pDMA block.

Phase Diagram Ethanol–Water at Intermediate OEGPhA Content

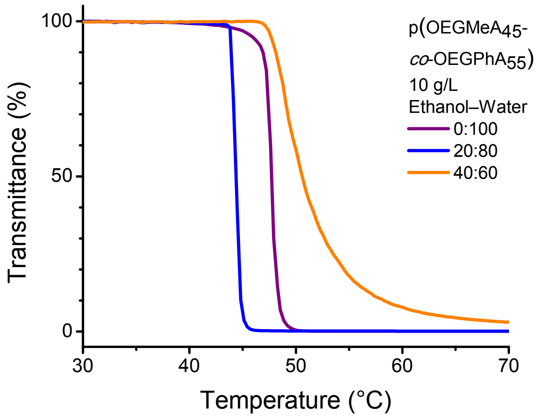


Figure S15. Transmittance for copolymer p(OEGMeA$_{45}$-co-OEGPhA$_{55}$) in ethanol–water mixtures. Whereas the transmittances for samples containing 0 and 20% of ethanol decreased to below 0.1% (absorbance > 3), the sample containing 40% of ethanol became significantly less turbid (~ 3 % transmittance; absorbance ~ 1.5)

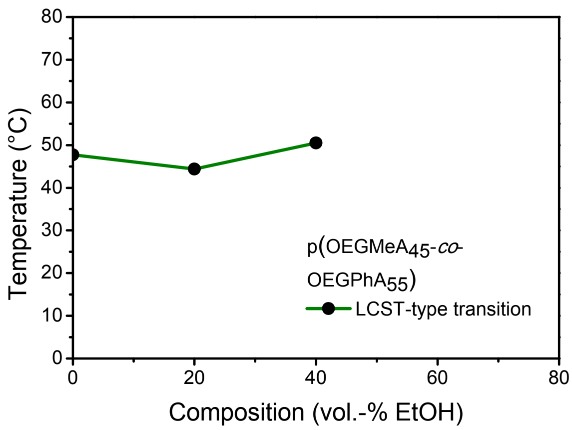
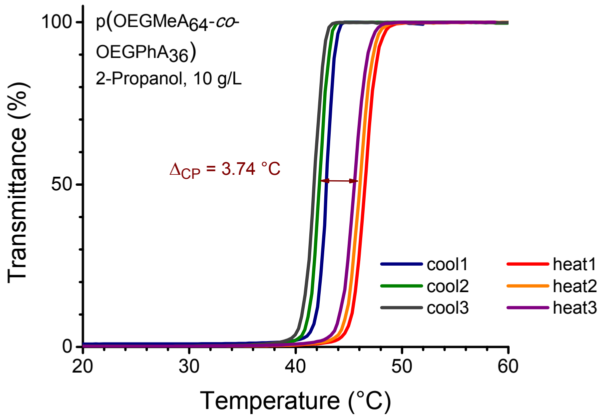
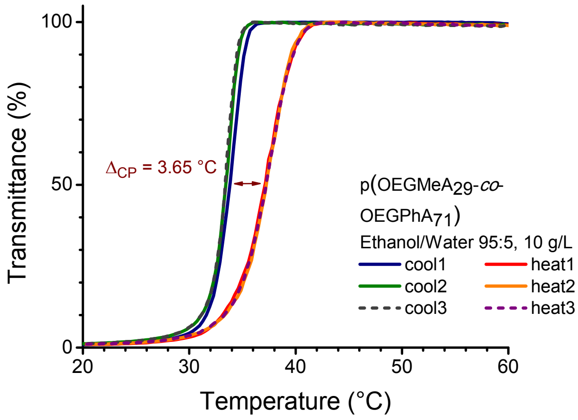
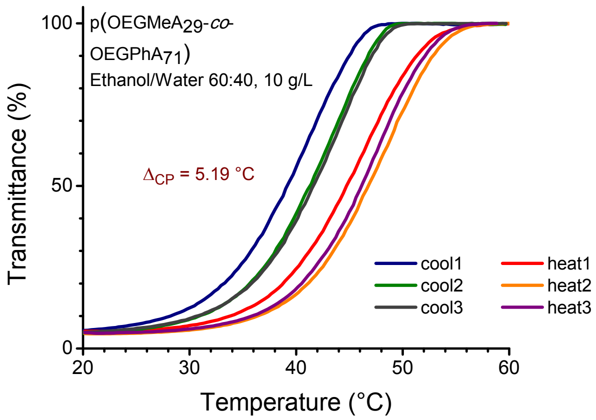


Figure S16. Section of a phase diagram of p(OEGMeA$_{45}$-co-OEGPhA$_{55}$) in ethnanol–water.

Reproducibility







Figures S17 (top), S18 (middle), and S19 (bottom). Transmittance curves for three cool / heat cycles