

**SI1:** Rheology data from mixtures of  $ChEO_{10}/MCL$  WLM with HEBCD A. Dependence of the longest relaxation time with HEBCD concentration. B. Dependence of the global  $G_0$  with HEBCD concentration. (c) Dependence of  $\eta_0$  with HEBCD concentration.



SI2 : A. Flow curves showing the viscosity  $\eta$  as a function of shear rate  $\dot{\gamma}$  for mixtures of 10 wt% ChEO<sub>10</sub> and 3 wt% MCL with varying concentrations of DIMEB: no DIMEB ( $\blacklozenge$ ), 3 wt% ( $\blacklozenge$ ), 6 wt% ( $\blacklozenge$ ) and 9 wt% ( $\circlearrowright$ ). B: Frequency sweep measurements showing the storage and loss moduli *G*' and *G*'' as a function of angular frequency  $\omega$  for mixtures of 10 wt% ChEO<sub>10</sub> and 3 wt% MCL with varying concentrations of DIMEB: 0 wt% ( $\blacklozenge$ ), 3 wt% ( $\blacklozenge$ ), 6 wt% ( $\blacklozenge$ ) and 9 wt% ( $\circlearrowright$ ); empty symbols are used for G''.



**SI3.** Small-angle neutron scattering data from mixtures of 5 wt% ChEO<sub>10</sub> with 0 ( $\bullet$ ), 5.9 (O) and 7.6 ( $\blacktriangle$ ) wt% DIMEB. The data from the highest  $\beta$ -CD amount (i.e. lowest ChEO<sub>10</sub>/DIMEB ratio) shows a sharp peak, indicating the presence of lamellar structures. The data were measured on SANS2D, ISIS (RAL, Didcot, UK).

Fitting	ChEO <sub>10</sub> micelles				WLM			
parameters	Pure	6%	3%	6%	Pure	6%	3%	6%
		DIMEB	HEBCD	HEBCD		DIMEB	HEBCD	HEBCD
Radius (Å)	37	14	31	31	29	14	32	32
Length (Å)	160	20	160	160	400	17	450	500

**SI4**. Summary of the cross-sectional radii values and contour lengths of pure  $ChEO_{10}$  micelles and  $ChEO_{10}/MCL$  wormlike micelles in the absence and presence of 6% DIMEB, 3% HEBCD and 6% HEBCD (diluted 10 times) obtained from fits to the SANS data, using the elliptical rod and disc models (6% DIMEB).



**SI 5**. Fluorescence intensity of pyrene  $(5.99 \times 10^{-6} \text{M})$  in the presence of increasing amounts of ChEO<sub>10</sub> in H<sub>2</sub>O: A. in the absence of cyclodextrins, and at constant  $(1.0\% \text{w/v} \approx 7 \times 10^{-3} \text{M})$  concentration of: B. HPBCD, C. HEBCD and D. DIMEB.



**SI 6**. Fluorescence intensity of pyrene  $(5.99 \times 10^{-6} \text{M})$  in the presence of increasing amounts of MCL in H<sub>2</sub>O: A. in the absence of cyclodextrins, and at constant  $(1.0\% \text{w/v} \approx 7 \times 10^{-3} \text{M})$  concentration of: B. HPBCD, C. HEBCD and D. DIMEB.