

Supplementary Materials: Block Copolymer Membranes from Polystyrene-*b*-poly(solketal methacrylate) (PS-*b*-PSMA) and Amphiphilic Polystyrene-*b*-poly(glyceryl methacrylate) (PS-*b*-PGMA)

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Due to difference in solubility behaviour of polystyrene-*b*-poly(solketal methacrylate) (PS-*b*-PSMA) and polystyrene-*b*-poly(glyceryl methacrylate) (PS-*b*-PGMA), the hydroxyl groups of the polymers PS-*b*-PGMA were protected with *tert*-butyldimethylsilyl chloride in the presence of DMF and imidazole at room temperature. Following is the detailed characterization with GPC and ¹H-NMR.

Reaction Scheme:

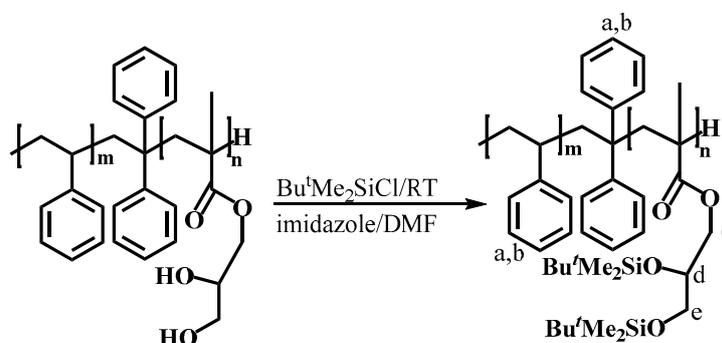


Figure S1. Route of synthesis of PS-*b*-(Bu^tMe₂Si-PGMA).

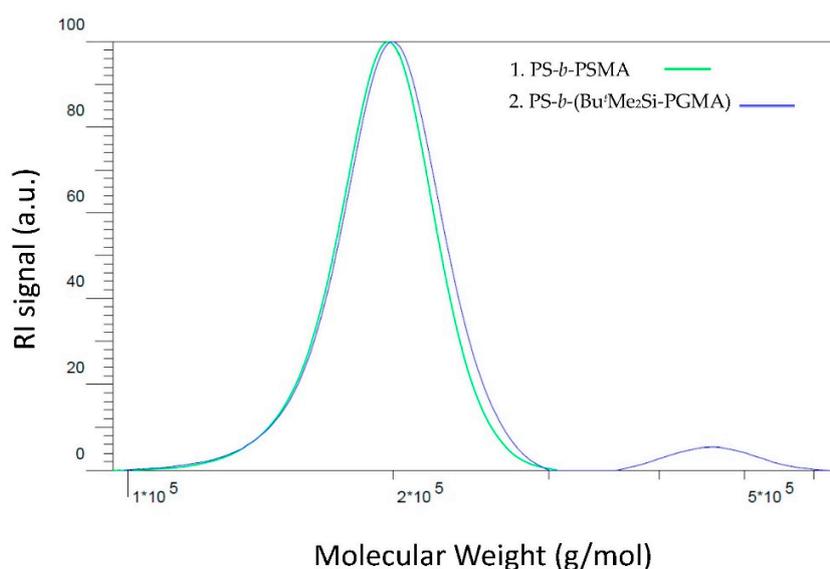
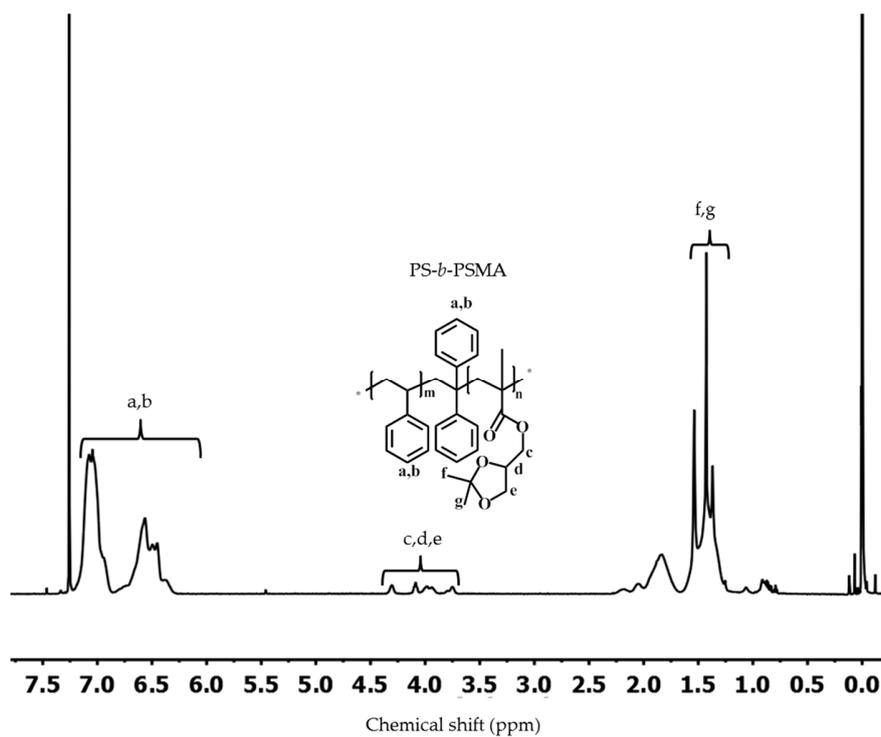


Figure S2. GPC traces (measurement in THF at 30°C using PS standards): (1) PS-*b*-PSMA; (2) PS-*b*-(Bu^tMe₂Si-PGMA).

Table S1. Characterization of PS-*b*-PSMA and PS-*b*-(Bu^tMe₂Si-PGMA) diblock copolymers.

Polymers *	Mn (kg/mol) **	Mn (kg/mol) ***	PDI
PS ₈₃ - <i>b</i> -PSMA ₁₇	176	191	1.02
**** PS ₈₇ - <i>b</i> -PGMA ₁₃	167	-	-
PS ₈₄ - <i>b</i> -(Bu ^t Me ₂ Si-PGMA) ₁₆	174	199	1.05

* lower case numbers indicate weight fraction (%) of the blocks; **molecular weights from ¹H-NMR based on PS-precursor molecular weight from GPC; ***apparent GPC molecular weights; **** Insoluble polymer in THF, for this reason molecular weight is calculated by PS precursor (measurement in THF at 30°C) in combination with weight percentages derived from ¹H-NMR in DMF *d*₇, assuming 100% conversion.

**Figure 3.** ¹H-NMR spectra of PS-*b*-PSMA in CDCl₃.

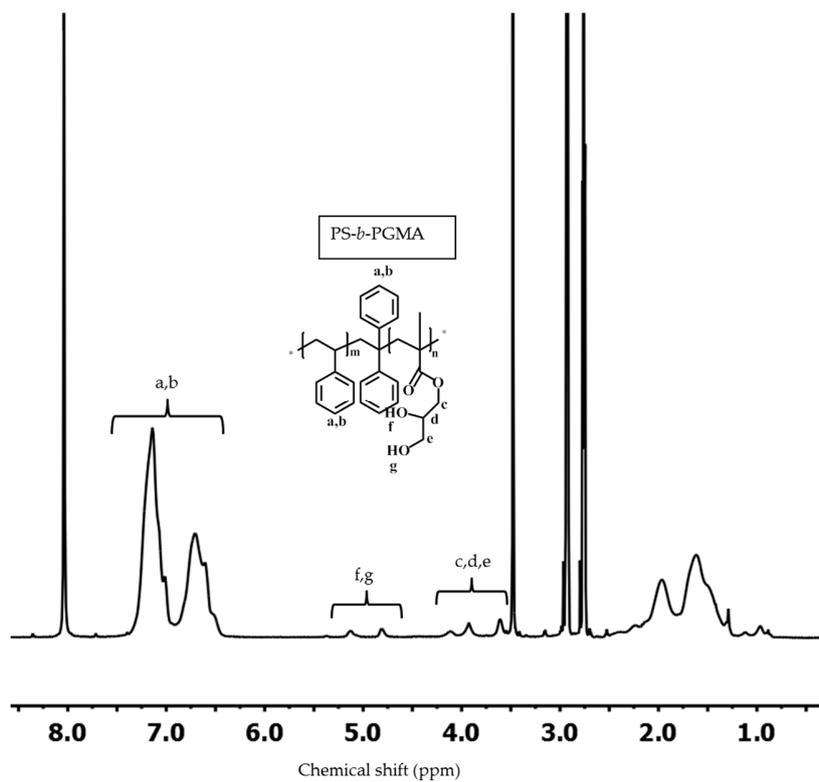


Figure S4. ¹H-NMR spectra of PS-*b*-PGMA in DMF-*d*₇.

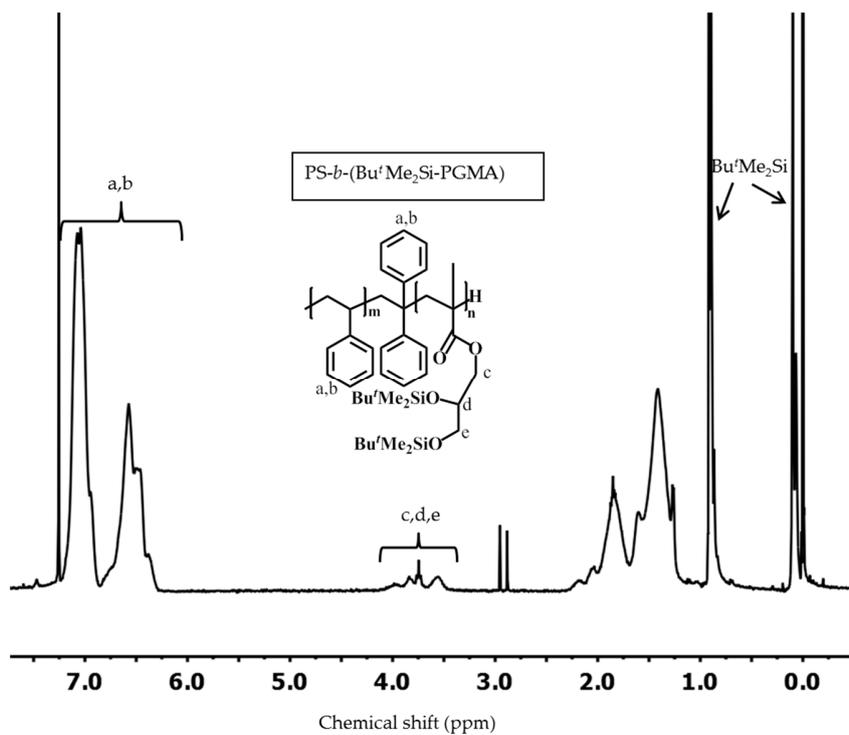


Figure S5. ¹H-NMR spectra of PS-*b*-(Bu^tMe₂Si-PGMA) in CDCl₃.