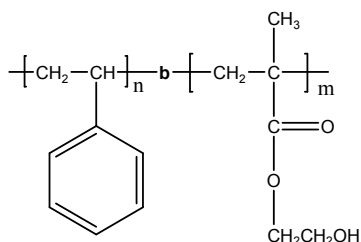


Sample Name:  
Poly(styrene-b-hydroxyethyl methacrylate)

Sample #: P40513-SHEMA

**Structure:**



**Composition:**

Mn $\times 10^3$ S-b-HEMA	Mw/Mn (PDI)
36.5-b-12.5	1.06

**Glass transition temperature at a glance**

T <sub>g</sub> for PS block	97 °C
T <sub>g</sub> for HEMA block	116 °C

**Synthesis Procedure:**

Poly(styrene-b-hydroxy ethyl methacrylate) was synthesized by living anionic polymerization by sequence addition of styrene followed by trimethylsiloxyl ethyl methacrylate (HEMA-TMS) and deprotection of the OH group.

**Characterization:**

The polymer was characterized by <sup>1</sup>HNMR and SEC.

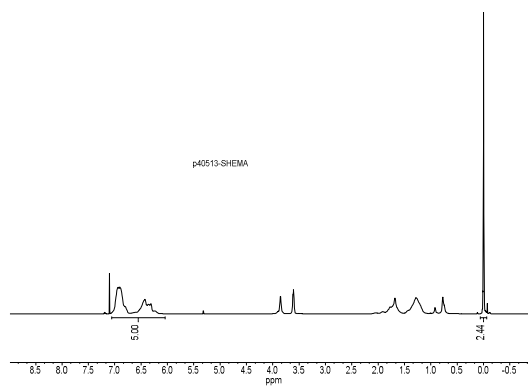
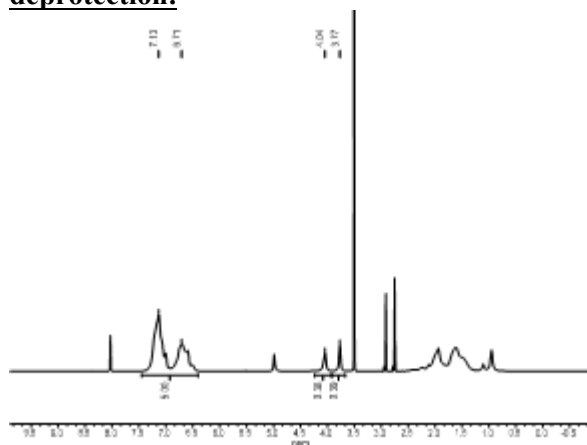
**Thermal analysis:**

Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere. The glass transition temperature (T<sub>g</sub>) of the polymer was measured at a scan rate of 10°C/min shortly after creating thermal history of the sample.

**Solubility:**

Poly(styrene-b-hydroxyethyl methacrylate) is soluble in DMF, and precipitated into hexanes.

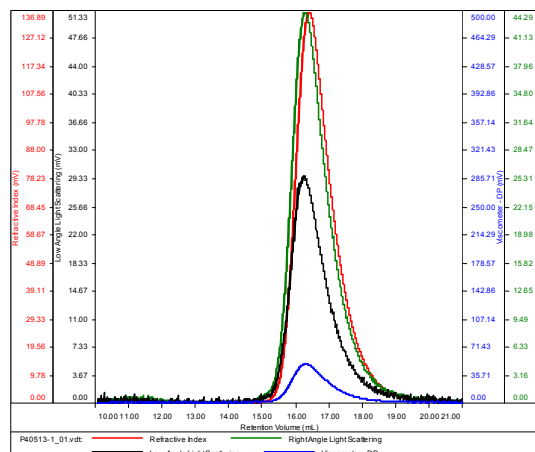
**<sup>1</sup>H NMR spectrum of the SHEMA in DMF after deprotection:**



**SEC elugram of the first block:**

P40513-1-S

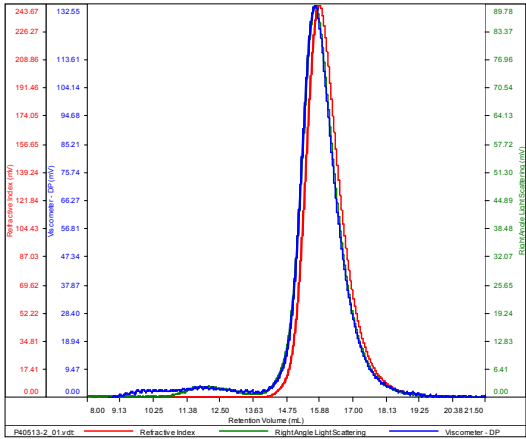
Conc	6.7430
dn/dc	0.1650
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS80k-March2017-0002.vcm



Sample	Mn	Mw	Mp	Mw/Mn	IV
P40513-1_01.vdt	36,683	38,349	36,403	1.045	0.1076

**SEC elugram of the block copolymer:**  
**P40513-S-HEMA**

Conc	15.1959
dn/dc	0.1400
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS80k-March2017-0002.vcm



Sample	Mn	Mw	Mp	Mw/Mn	IV
P40513-2_01.vdt	48,907	51,817	48,761	1.060	0.1371

**DSC thermogram of diblock copolymer**  
**(2nd heating scan, 10°C/min):**

Sample: P40513\_SHEMA      File: P40513-SHEMA.001  
Size: 10.5000 mg

