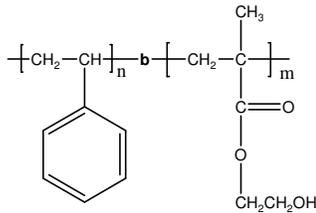


Sample Name:

Poly(styrene-b-hydroxyethyl methacrylate)

Sample #: P40052A-SHEMA

Structure:



Composition:

$M_n \times 10^{-3}$ S-b-HEMA	Mw/Mn (PDI)
114.0-b-27.0	1.25

Glass transition temperature at a glance

T_g for PS block	85 °C
T_g for HEMA block	Not distinct

Synthesis Procedure:

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

Characterization:

The polymer was characterized by ^1H NMR and SEC.

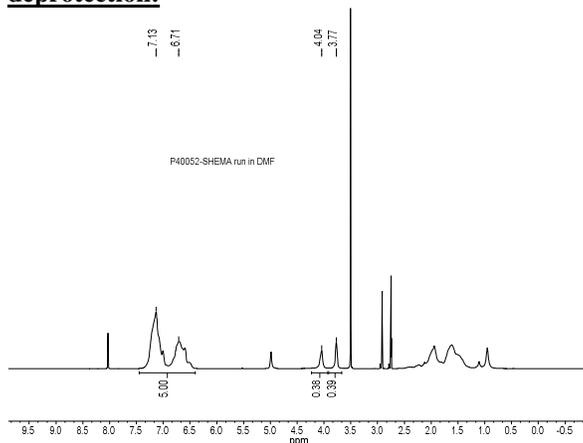
Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

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

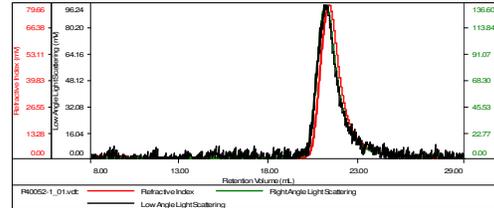
^1H NMR spectrum of the SHEMA in DMF after deprotection:



SEC elugram of the first block:

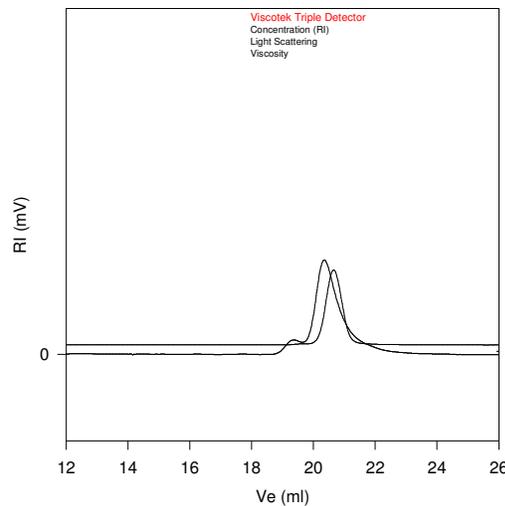
Sample ID: P40052-S

Concentration (mg/mL)	1.9041
Sample chvid: (mL/g)	0.1850
Method File	PS90K-30JUNE2016-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P40052-1_01.vdt	114,321	118,172	1.034	0.6804	113,655

SEC elugram of the block copolymer:
P40052A-SHEMA



Size Exclusion Chromatography of the product
PS Mn : 114,000 Mw : 118,000 Mw/Mn 1.03

— PS-b-PHEMA-TMS: $M_n = 114,000$ -b- 42,000 $M_w/M_n = 1.25$
After deprotection of OH: PS-b-HEMA: 114,000-b-27,000

Thermogram for PS block:

