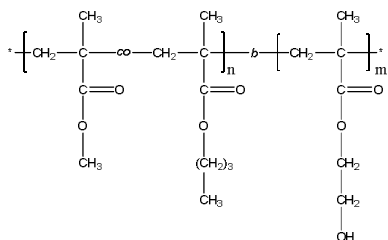


Sample Name:

Poly(methyl methacrylate-*co*(*random*)-*n*-butyl methacrylate)-*block*-poly(2-hydroxyethyl methacrylate)

Sample #: P19423-MMA_nBuMA_ran-b-HEMA

Structure:**Composition:**

$M_n \times 10^{-3}$ (g/mol)	22.0- <i>b</i> -24.5
M_w/M_n	1.09
Molar ratio MMA : nBuMA	54 : 46 (mol/mol)
Weight ratio MMA:nBuMA:HEMA	21 : 26 : 53 (wt%)

Synthesis Procedure:

Poly(methyl methacrylate-*co*-*n*-butyl methacrylate [random])-*b*-poly(2-hydroxyethyl methacrylate) block copolymer was synthesized by living anionic polymerization. First, methyl methacrylate (MMA) and *n*-butyl methacrylate (*n*-BuMA) were copolymerized; and then 2-[trimethylsilyloxy]ethyl methacrylate (hydroxyl-protected HEMA monomer) was added. The obtained block copolymer was precipitated in acidic methanol solution to deprotect the hydroxyl group.

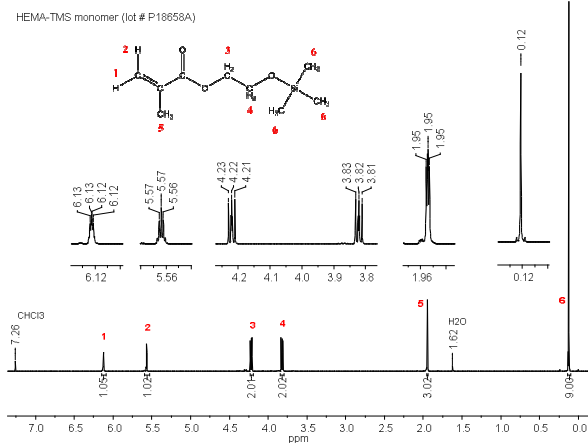
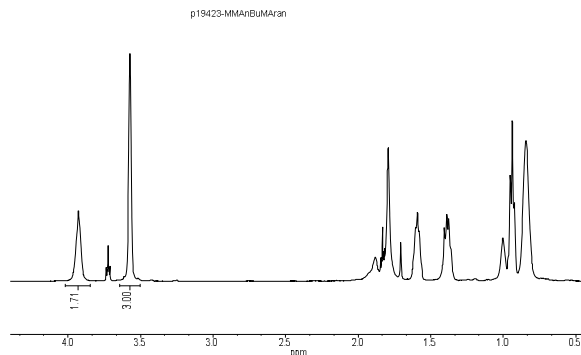
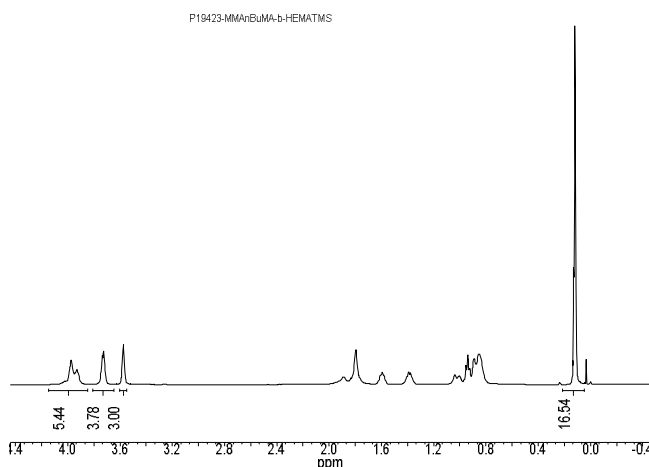
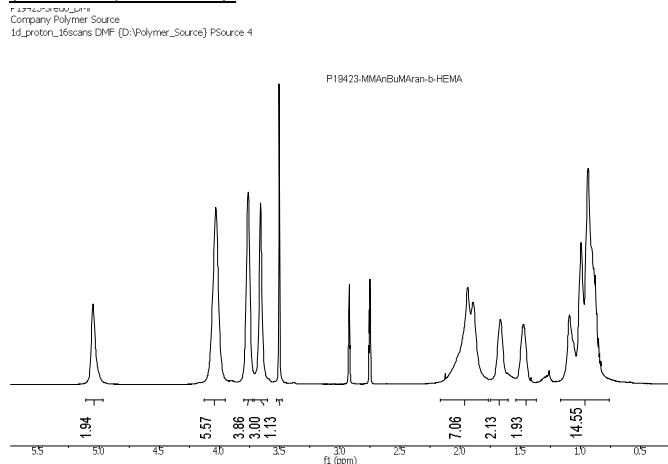
Solubility: The polymer is soluble in THF, DMF.

Characterization:

The polymer composition was confirmed by ^1H NMR.

The average molecular weight and polydispersity index were determined by size exclusion chromatography (SEC). For SEC analysis, the (MMA-*n*BuMA)-*b*-HEMA block copolymer was treated with acetic anhydride in presence of pyridine to convert the hydroxy-groups to acetate groups.

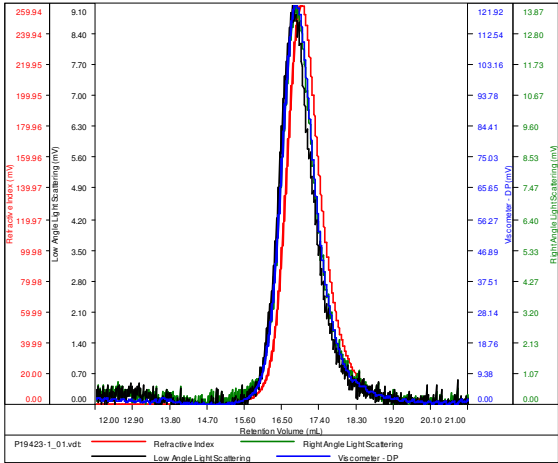
Thermal analysis of the sample was done on a TA Q100 differential scanning calorimeter (DSC) at a heating rate of $10^\circ\text{C}/\text{min}$. The glass transition temperature (T_g) was determined as a midpoint of step change in heat flow curve for the second heating scan.

 ^1H NMR of HEMA-TMS monomer (500 MHz, CDCl_3): **^1H NMR of MMA-*n*BuMA [first block] (500MHz, CDCl_3):** **^1H NMR of [MMA-*n*BuMA]-*b*-HEMA-TMS (500MHz, CDCl_3):** **^1H NMR of [MMA-*n*BuMA]-*b*-HEMA (500MHz, DMF-d_7):**

SEC of MMA-nBuMA [first block] in DMF:

SAMPLE ID: P19423-1-MMA nBuMAran

Conc (mg/mL)	11.9842
dn/dc (mL/g)	0.0650
Method	ps80kJuly292015-0000.vcm
Solvent	DMF w 0.03M LiBr
Column	PSS

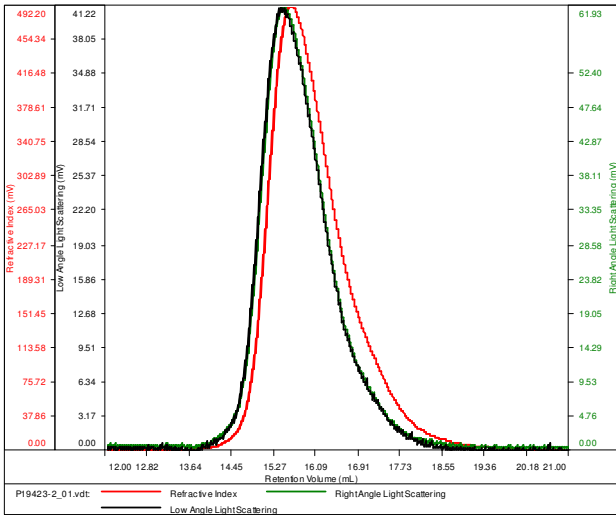


Sample	Mn	Mw	Mp	Mw/Mn	IV
P19423-1_01.vdt	21,833	23,046	21,982	1.056	0.1176

SEC of [MMA-nBuMA]-b-HEMA-TMS in DMF:

SAMPLE ID:
P19423-MMA nBuMAranHEMATMS

Conc (mg/mL)	43.2416
dn/dc (mL/g)	0.0520
Method	ps80kJuly292015-0000.vcm
Solvent	DMF w 0.03M LiBr
Column	PSS



Sample	Mn	Mw	Mp	Mw/Mn	IV
P19423-2_01.vdt	59,856	64,916	67,156	1.085	0.1827

DSC of [MMA-nBuMA]-b-HEMA:

