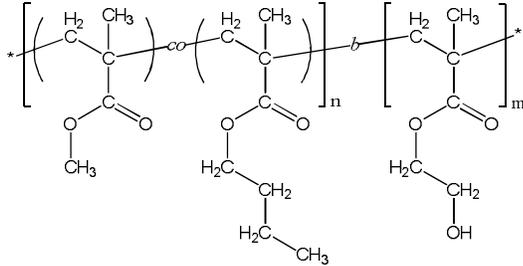


Sample Name:

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

Sample #: P40193-MMA*n*BuMA*r*an-*b*-HEMA

Structure:



Composition:

$M_n \times 10^3$ (g/mol)	28.2- <i>b</i> -22.0
M_w/M_n	1.12
Molar ratio MMA : nBuMA	53 : 47 (mol/mol)

Synthesis Procedure:

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

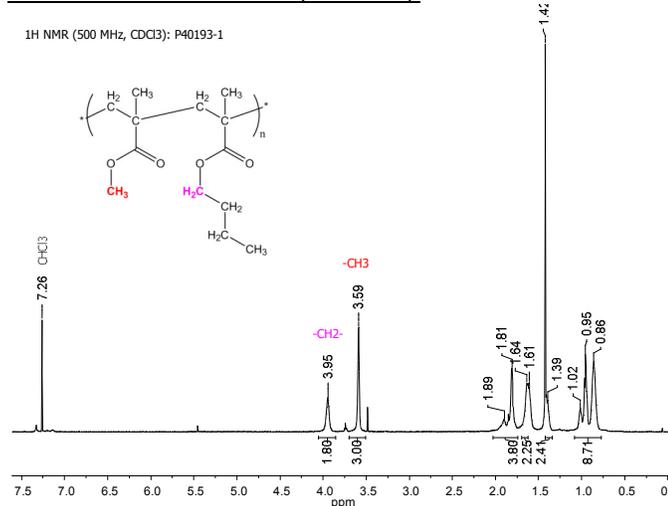
Solubility: The polymer is soluble in THF, DMF.

Characterization:

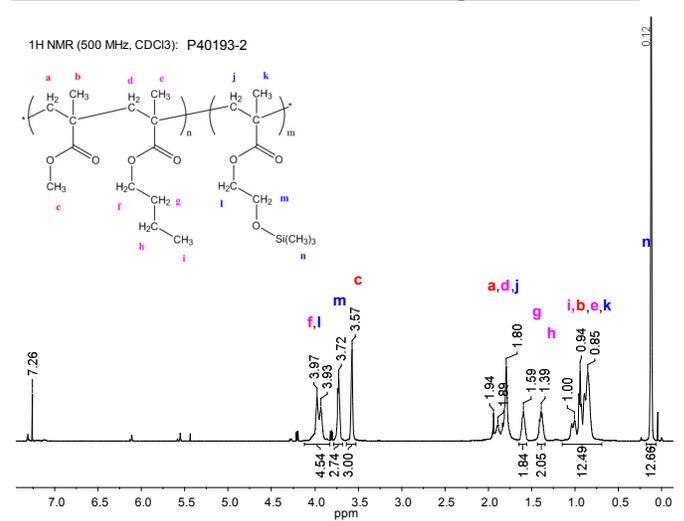
The polymer composition was determined by ¹H NMR. MMA:*n*BuMA molar ratio was calculated by comparing the integration of the -OCH₂- protons of *n*BuMA (at $\delta = 3.9$ ppm) to the integration of methoxy group of MMA (at $\delta = 3.6$ ppm). Molecular weight of the second (HEMA) block was calculated by comparing the integration of -OCH₂- protons of HEMATMS to the integration of methoxy group of MMA and using SEC data for the first (MMA*n*BuMA) block.

The average molecular weight and polydispersity index were determined by size exclusion chromatography (SEC).

¹H NMR of MMA*n*BuMA*r*an [first block]:



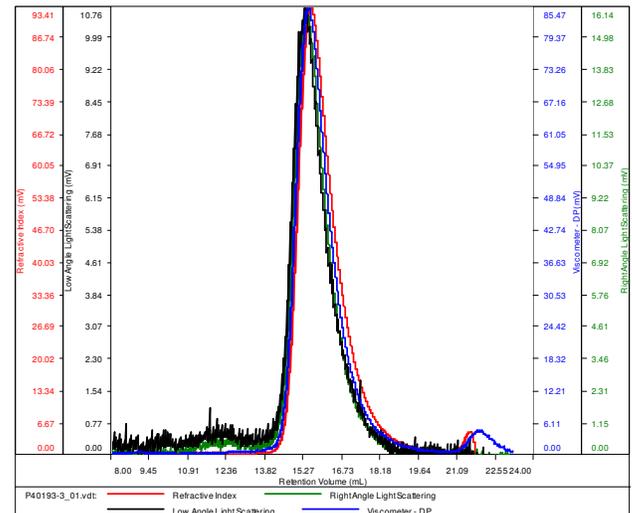
¹H NMR of MMA*n*BuMA*r*an-*b*-HEMATMS [protected diblock]:



SEC of MMA*n*BuMA*r*an-*b*-HEMA:

P40193-MMA*n*BuMA*r*an-HEMA

Conc (mg/mL)	14.5638
dn/dc (mL/g)	0.0650
Method	PS80k_December-2016-0004.vcm
Solvent	DMF w 0.023M LiBr
Column	PSS



Sample	Mn	Mw	Mp	Mw/Mn	IV
P40193-3_01.vdt	50,230	56,219	56,407	1.119	0.1026