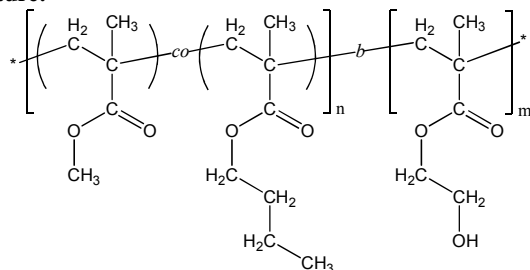


Sample Name:

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

Sample #: P40206P-MMA_nBuMA_ran-b-HEMA

Structure:



Composition:

$M_n \times 10^3$ (g/mol)	22.0- <i>b</i> -28.3
M_w/M_n	1.28
Molar ratio MMA : nBuMA	50 : 50 (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.

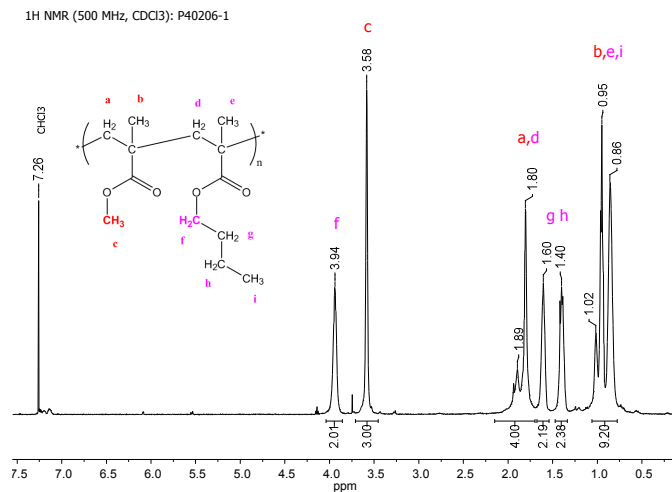
Solubility: The polymer is soluble in THF, DMF.

Characterization:

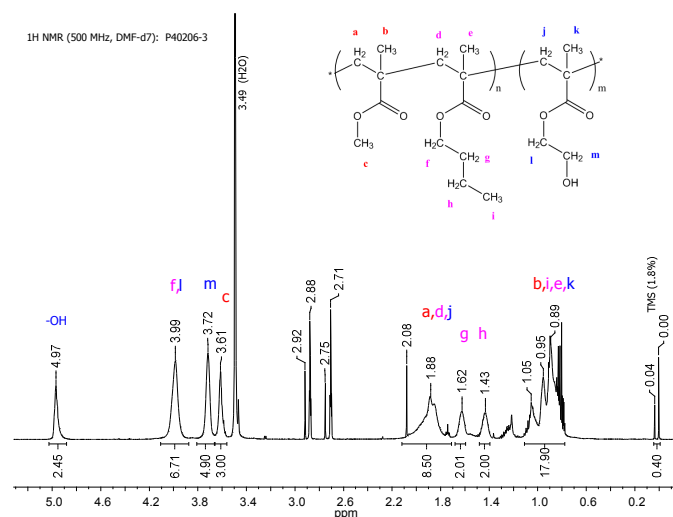
The polymer composition was determined by ^1H NMR. MMA:nBuMA molar ratio was calculated by comparing the integration of the $-\text{OCH}_2-$ protons of nBuMA (at $\delta = 3.9$ ppm) to the integration of methoxy group of MMA (at $\delta = 3.6$ ppm). Molecular weight of the second (HEMA) block was calculated by comparing the integration of $-\text{OCH}_2-$ protons of HEMATMS to the integration of methoxy group of MMA and using SEC data for the first (MMA_nBuMA) block.

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

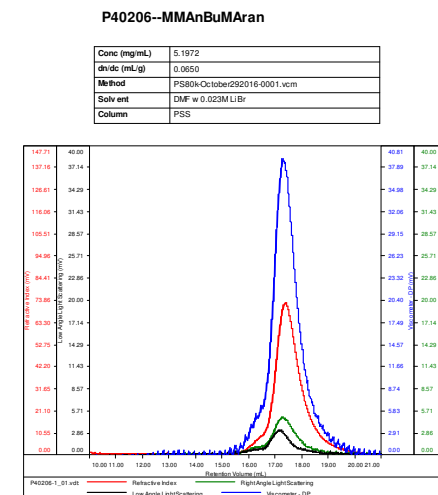
^1H NMR of MMA_nBuMA_ran [first block]:



^1H NMR of MMA_nBuMA_ran-b-HEMA diblock copolymer:

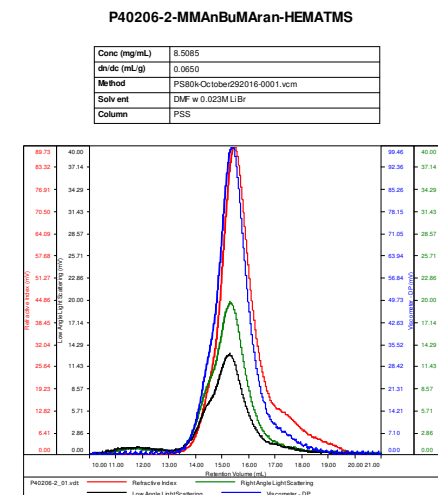


SEC of MMA_nBuMA_ran [first block]:



Sample	Mn	Mw	Mp	Mw/Mn	IV
P40206-1_01.vdl	22,057	23,633	22,221	1.071	0.0965

SEC of MMA_nBuMA_ran-b-HEMATMS [protected diblock]:



Sample	Mn	Mw	Mp	Mw/Mn	IV
P40206-2_01.vdl	65,007	83,270	73,708	1.281	0.1901