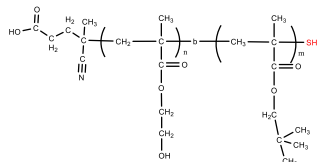


Sample Name: Poly (2-hydroxyethyl methacrylate-b- Neopentyl methacrylate

Sample #: P44243A-HEMANPMA

Structure:

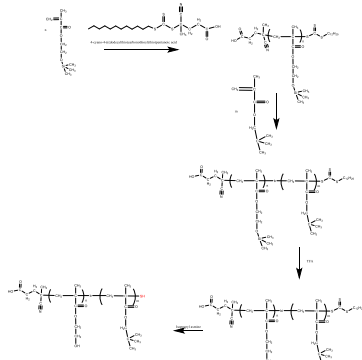


Composition:

Mn × 10 ³ HEMA-b-NPMA	PDI
4.0-b-11.0	1.18
T _g for NPMA block: 110 °C Poly HEMA T _g : not visible	

Synthesis Procedure:

Poly(2-hydroxy ethyl methacrylate-b-neopentyl acrylate) is synthesized by living RAFT polymerization process.



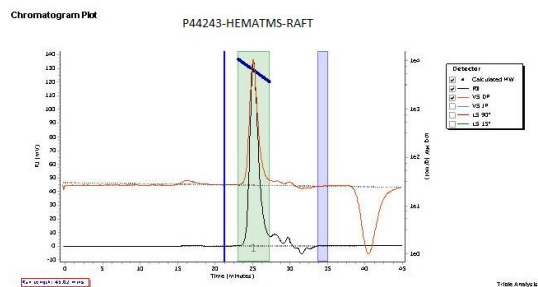
Characterization: An aliquot of the anionic poly(hydroxyl ethyl methacrylate) block was terminated before addition of neopentyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from SEC result since the first block is very short.

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 (2-hydroxy ethyl methacrylate-b-neopentyl methacrylate) is soluble in DMF, THF and CHCl₃ (depends upon block composition) but insoluble in water. The polymer is insoluble in hexane while HEMA chain is too long.

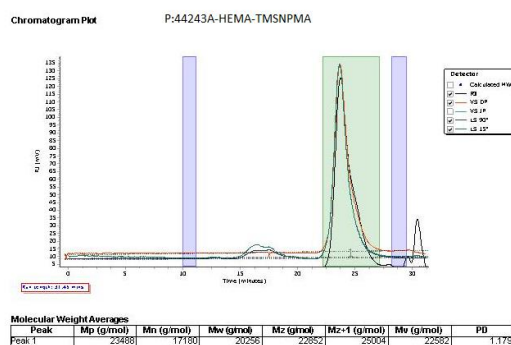
SEC elugram of the block copolymer:

Poly HEMA_TMS BLOCK



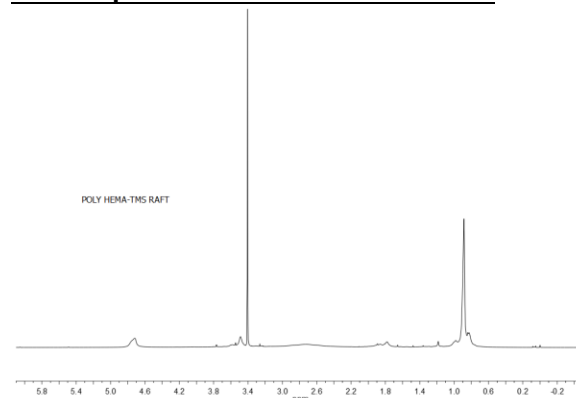
Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mz (g/mol)	PDI
Peak 1	5475	5000	6236	6303	6522	6345	1.026

After deprotecting TMS-poly HEMA Mn; 4,000

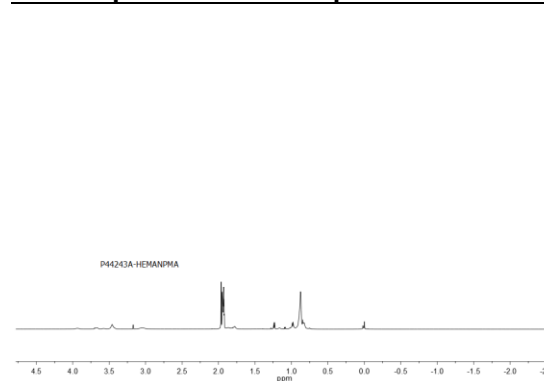


Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mz (g/mol)	PDI
Peak 1	23488	17180	20256	22852	25004	22582	1.175

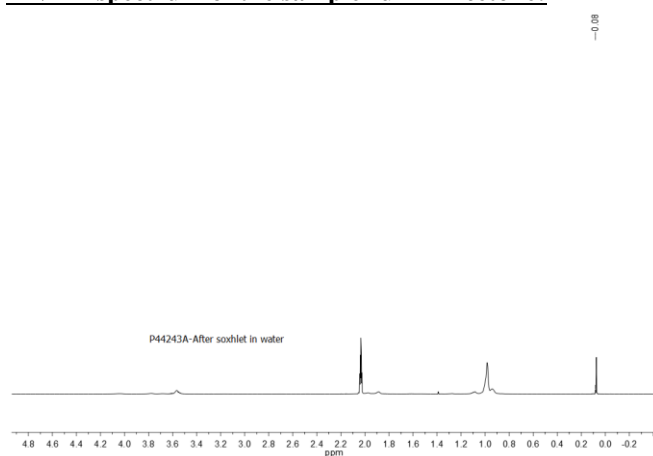
HNMR spectrum of the HEMA-TMS raft:



HNMR spectrum of the sample run in Acetone:



HNMR spectrum of the sample run in Acetone:



DSC thermogram for Polymer:

Sample: P44243A_HEMA-b-NPMA-SPP

