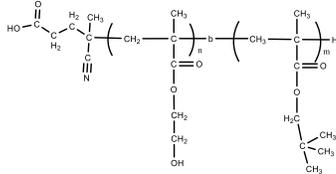


**Sample Name:** Poly (2-hydroxyethyl methacrylate-  
b- Neopentyl methacrylate

**Sample #:** P44243-HEMANPMA

**Structure:**

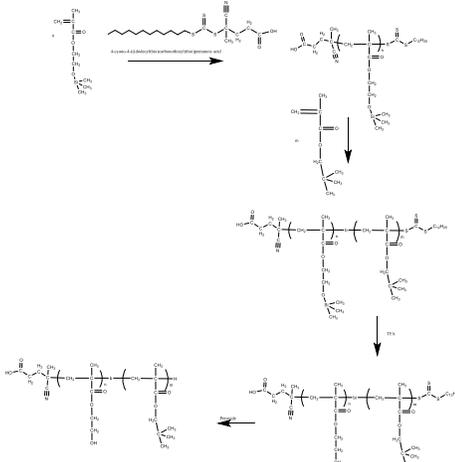


**Composition:**

Mn × 10 <sup>3</sup> HEMA-b-NPMA	PDI
4.0-b-19.0	1.3
T <sub>g</sub> for NPMA block: 124 °C Poly HEMA T <sub>g</sub> not visible	

**Synthesis Procedure:**

Poly(2-hydroxy ethyl methacrylate-b-neopentyl methacrylate) 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**

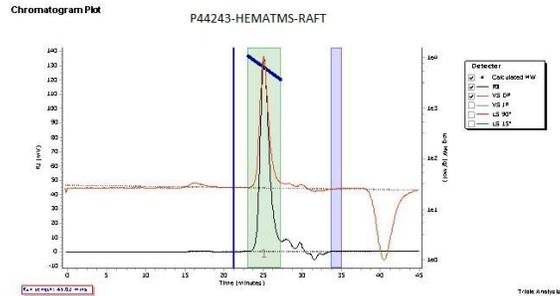
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T<sub>g</sub>).

**Solubility:**

Poly(2-hydroxy ethyl methacrylate-b-neopentyl methacrylate) is soluble in DMF, THF and CHCl<sub>3</sub> (depends upon block composition) but insoluble in water. The polymer is insoluble in hexane while HEMA chain is too long.

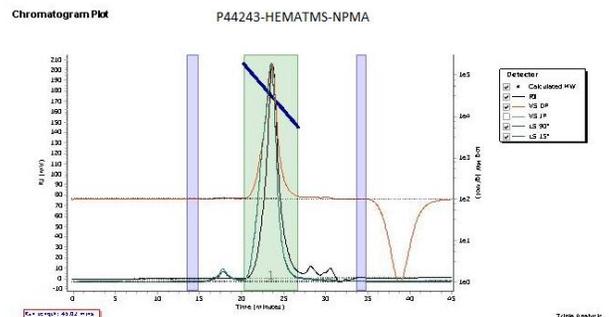
**SEC elugram of the block copolymer:**

Poly HEMA\_TMS BLOCK



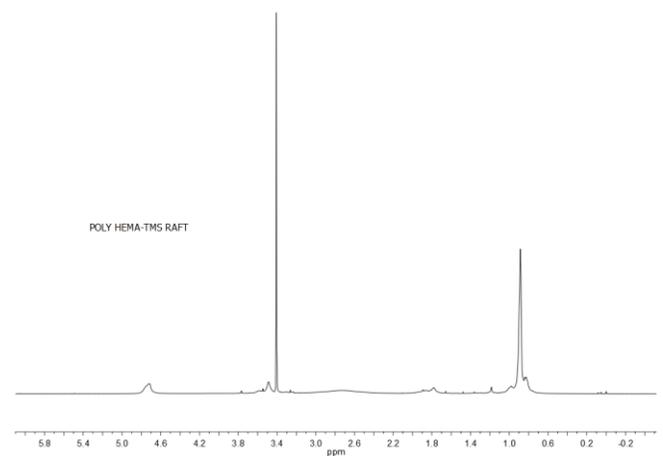
Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Me (g/mol)	PDI
Peak 1	5473	6080	6236	6383	6522	6345	1.026

After deprotecting TMS-poly HEMA Mn; 4,000

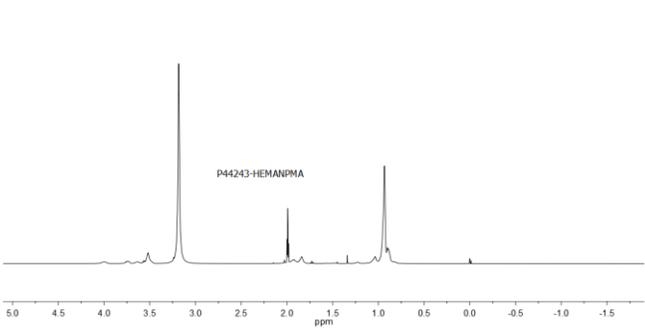


Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Me (g/mol)	PDI
Peak 1	29044	25000	32410	41262	52351	38933	1.296

**HNMR spectrum of the polymer:**



**HNMR spectrum of the THE PHEMA-NPMA run in Acetone:**



**DSC thermogram for Polymer:**

Sample: P44243\_HEMA-b-NPMA

