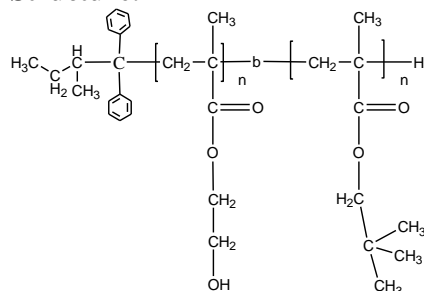


**Sample Name:** Poly (2-hydroxyethyl methacrylate)-b-neopentyl methacrylate)

**Sample #:** P6105-HEMANPMA

**Structure:**

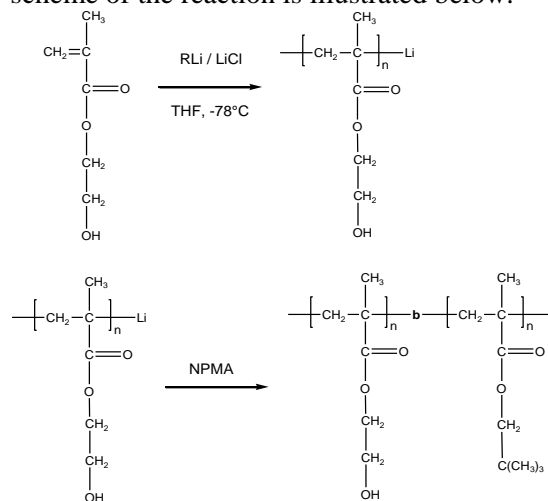


**Composition:**

Mn × 10 <sup>3</sup> HEMA-b-NPMA	PDI
2.8-b-100.0	1.07
22 units per HEMA block	T <sub>g</sub> for NPMA block: 125 °C

**Synthesis Procedure:**

Poly(2-hydroxy ethyl methacrylate-b-neopentyl methacrylate) is synthesized by living anionic polymerization with sequence addition of hydroxyl ethyl acrylate followed by neopentyl methacrylate. The scheme of the reaction is illustrated below:



**Characterization:**

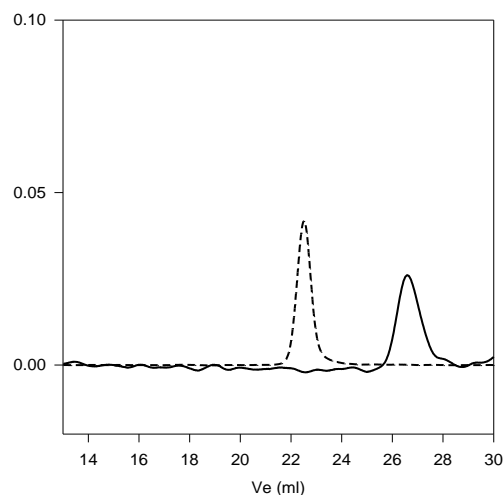
An aliquot of the anionic poly(hydroxyl ethyl methacrylate) block was terminated before addition of neopentyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from SEC result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

**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 of the block copolymer:**

**P6105-HEMANPMA**



— Poly(HEMA-TMS): M<sub>n</sub>=4450, M<sub>w</sub>=4900, M<sub>w</sub>/M<sub>n</sub>=1.10  
 --- Block Copolymer PHEMA-TMS(4450)-b-PNPMA(100000), M<sub>w</sub>/M<sub>n</sub>=1.07  
 After hydrolysis: PHEMA(2860)-b-PNPMA(100000), M<sub>w</sub>/M<sub>n</sub>=1.07

**DSC thermogram for NPMA block:**

