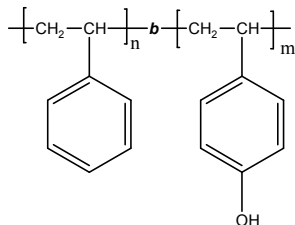


**Sample Name:**  
Poly(styrene-b-4-hydroxy styrene)

**Sample #:** P18009A-S4OHS

**Structure:**

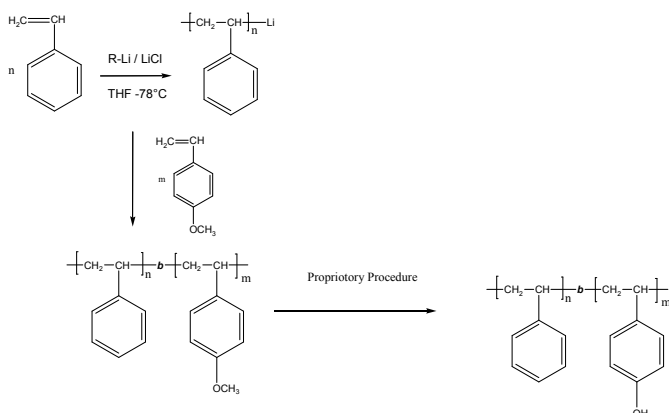


**Composition:**

Mn x 10 <sup>3</sup> S-b-4HOS	Mw/Mn (PDI)
19.0-b-14.0	1.2

**Synthesis Procedure:**

Poly(styrene-b-4-methoxy styrene) is prepared by living anionic polymerization by sequence addition of styrene followed by 4-methoxy styrene. The obtained polymer converted to Poly (styrene-b-4 Hydroxy styrene) di block copolymer. The reaction scheme is shown below:



**Characterization:**

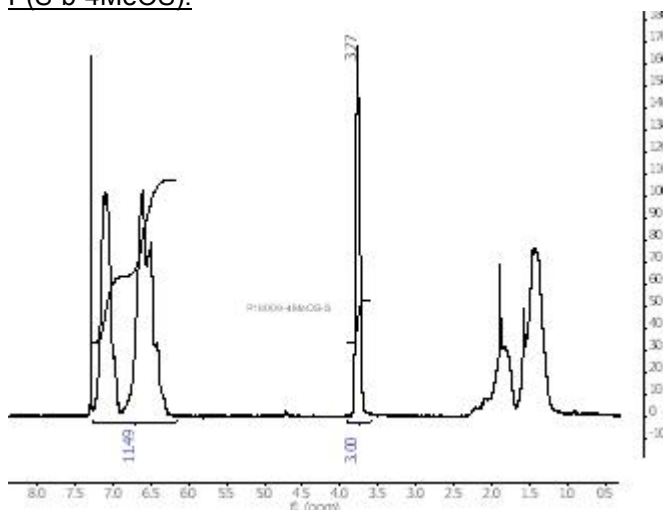
An aliquot of the polystyrene block was terminated before addition of 4-hydroxystyrene and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area of 4-methoxy styrene at 3.7ppm. Block copolymer PDI is determined by SEC.

HNMR of the diblock PS-b-4OHS was carried out in CdCl<sub>3</sub> in the presence of trace amount of methanol to solubilize polymer.

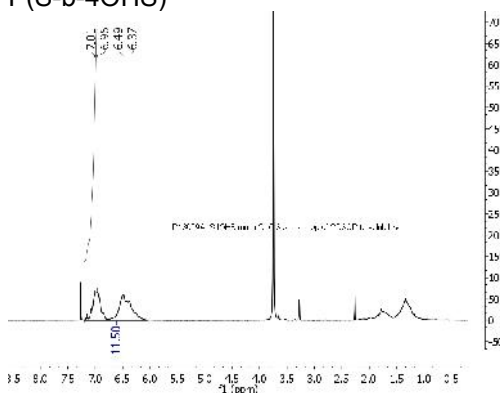
**Solubility:**

Poly(styrene-b-eth4-hydroxystyrene) is soluble in THF.

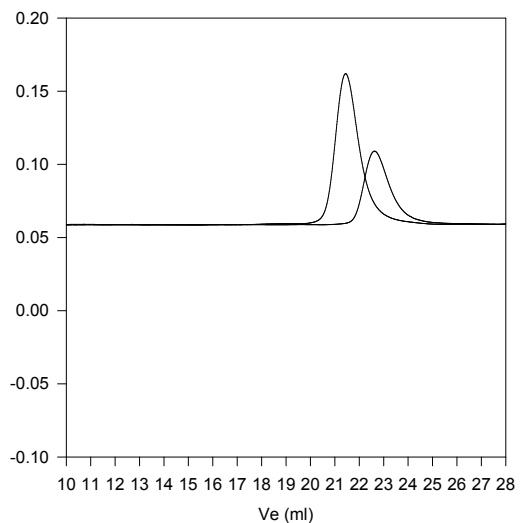
**Figure:** <sup>1</sup>H NMR spectrum of the sample  
P(S-b-4MeOS):



P(S-b-4OHS)



**Figure: SEC profile of the block copolymer**  
**P18009-S4MeOS**



— Poly 4MeOstyrene, M<sub>n</sub>=16,500, M<sub>w</sub>=20,000, PI=1.2  
— Block Copolymer P4MeOS(16,500)-b-PS(19,000), PI=1.2

After Hydrolysis of Methoxy group :  
Mn 19,000-b-14,000