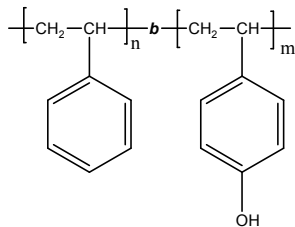


**Sample Name:**  
Poly(styrene-b-4-hydroxy styrene)

**Sample #:** P8618-S4OHS

**Structure:**

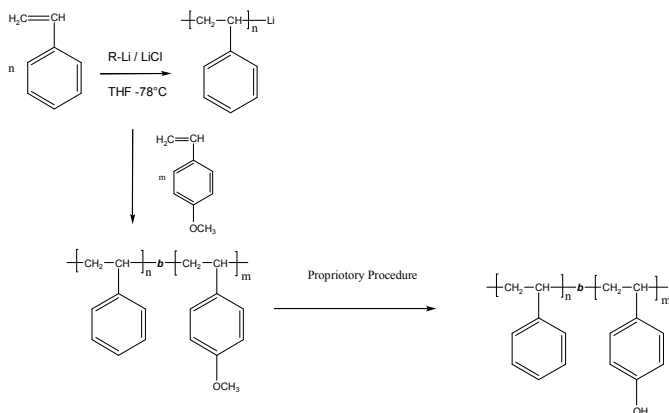


**Composition:**

Mn x 10 <sup>3</sup> S-b-4HOS	Mw/Mn (PDI)
7.5-b-4.5	1.10

**Synthesis Procedure:**

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



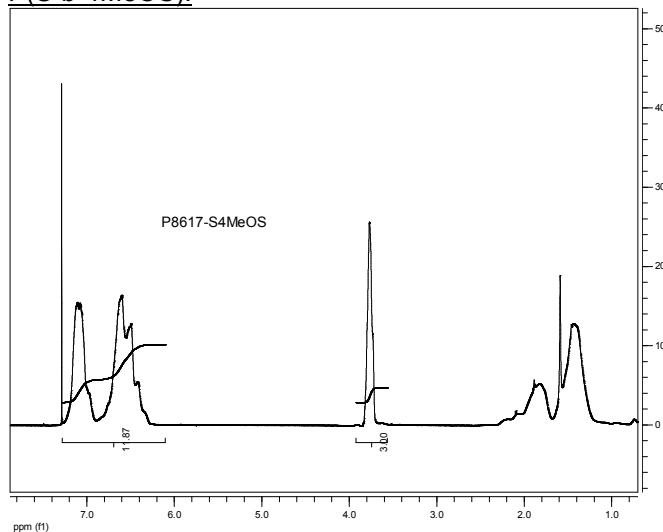
**Characterization:**

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-hydroxy styrene at 3.4ppm. Block copolymer PDI is determined by SEC.

**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)

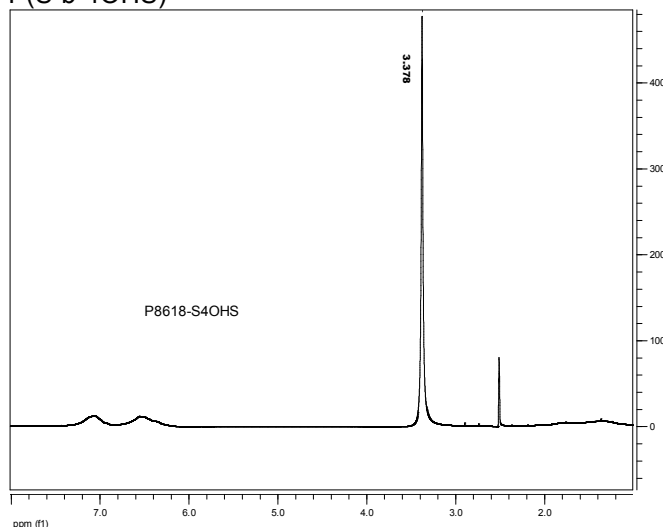
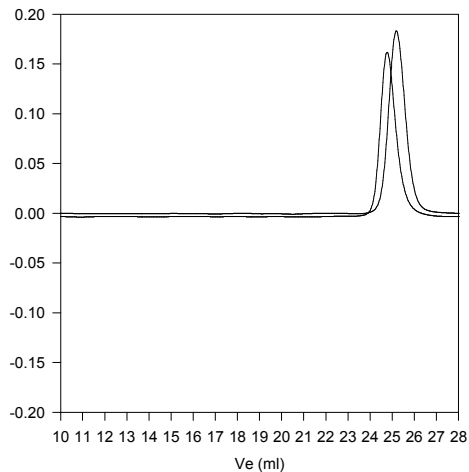


Figure: SEC profile of the block copolymer P8618-S4OHS



— Polystyrene, M<sub>n</sub>=7500, M<sub>w</sub>=8100, PI=1.08  
 — Block Copolymer PS(7500)-b-P4MeOS(5000), PI=1.10  
 After deprotection of Methoxy to hydroxy:  
 PS-b-4OHS Mn 7500-b-4500 Mw/Mn 1.10