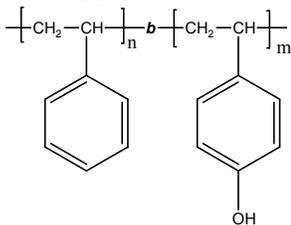


Sample Name:
Poly(styrene-b-4-hydroxy styrene)

Sample #: P18009A-S4OHS

Structure:

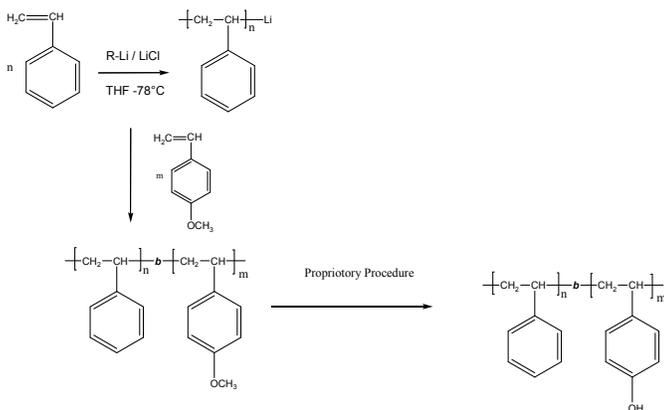


Composition:

Mn x 10 ³ 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:

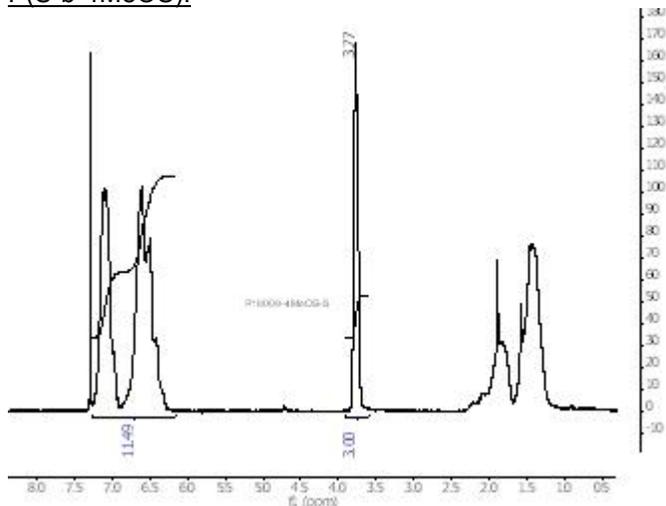
An aliquot of the polystyrene block was terminated before addition of 4-hydroxystyrene and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak 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.

¹H-NMR of the diblock PS-b-4OHS was carried out in CdCl₃ in the presence of trace amount of methanol to solubilize polymer.

Solubility:

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

Figure: ¹H NMR spectrum of the sample P(S-b-4MeOS):



P(S-b-4OHS)

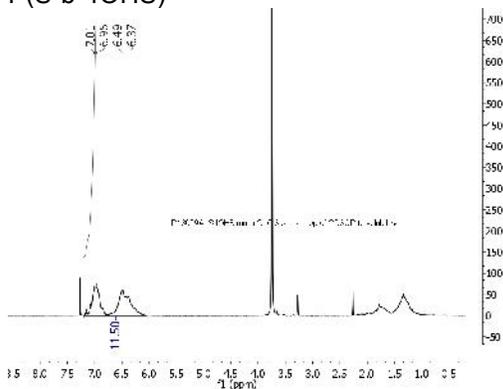
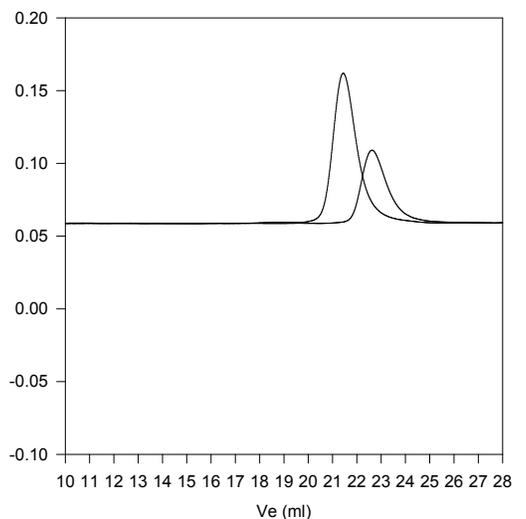


Figure: SEC profile of the block copolymer P18009-S4MeOS



— Poly 4MeOstyrene, M_n=16,500, M_w=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