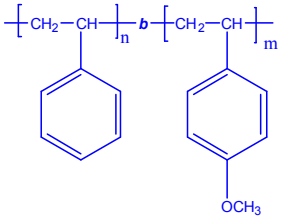
Sample Name:
Poly(styrene-b-4-methoxy styrene)

Sample #: P8615-S4MeOS

Structure:

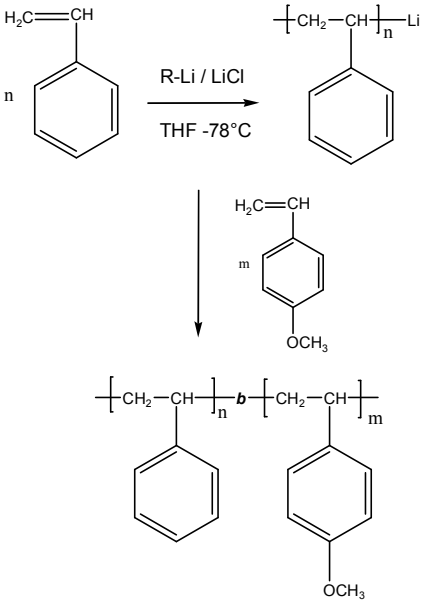


Composition:

Mn x 10^3 S-b-4HOS	Mw/Mn (PDI)
9.0-b-7.0	1.12

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 reaction scheme is shown below:



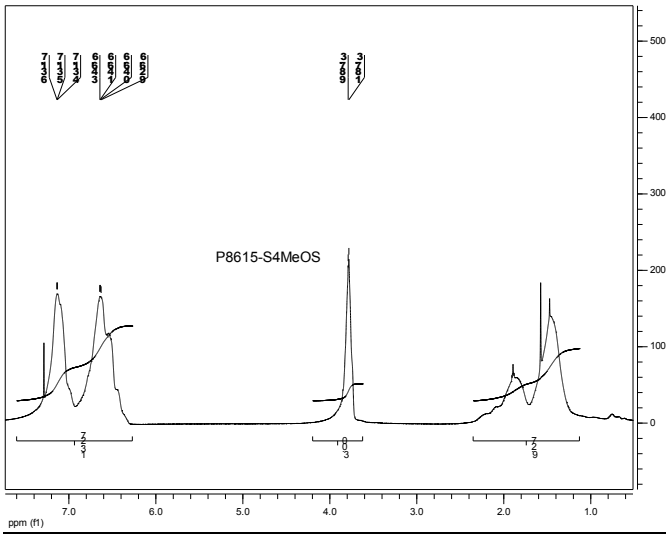
Characterization:

An aliquot of the polystyrene block was terminated before addition of 4-methoxy styrene and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ^{1}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 at 3.8 ppm. Block copolymer PDI is determined by SEC.

Solubility:

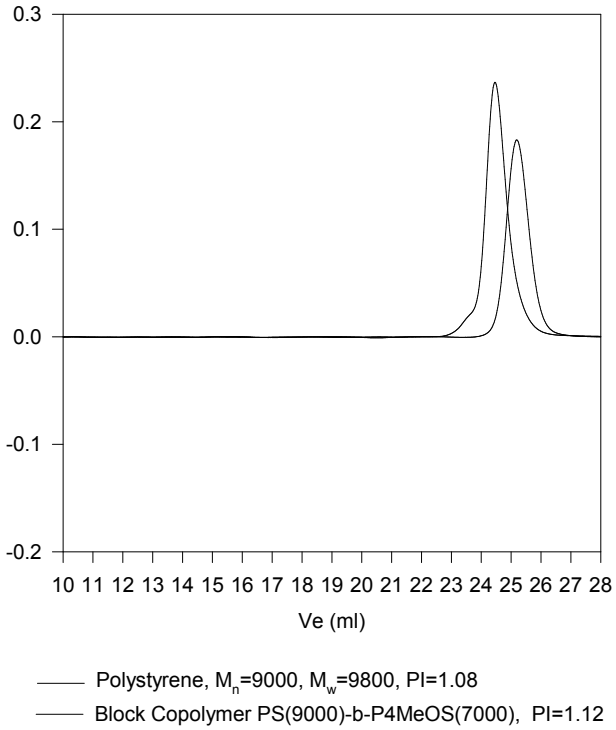
Poly(styrene-b-eth4-hydroxystyrene) is soluble in CHCl3, toluene, dioxane, THF.

^{1}H NMR spectrum of the sample:



SEC profile of the block copolymer

P8615-S4MeOS



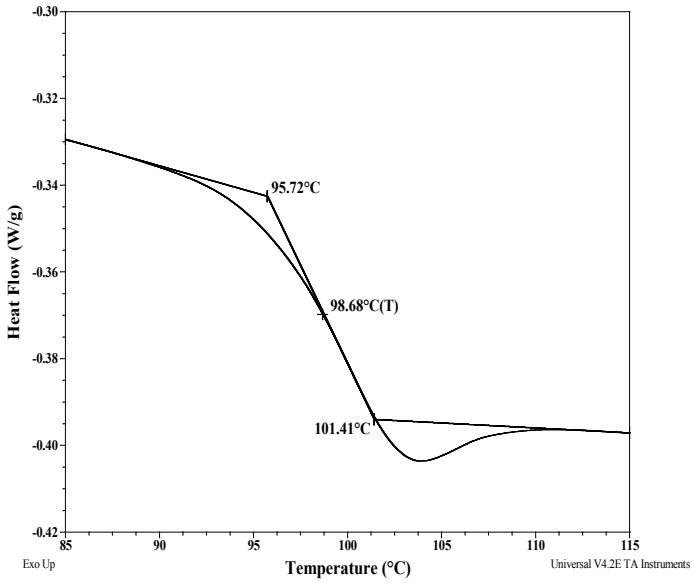
Thermal analysis of P8615-S4MeOS

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_g).

Thermal analysis results at a glance:

Polymer block	T_g (°C)
PS	99
4MeOS	181

DSC thermogram for PS block:



DSC thermogram for 4 MeOS block: