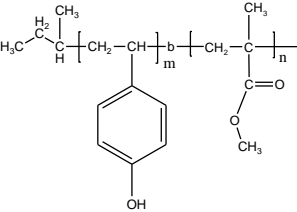


Sample Name:  
Poly(4-hydroxy styrene-b-Methylmethacrylate)

Sample #: P18289-4OHS MMA

Structure:



Composition:

|                                    |             |
|------------------------------------|-------------|
| Mn x 10 <sup>3</sup><br>4OHS-b-MMA | Mw/Mn (PDI) |
| 36.0-b-86.0                        | 1.08        |

Synthesis Procedure:

Poly(4- methoxy styrene-b-MMA) is prepared by living anionic polymerization by sequence addition of 4-methoxyl styrene followed by methylmethacrylate. The obtained polymer converted to Poly (4 Hydroxy styrene-b-MMA) di block copolymer.

**Characterization** Block was 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 4 methoxy styrene protons at 6.3-7.2 ppm with the peak area of 4-methoxy styrene at 3.7ppm and MMA –Methyl ester at 3.6 ppm . HNMR of the diblock 4OHS-b-MMA was carried out in acetone to illustrate quantitative hydrolysis of methoxy ether to OH.

**Solubility:** Polymer is soluble in THF, acetone

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

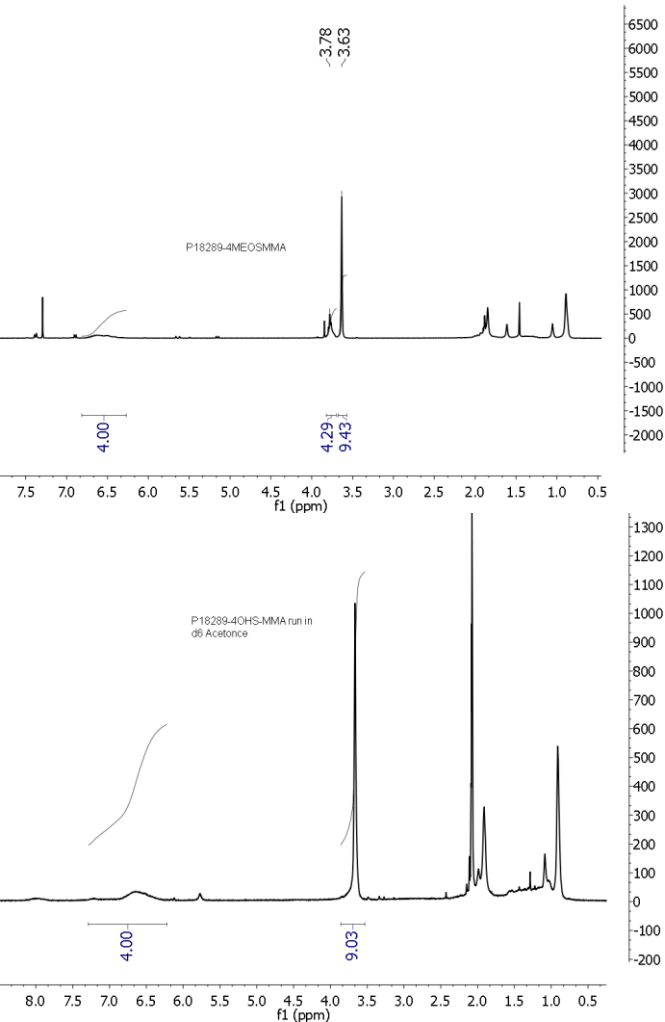
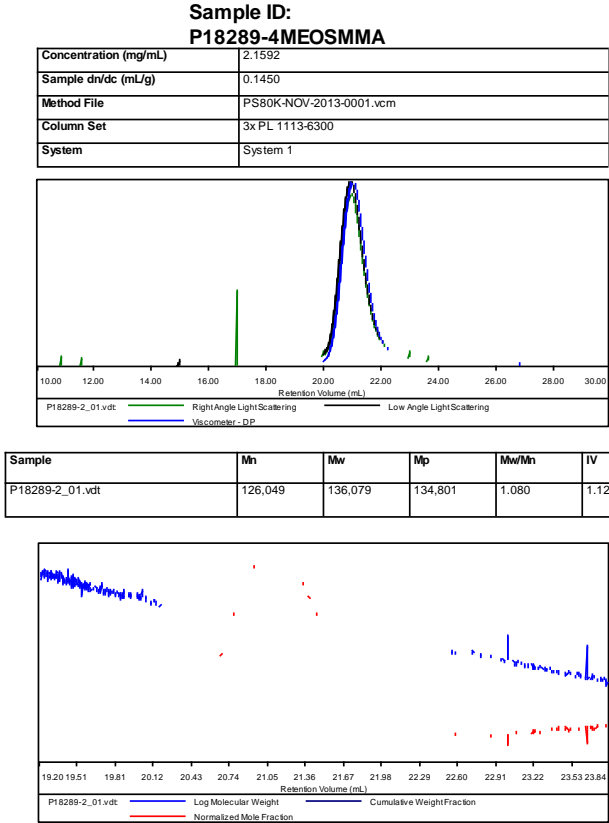


Figure: SEC profile of the block copolymer



Mn in the form of 4Methoxy styrene-b-MMA:  
40,000-b-86,000

Mn after Hydrolysis of methyl ether to Phenol:  
36,000-b-86,000