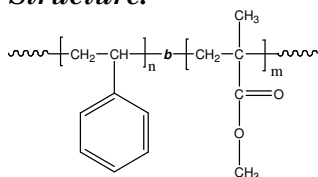


**Sample Name: Poly(styrene-*b*-methyl methacrylate) (polymethylmethacrylate rich in syndiotactic contents > 78%)**

**Sample #: P11044-SMMA**

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> S-b-MMA	PDI
84.0-b-220.0	1.06
T <sub>g</sub> for PS block: 107°C	T <sub>g</sub> for PMMA block: 132 °C
dn/dc in THF at 35 °C	0.1069
Mn alues obtained from LS detector on line: Mn total : 304.0	

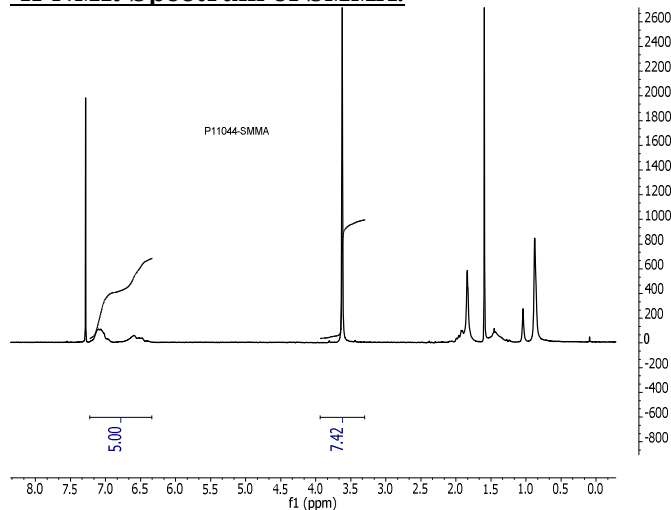
**Synthesis Procedure:**

By anionic process: For further details please see our published articles.<sup>1-5</sup>

**Characterization:**

Polymer 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 poly(methyl methacrylate) protons (eg. -OCH<sub>3</sub> at 3.6ppm) with of aromatic protons of polystyrene at 6.3-7.2 ppm. Copolymer PDI is determined by SEC. Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T<sub>g</sub>) of the sample has been considered.

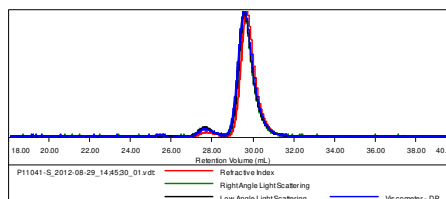
**<sup>1</sup>H-NMR Spectrum of SMMA:**



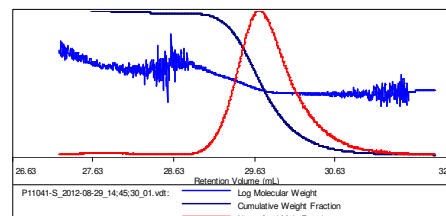
**SEC of Sample -SMMA:**

Sample ID: P11041-I-S

Concentration (mg/mL)	2.9412
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-aug-0002.vcm
Column Set	3x PL 1113-6300
System	System 1

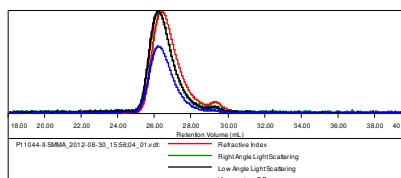


Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P11041-S_2012-08-29_14:45:30_01.vdt	84,309	89,573	84,189	1.062	0.6774

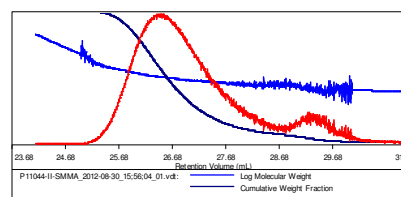


Sample ID: P11044-II-SMMA

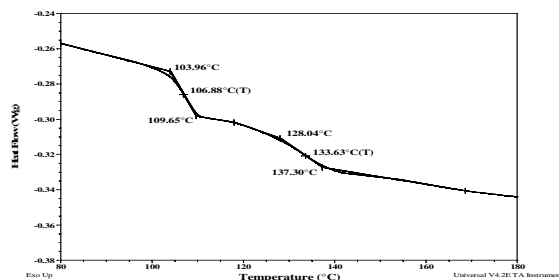
Concentration (mg/mL)	2.3480
Sample dn/dc (mL/g)	0.1089
Method File	PS80K-aug-0002.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P11044-II-SMMA_2012-08-30_15:56:04_01.v	304,454	330,099	350,356	1.084	0.8978



**Thermogram for the sample**



**References for further information:**

1. S. K. Varshney, R. Fayt, Ph. Teyssie, and J.P. Hautekeer US Patent 5,264,527 (1993)
2. Ph. Teyssie, Ph. Bayard, R. Jerome, S. K. Varshney, and J. S. Wang, *35th IUPAC International Union of Pure & Applied Chemistry International Symposium on Macromolecules* 1994, 67.
3. Ph. Teyssie, R. Fayt, J. P. Hautekeer, C. Jacobs, R. Jerome, L. Leemans and S. K. Varshney *Makromolekular Chemie, Macromol. Symp.*, 1990, 32,61-73.
4. S. K. Varshney, J. P. Hautekeer, R. Fayt, R. Jerome, and Ph.Teyssie *Macromolecules*, 1990, 23, 2618-2622.