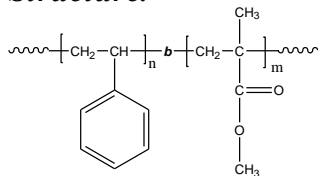


**Sample Name: Poly(styrene-b-methyl methacrylate)**

**(polymethylmethacrylate rich in syndiotactic contents > 78%)**

**Sample #: P11079B-SMMA**

**Structure:**



**Composition:**

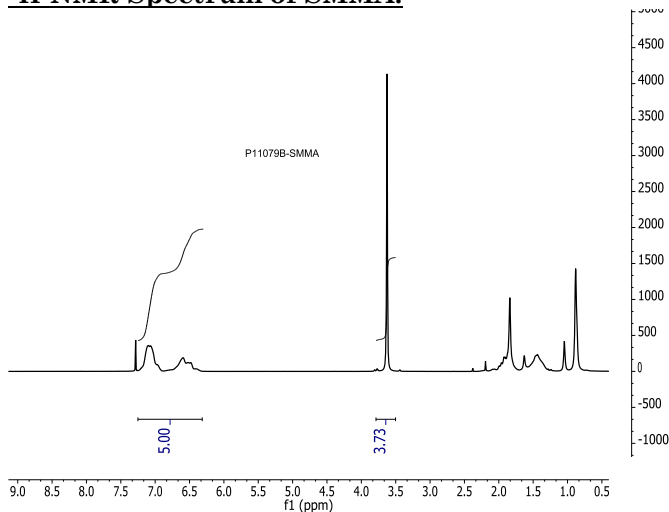
Mn x 10 <sup>3</sup> S-b-MMA	PDI
160.0-b-191.0	1.35
T <sub>g</sub> for PS block: 107°C	T <sub>g</sub> for PMMA block: 132 °C
dn/dc in THF at 35 °C	0.100
Mn alues obtained from LS detector on line:	

#### 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.

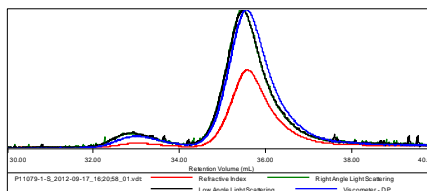
#### <sup>1</sup>H-NMR Spectrum of SMMA:



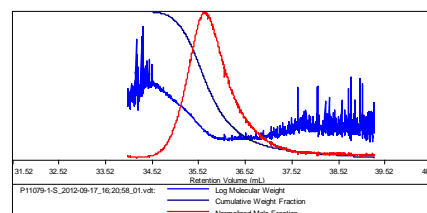
#### SEC of Sample PS Block

Sample ID: P11079-1-S

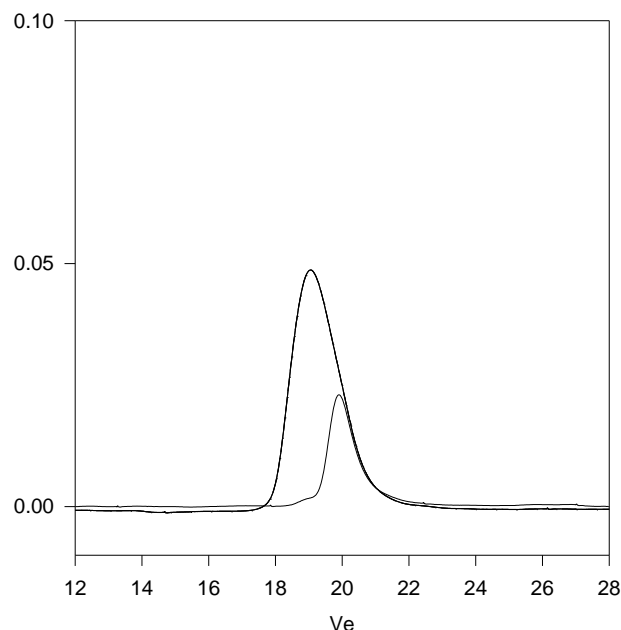
Concentration (mg/mL)	2.3847
Sample dn/dc (mL/g)	0.1850
Method File	PS80-sept2012-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P11079-1-S_2012-09-17_16:20:58_01.v	163,417	171,275	164,569	1.048	1.0235



**P11079B-SMMAS**

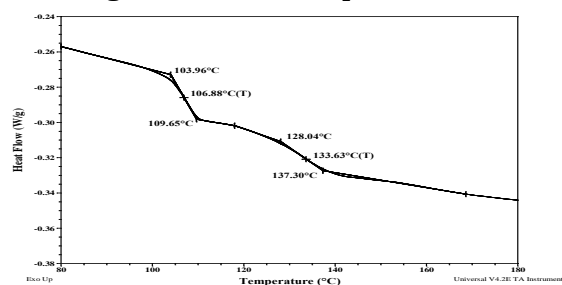


Size Exclusion Chromatography of:

— PSStyrene first block , M<sub>n</sub>=160,000 Mw: 174,000, PI=1.09

PS-b-MMA Mn 160,000-b-191,000 Mw/Mn: 1.35

#### 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.