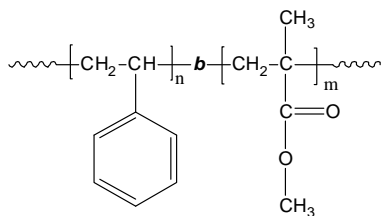


Sample Name: **Poly(Styrene-*b*-Methyl Methacrylate)**  
**(PMMA rich in syndiotactic contents >78%)**

Sample # **P11084F-SMMA**

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> S-b-MMA	PDI
120.0-b-200.0	1.25
T <sub>g</sub> for PS block:	107°C
T <sub>g</sub> for PMMA block:	133°C
dn/dc in THF at 35°C:	0.127

**Synthetic Procedure:**

The block copolymer was prepared by anionic process. For further details please see our published articles.<sup>1-5</sup>

**Characterization:**

Polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI).

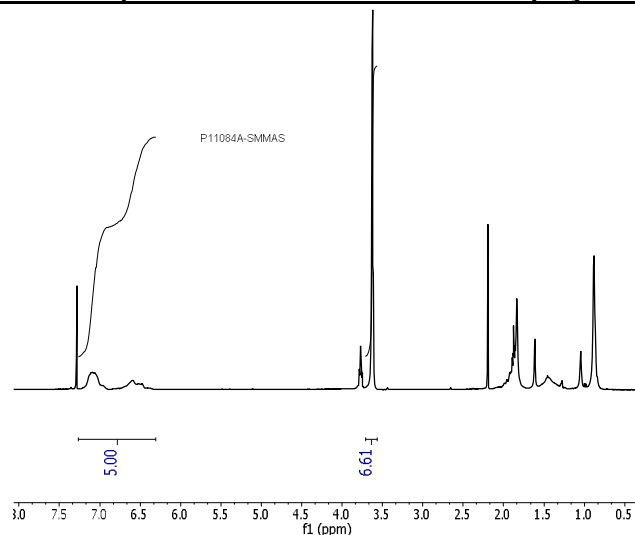
The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the poly(methyl methacrylate) protons (eg. -OCH<sub>3</sub> at 3.6ppm) with of aromatic protons of polystyrene at 6.3–7.2 ppm.

Thermal analysis 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.

**References:**

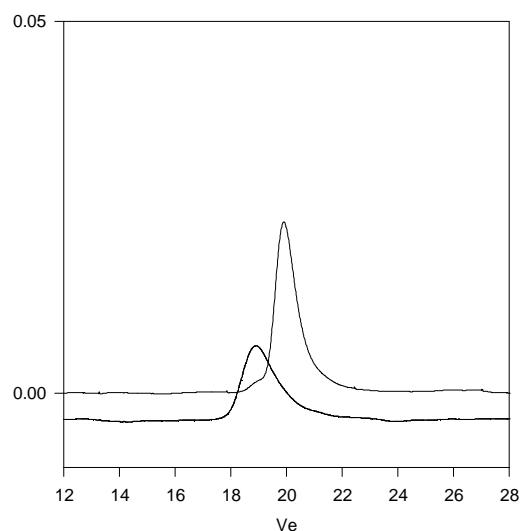
1. S. K. Varshney, R. Fayt, Ph. Teyssie, and J.P. Hautekeer US Patent 5,264,527 (1993)
2. Ph. Teyssie, Ph. Bayard, R. Jerome, S. K. Varshney, and J. S. Wang, *35th IUPAC International Union of Pure & Applied Chemistry International Symposium on Macromolecules* 1994, 67.
3. Ph. Teyssie, R. Fayt, J. P. 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.

**<sup>1</sup>H-NMR spectrum of PS-PMMA diblock copolymer:**



**SEC elugram of PS-PMMA diblock copolymer:**

**P11084F-SMMA**



Size Exclusion Chromatography of:

- PStyrene first block , M<sub>n</sub>=120,000 Mw: 131,000, PI=1.09
- SMMA Diblock PS(120,000)-b-PMMA(200,000) PI=1.25

**DSC thermogram of PS-PMMA diblock copolymer:**

