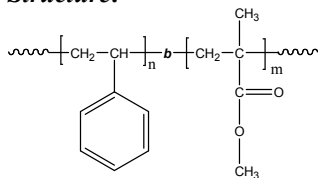


**Sample Name: Poly(styrene-b-methyl methacrylate)**  
**(polymethylmethacrylate rich in syndiotactic contents**  
**> 78%)**

**Sample #: P10437-SMMA**

**Structure:**



**Composition:**

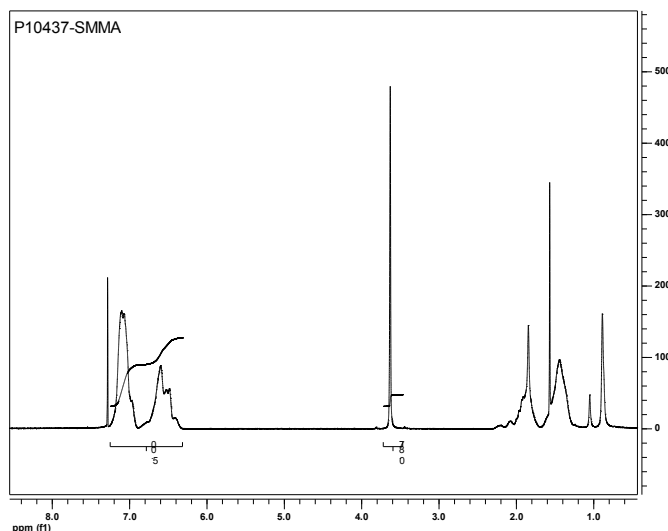
Mn x 10 <sup>3</sup> S-b-MMA	PDI
1,200.0-b-335.0	1.15
T <sub>g</sub> for PS block: 107	T <sub>g</sub> for PMMA block: 130 oC
dn/dc in THF at 35 oC	0.127

**Synthesis Procedure:**

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

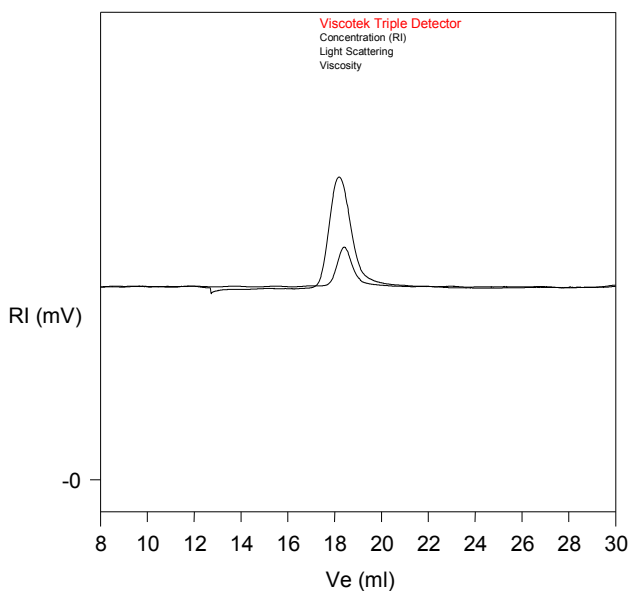
**Characterization:** The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the poly(methyl methacrylate) protons (eg. -OCH<sub>3</sub> at 3.6ppm) with of aromatic protons of polystyrene at 6.3-7.2 ppm. 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:**



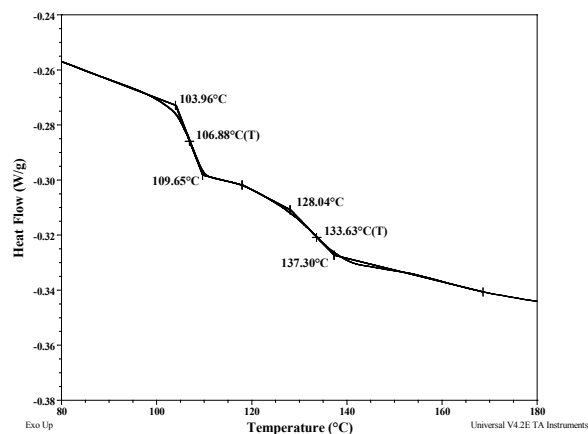
**SEC of Sample -SMMA:**

**P10437-SMMA**



Size Exclusion Chromatography of Poly Styrene-b-MMA

— PS block  $\bar{M}_n = 1,200,000$ ,  $M_w = 1,330,000$ ,  $\bar{M}_w/\bar{M}_n = 1.11$   
 PS-b-MMA:  $\bar{M}_n = 1,200,000$ -b-335,000 PDI: 1.15



**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 *Makromolekulare 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.