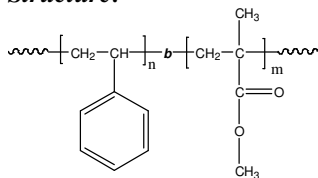


**Sample Name: Poly(styrene-b-methyl methacrylate)**  
**(polymethylmethacrylate rich in syndiotactic contents**  
**> 78%)**

**Sample #: P11057A-SMMA**

**Structure:**



**Composition:**

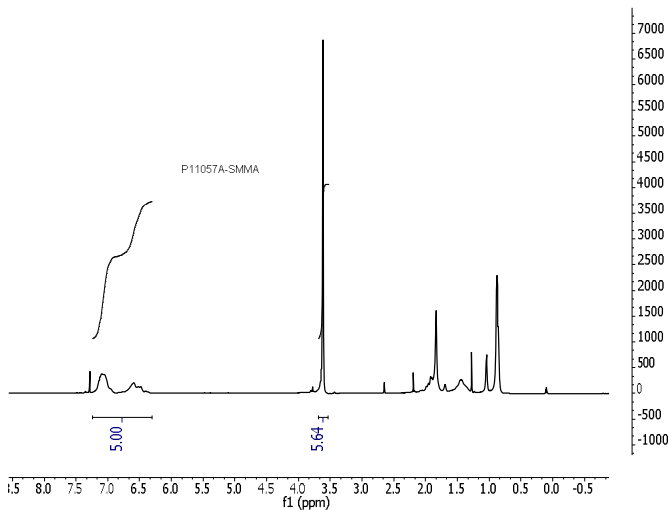
Mn x 10 <sup>3</sup> S-b-MMA	PDI
42.0-b-76.0	1.20
T <sub>g</sub> for PS block: 107	T <sub>g</sub> for PMMA block: 130 oC
dn/dc in THF at 35 oC	0.127

**Synthesis Procedure:**

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

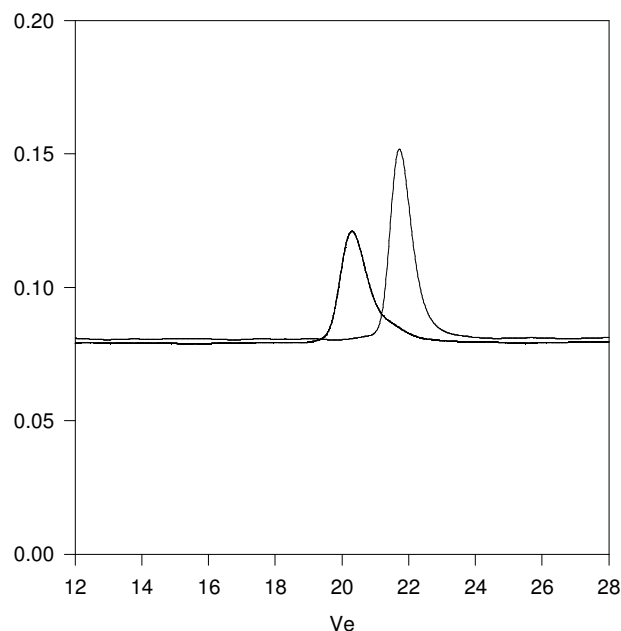
**Characterization:** The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the poly(methyl methacrylate) protons (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:**



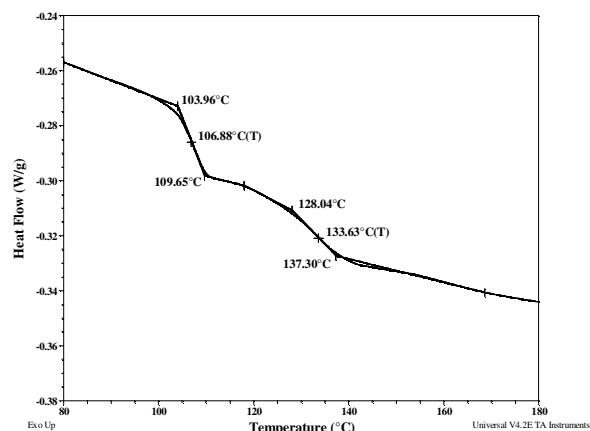
**SEC of Sample -SMMA:**

**P11057A-SMMA**



Size Exclusion Chromatography of:

— PStyrene first block , M<sub>n</sub>=42,000 Mw: 177,000, PI=1.09  
 — SMMA Diblock PS(42,000)-b-PMMA(76,000) PI=1.20



**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.