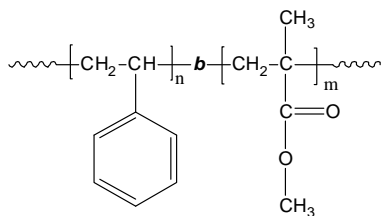


Sample Name: **Poly(Styrene-*b*-Methyl Methacrylate)**
(PMMA rich in syndiotactic contents >78%)

Sample # **P11084B-SMMA**

Structure:



Composition:

Mn x 10 ³ S-b-MMA	PDI
120.0-b-310.0	1.4
T _g for PS block:	107°C
T _g 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.¹⁻⁵

Characterization:

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

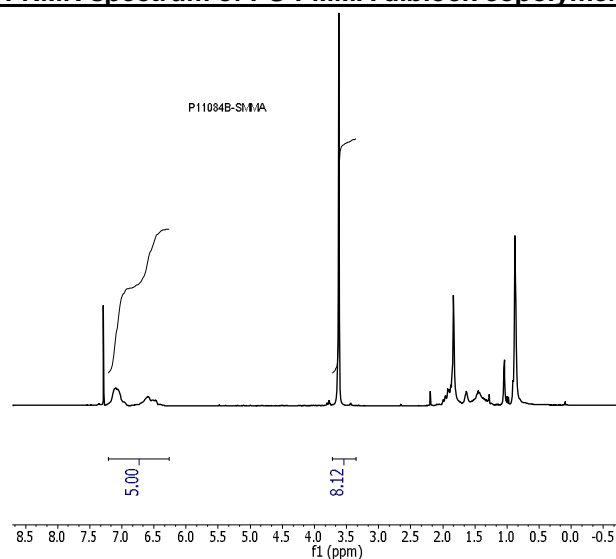
The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the poly(methyl methacrylate) protons (eg. -OCH₃ at 3.6ppm) with of aromatic protons of polystyrene at 6.3–7.2 ppm.

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_g) of the sample has been considered.

References:

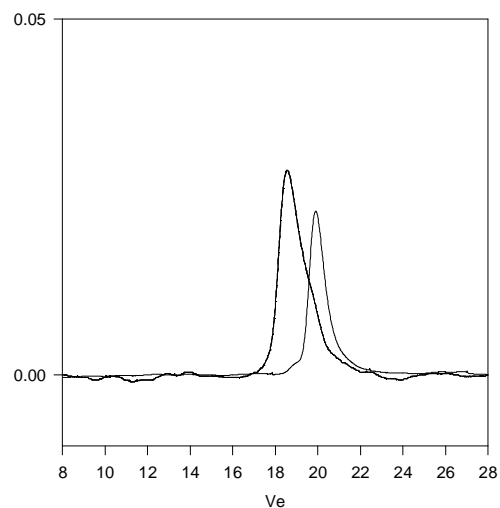
1. S. K. Varshney, R. Fayt, Ph. Teyssie, and J.P. Hautekeer US Patent 5,264,527 (1993)
2. Ph. Teyssie, Ph. Bayard, R. Jerome, S. K. Varshney, and J. S. Wang, *35th IUPAC International Union of Pure & Applied Chemistry International Symposium on Macromolecules* 1994, 67.
3. Ph. Teyssie, R. Fayt, J. P.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

¹H-NMR spectrum of PS-PMMA diblock copolymer:



SEC elugram of PS-PMMA diblock copolymer:

P11084B-SMMA



Size Exclusion Chromatography of:

— PStyrene first block, M_n=120,000 Mw: 131,000, PI=1.09
 — SMMA Diblock PS(120,000)-b-PMMA(310,000) PI=1.4

DSC thermogram of PS-PMMA diblock copolymer:

