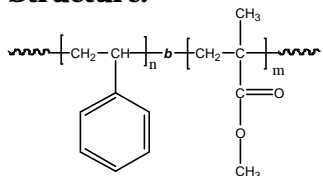


Sample Name: Poly(styrene-b-methyl methacrylate)

(polymethylmethacrylate rich in syndiotactic contents > 78%)

Sample #: P10300-SMMA

Structure:



Composition:

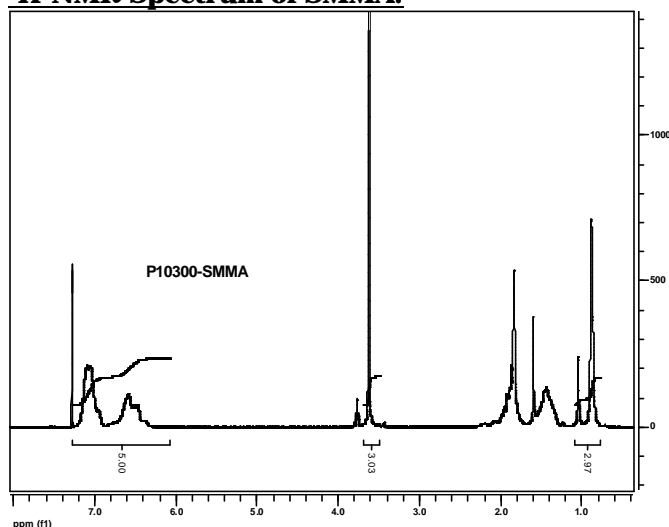
Mn x 10 ³ S-b-MMA	PDI
112.0-b-109.0	1.13
T _g for PS block: 107°C	T _g for PMMA block: 132 °C
Molecular weight Light scattering data	240,000
dn/dc in THF at 35 °C	0.135

Synthesis Procedure:

By anionic process: For further details please see our published articles.¹⁻⁵

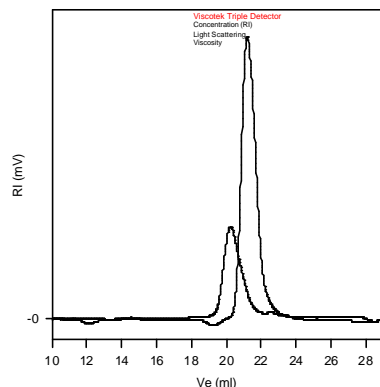
Characterization: Polymer analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the poly(methyl methacrylate) protons (eg. -OCH₃ at 3.6ppm) with of aromatic protons of polystyrene at 6.3-7.2 ppm. 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_g) of the sample has been considered.

¹H-NMR Spectrum of SMMA:



SEC of Sample -SMMA:

P10300-SMMA

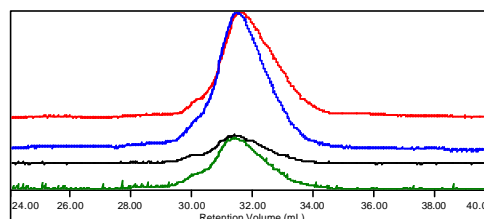


Size Exclusion Chromatography of Poly Styrene-b-MMA

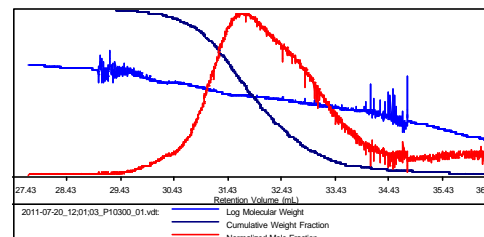
— PS block M_n = 112,000, M_w = 169,500, M_w/M_n = 1.13
PS-b-MMA: M_n = 112,000-b-109,000 PI: 1.13

Sample ID: P10300-SMMA

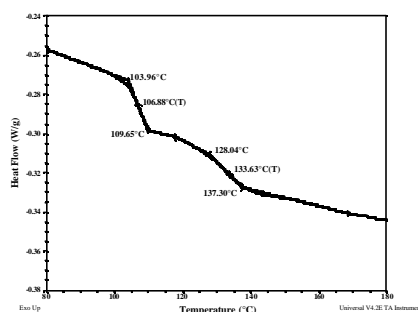
Concentration	1.5800
Sample dn/dc	0.1352
Method File	PS80K-July-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Daltons)	Mw (Daltons)	Mp (Daltons)	Mw/Mn	IV (dl/g)
2011-07-20_12:01:03_P10300_01.vdt	240,313	281,506	272,720	1.171	1.3311



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 *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.