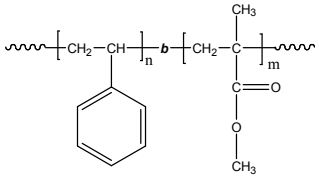
Sample Name: **Poly(styrene-b-methyl methacrylate)**
(polymethylmethacrylate rich in syndiotactic contents > 78%)
Sample #: **P10322-SMMA**

Structure:



Composition:

Mn x 10^3 S-b-MMA	PDI
700.0-b-1300.0	1.25
T_g for PS block: 107°C	T_g for PMMA block: 132 oC
dn/dc in THF at 35 oC	0.107
Mn alues obtained from LS detector on line:	1,600,000

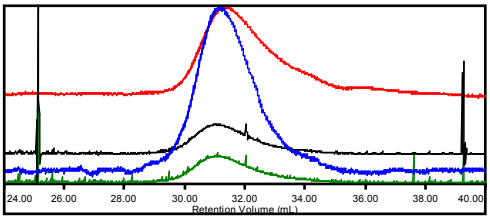
Synthesis Procedure:
By anionic process: For further details please see our published articles.[1-5]
Characterization: Polymer analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ^{1}H-NMR spectroscopy by comparing the peak area of the poly(methyl methacrylate) protons (eg.–OCH_3 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.

^{1}H-NMR Spectrum of SMMA:

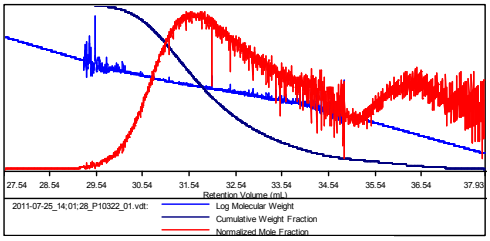
SEC of Sample -SMMA:

Sample ID: P10322

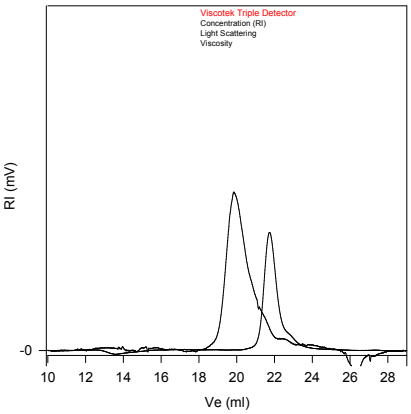
Concentration	0.9580
Sample dn/dc	0.1152
Method File	PS80K-July -0000.v cm
Column Set	3x PL 1113-6300
System	Sy stem 1



Sample	Mn (Daltons)	Mw (Daltons)	Mp (Daltons)	Mw/Mn	IV (dl/g)
2011-07-25_14;01;28_P10322_01.v dt	225,060	334,884	371,398	1.488	1.4264



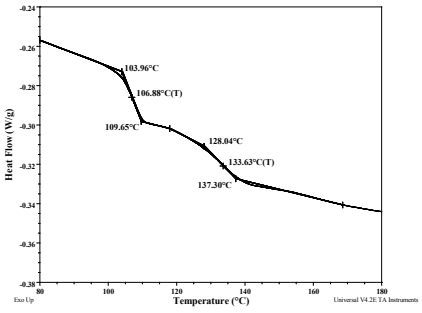
P10322-SMMA



Size Exclusion Chromatography of Poly Styrene-b-MMA

PS block M_n = =75,000, M_w = 81,000, M_w/M_n = 1.08
PS-b-MMA: Mn; =75,000-b-160,000 PI: 1.35

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 *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.*