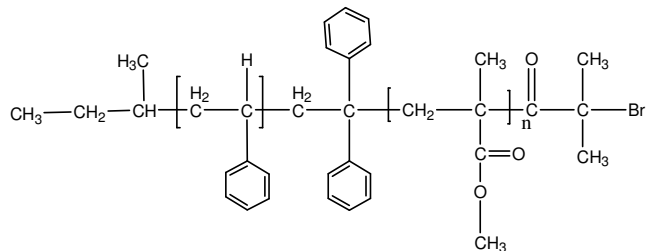


**Sample Name:** Bromo terminated  
Poly(styrene-b-methyl methacrylate) diblock  
copolymer  
(Anionic process ) PMMA : Syndiotactic rich  
Sample #: P18726-SMMA-Br  
Structure:



#### Composition:

$M_n \times 10^3$ (S-b-MMA-Br)	PDI
5.2-b-13.0	1.09
Microstructure of PMMA block	S:H:I contents 78:10:2
$T_g$ for PS block: 100°C	$T_g$ for MMA block: 120 °C

#### Synthesis Procedure:

Poly(styrene-b-methylmethacrylate-b-styrene) is prepared by using anionic and controlled process.

#### Characterization:

The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

#### Thermal analysis:

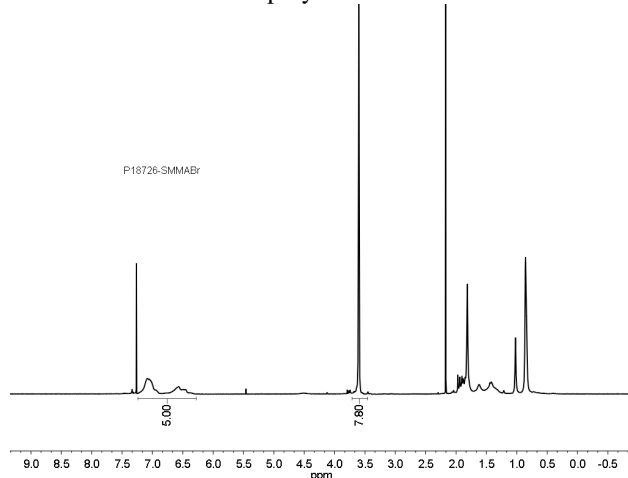
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ( $T_g$ ).

#### Solubility:

Polymer is soluble in THF, toluene and  $CHCl_3$ . It precipitates from methanol, ethanol, water and hexanes.

#### NMR of the initiator:

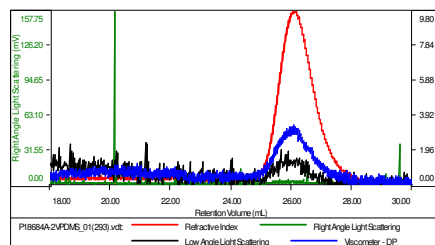
PS-MMA Br diblock copolymer:



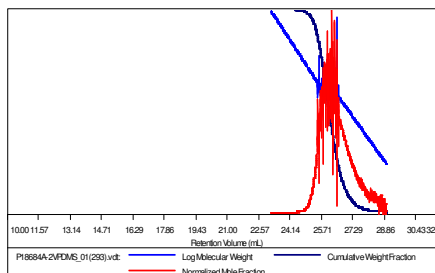
#### SEC of Sample:

Sample ID: P18726-S

Concentration (mg/mL)	1.5292
Sample chn: (mL/g)	0.1850
Method File	PS80K-Apr15-2014-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF

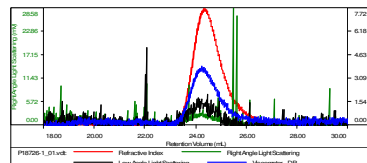


Sample	Mn	Mw	Mp	Mw/Mn	IV
P18684A-2VPDMS_01(293).vdt	5,129	6,703	5,999	1.307	0.0504

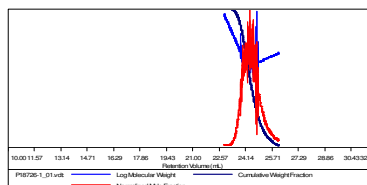


Sample ID: P18726-SMMA

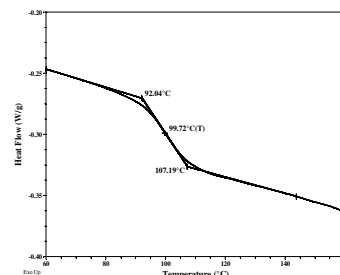
Concentration (mg/mL)	0.9459
Sample chn: (mL/g)	0.1450
Method File	PS80K-Apr15-2014-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18726-1_01.vdt	18,848	20,081	21,845	1.065	0.0851



#### DSC thermogram for MMA block:



#### Reference:

- Zhengji Song, Carole Pelletier, Yinghua, Qi, Jasim Ahmed, Sunil K. Varshney, M. A. Jafar Mazumder, Synthesis and thermal properties of triblock copolymers of methyl methacrylate using combination of anionic and controlled radical polymerization: Poly(methyl methacrylate) center block bearing different microstructures e-polymer 2012, 067.
- S.K. Varshney, P. Kesani, N. Agarwal, J. Xin. Zhang, and M. Rafailovich. Synthesis of ABA type thermoplastic elastomers based on Polyacrylates, Macromolecules, 1999, 32,235.