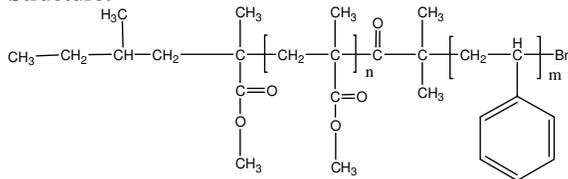


Sample Name: Bromo terminated Poly(methyl methacrylate-b-Styrene) diblock copolymer (Anionic process and controlled radical process)

PMMA : Isotactic rich

Sample #: P40015C-MMAS-Br

Structure:



Composition:

Mn × 10 ³ (MMA-b-S-br)	PDI
10.0-b-45.0	1.4
Microstructure of PMMA block	S:H:I contents 2:10:88
T _g for PS block: 104 °C	T _g for MMA block: Not distinct

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.

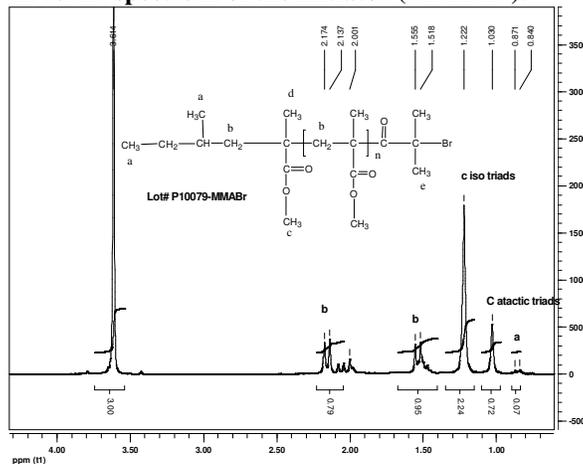
Thermal analysis:

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).

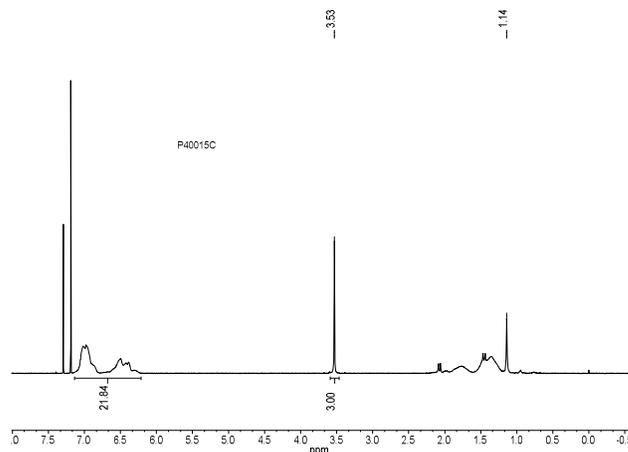
Solubility:

Polymer is soluble in THF, toluene and CHCl₃. It precipitates from methanol, ethanol, water and hexanes.

¹H NMR spectrum of the initiator (MMA Br):



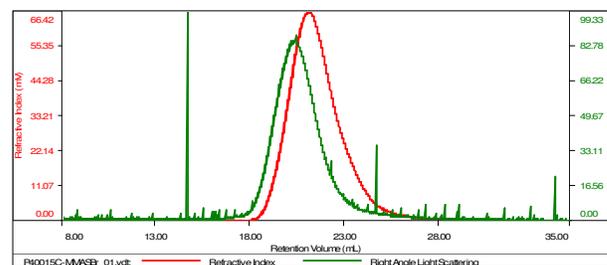
¹H NMR spectrum of the polymer:



SEC elugram of the polymer:

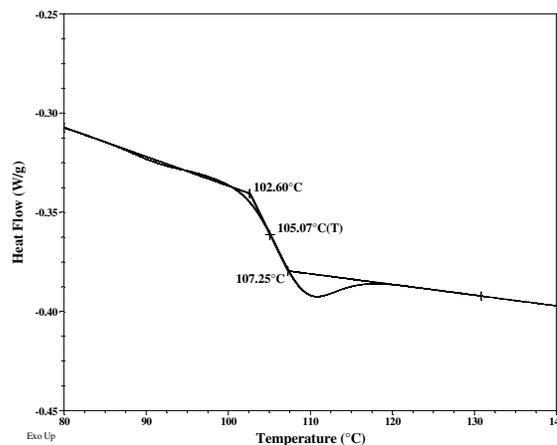
Sample ID: P40015C-MMAS-Br

Concentration (mg/mL)	4.2067
Sample ch/dtc (mL/g)	0.1850
Method File	PS80K-4August2016-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mh (Da)	Mw (Da)	Mw/Mh	IV (dL/g)	Ip (Da)
P40015C-MMASB_01.v	55,706	80,437	1.444	0.3182	69,557

DSC thermogram for PS block:



Reference:

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.