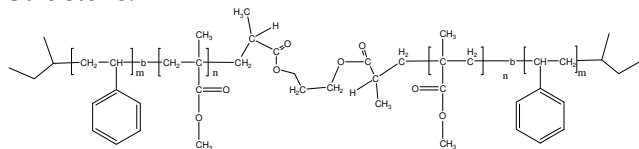


**Sample Name:****Poly(Styrene-b-methyl methacrylate-b-Styrene)****(radical process) PMMA : atactic rich**

Sample #: P11079D-SMMAS

Structure:

**Composition:**

Mn × 10 <sup>3</sup> (S-b-MMA-S)	PDI
120.0-b-512.0-b-120.0	1.15
Microstructure of PMMA block	S:H:I contents 79:18:3
T <sub>g</sub> for PS block: 100 °C	T <sub>g</sub> for MMA block: 116 °C

**Synthesis Procedure:**

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

**Characterization:**

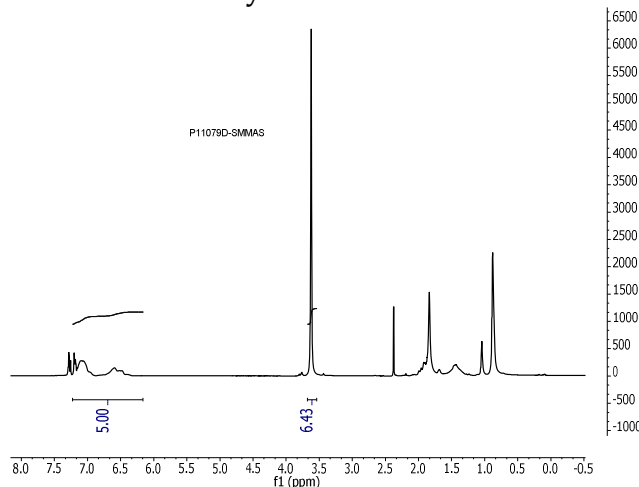
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

**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<sub>g</sub>).

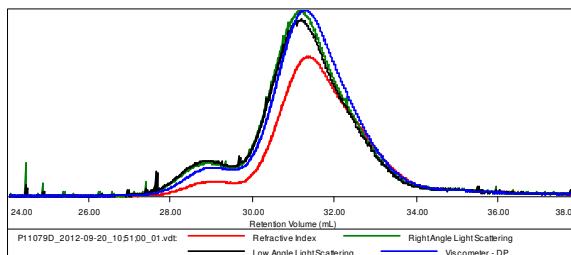
**Solubility:**

Polymer is soluble in THF, toluene and CHCl<sub>3</sub>. It precipitates from methanol, ethanol, water and hexanes.

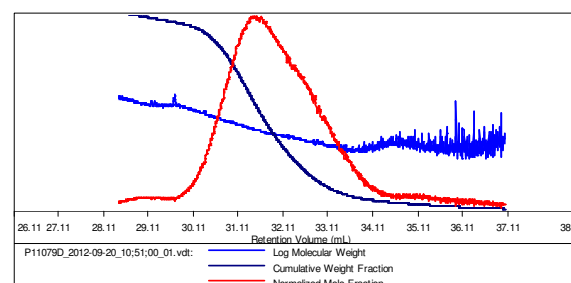
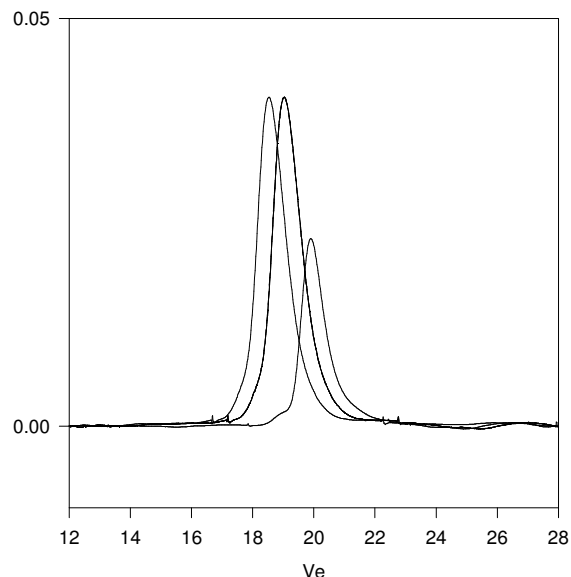
**HNMR of the Polymer:****SEC of Sample:**

Sample ID: P11079D-SMMAS

Concentration (mg/mL)	4.5574
Sample dn/dc (mL/g)	0.1060
Method File	PS80-sept2012-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P11079D_2012-09-20_10:51:00_01.v dt	626,496	676,992	676,772	1.081	1.7977

**P11079D-SMMAS**

Size Exclusion Chromatography of:

- PStyrene first block , M<sub>n</sub>=120,000 Mw: 131,000, PI=1.09
- SMMAS Diblock PS(120,000)-b-PMMA(256,000) PI=1.25
- After Linking reaction and fractionation :
- PS-b-MMA-b-S Mn 120,000-b-512,000-b-120,000 Mw/Mn 1.15

**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.