

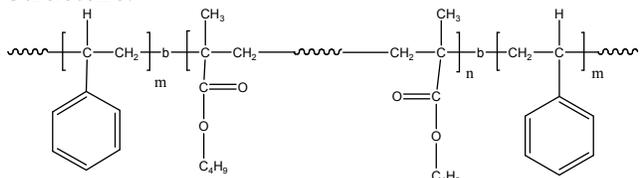
Sample Name:

Poly(Styrene-*b*-methyl methacrylate-*b*-Styrene)

(radical process) PMMA : atactic rich

Sample #: P10046A-SMMAS

Structure:



Composition:

Mn × 10 ³ (S- <i>b</i> -MMA-S)	PDI
2.0- <i>b</i> -190.0- <i>b</i> -2.0	1.2
Microstructure of PMMA block	S:H:I contents 79:10:2
T _g for PS block: Not distinct	T _g for PMMA block: 132 °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.

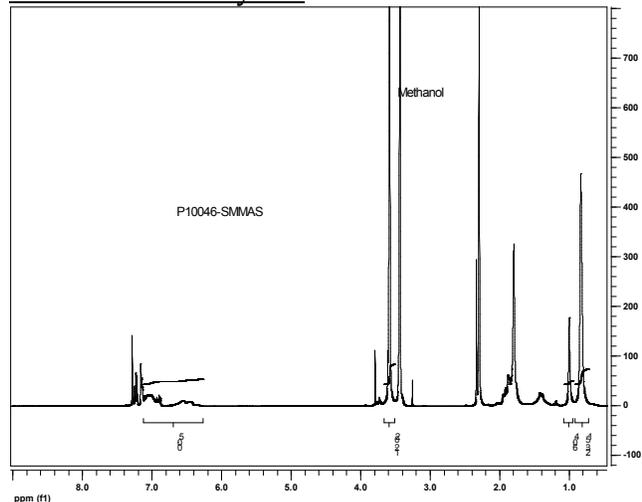
Thermal analysis:

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_g).

Solubility:

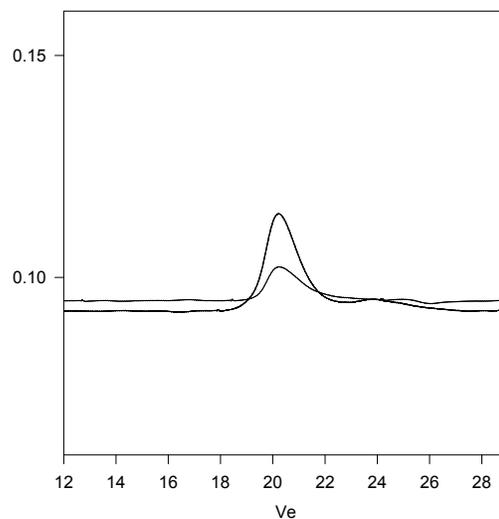
Polymer is soluble in THF, toluene and CHCl₃. It precipitates from methanol, ethanol, water and hexanes.

HNMR of the Polymer



SEC of Sample:

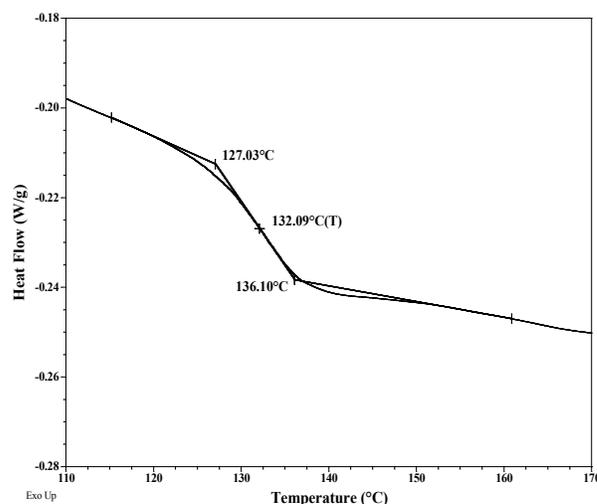
P10046A-SMMAS



Size Exclusion Chromatography of:

— PMMA center block, M_n=190,000, PI=1.2
— SMMAS, the triblock PS(2000)-*b*-PMMA(190,000)-*b*-PS(2000), PI=1.2

DSC thermogram for MMA 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.