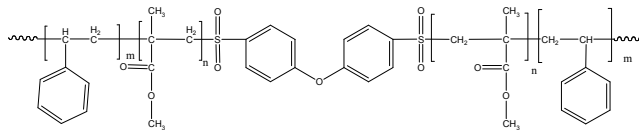


**Sample Name:**

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

Sample #: P10055-SMMAS

Structure:

**Composition:**

Mn × 10 <sup>3</sup> (S- <i>b</i> -MMA- <i>S</i> )	PDI
1.3- <i>b</i> -200.0- <i>b</i> -1.3	1.3
Microstructure of PMMA block	S:H:I contents 55:37:8
T <sub>g</sub> for PS block: Not distinct	T <sub>g</sub> for MMA block: 110 °C

**Synthesis Procedure:**

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

**Characterization:**

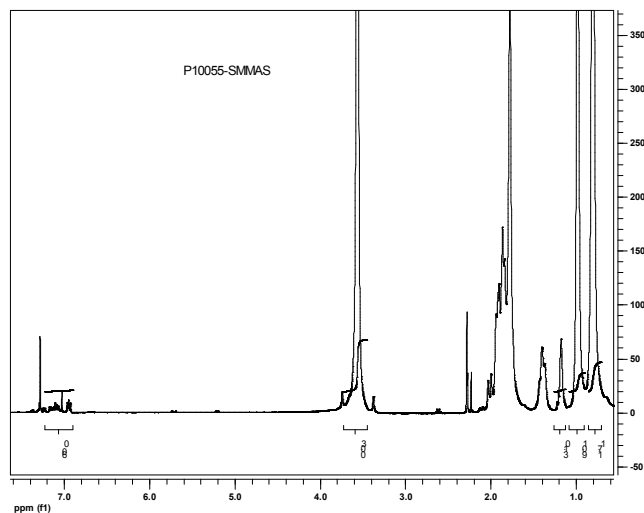
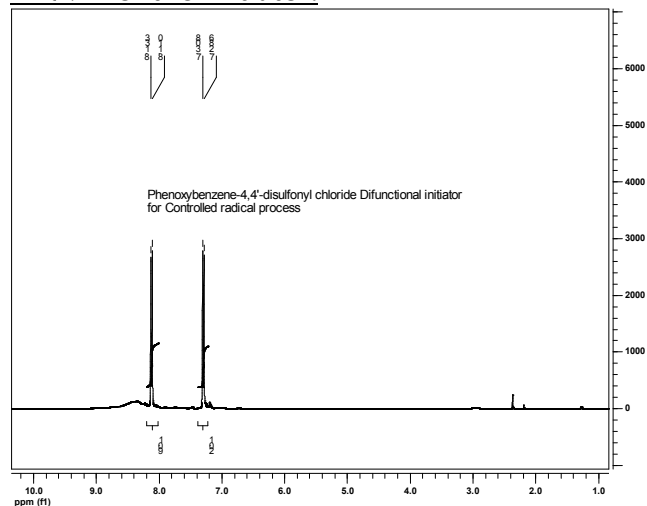
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

**Thermal analysis:**

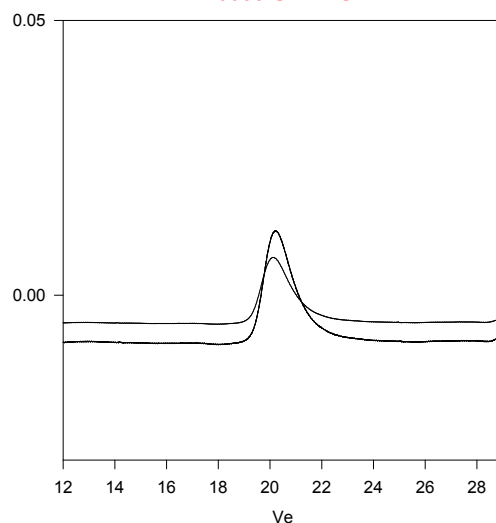
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T<sub>g</sub>).

**Solubility:**

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

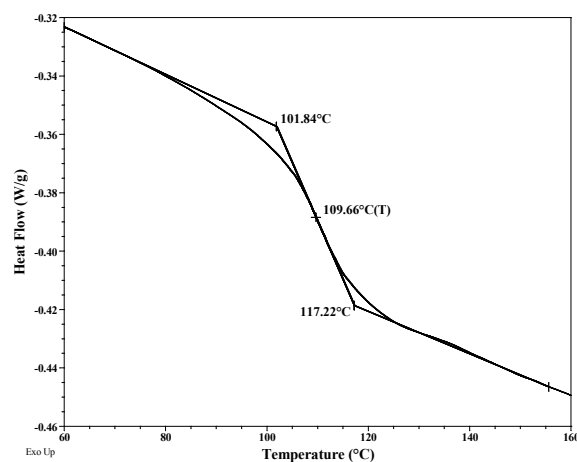
**HNMR of the initiator:****SEC of Sample:**

**P10055-SMMAS**



Size Exclusion Chromatography of:

— PMMA center block, M<sub>n</sub> ≈ 200,000, PI = 1.3  
— SMMAS, the triblock PS(1,300)-*b*-PMMA(200,000)-*b*-PS(1,300), PI = 1.3

**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.