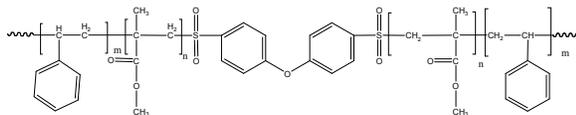


Sample Name:

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

Sample #: P9983A-SMMAS

Structure:



Composition:

Mn × 10 ³ (S-b-MMA-S)	PDI
34.0-b-45.0-b-34.0	1.9
Microstructure of PMMA block	S:H:I contents 55:37:8
T _g for PS block: 106 °C	T _g for MMA block: 127 °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.

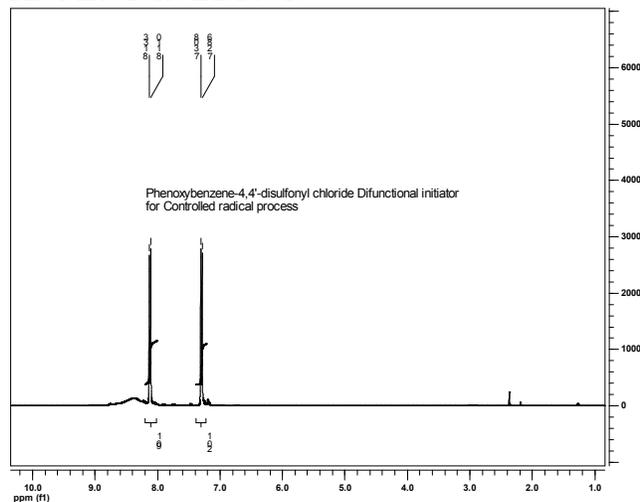
Thermal analysis:

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).

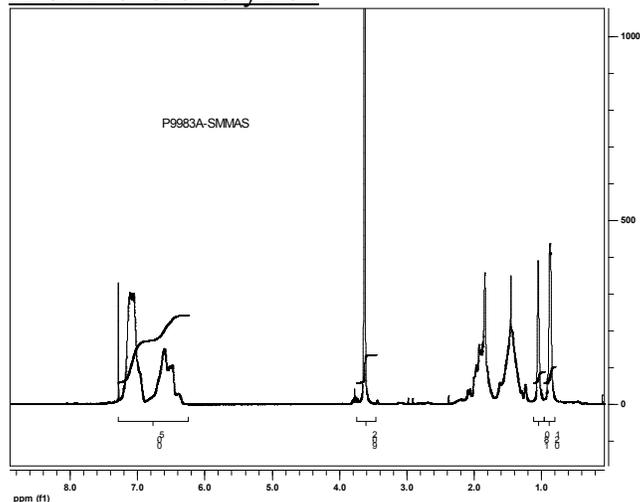
Solubility:

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

HNMR of the initiator:

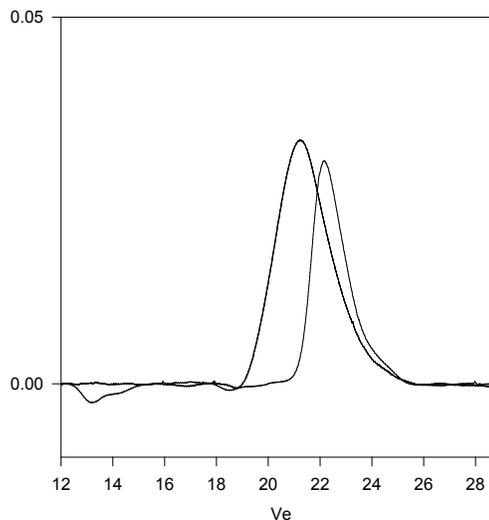


HNMR of the Polymer:



SEC of Sample:

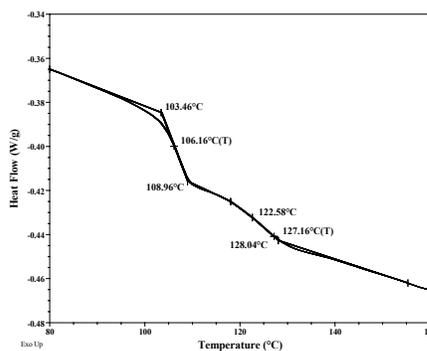
P9983A-SMMAS



Size Exclusion Chromatography of:

— PMMA center block, M_n=45000, PI=1.4
— SMMAS, the triblock PS(34000)-b-PMMA(45000)-b-PS(34000), PI=1.9

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.