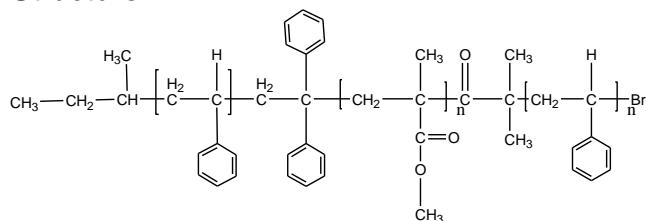


**Sample Name:** Unsymmetrical  
**Poly(Styrene-b-methyl methacrylate-b-Styrene)**  
**triblock copolymer**  
**(Anionic process ) PMMA : Syndiotactic rich**  
**Sample #:** P10061A-SMMAS  
**Structure:**



#### Composition:

Mn × 10 <sup>3</sup> (S-b-MMA-S)	PDI
7.0-b-9.0-b-3.8	1.18
Microstructure of PMMA block	S:H:I contents 78:10:2
T <sub>g</sub> for PS block: 102 °C	T <sub>g</sub> for MMA block: 118 °C

#### 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:

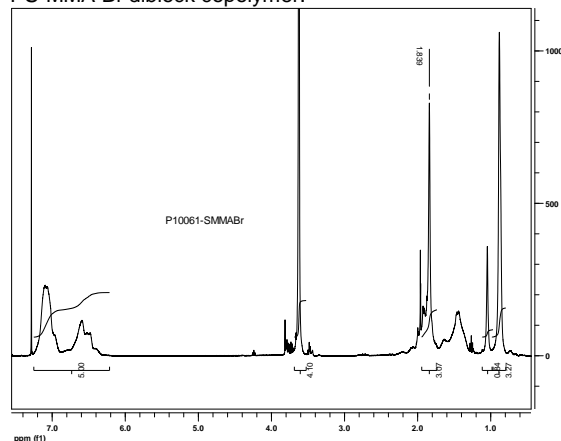
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T<sub>g</sub>).

#### Solubility:

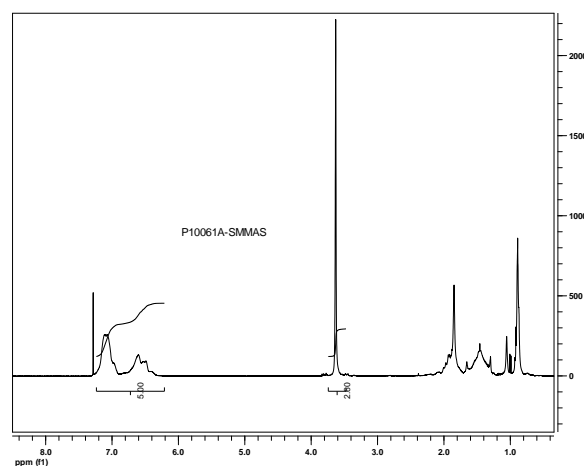
Polymer is soluble in THF, toluene and CHCl<sub>3</sub>. It precipitates from methanol, ethanol, water and hexanes.

#### NMR of the initiator:

PS-MMA Br diblock copolymer:

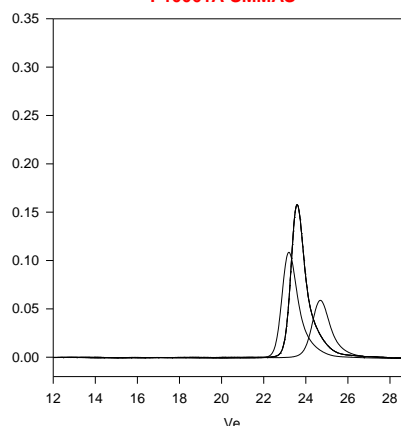


#### PSMMAS triblock:



#### SEC of Sample:

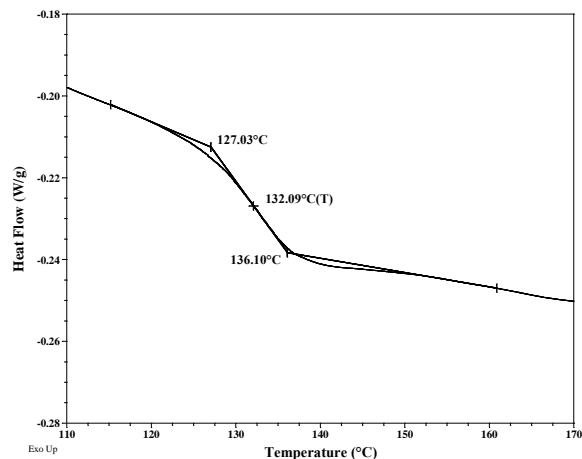
P10061A-SMMAS



Size Exclusion Chromatography of:

— PS first block, M<sub>n</sub>=7,000 Mw: 8000 PI=1.15  
 — SMMAS, the Diblock PS(7,000)-b-PMMA(9000) PI=1.15  
 — AMMAS triblock : Ps(7,000)-b-PMMA(9,000)-b-PS(3,800) Mw/Mn : 1.18

#### 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.