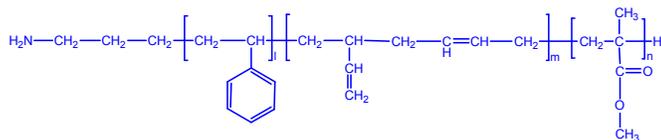


Sample Name:

Amino terminated Polystyrene-b-butadiene (rich in 1,2-addition)-b-methylmethacrylate)

Sample #: P11138M-NH2-SBdMMA

Structure:



Composition:

Mn x 10 ³		PDI
NH2-S-b-Bd-b-MMA		
35.0-b-13.0-b-26.0		1.6
T _g for PS block 100 oC	T _g for Bd block Not clear	T _g for MMA block 132°C

Synthesis Procedure:

The triblock polymer is synthesized by living anionic polymerization with sequence addition of styrene, butadiene (Bd), followed by methyl methacrylate (MMA). Amino protected lithium based initiator was used. For details you may read our published work.

Varshney, S. K.; Song, Z.; Zhang, Jian-Xin.; Jerome, Robert. Rapid Communication; J. Polym. Sci. Part A, 2006, 44, 3400.

Characterization:

Size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF as the eluent. The molecular weights and the polydispersity index were calculated.

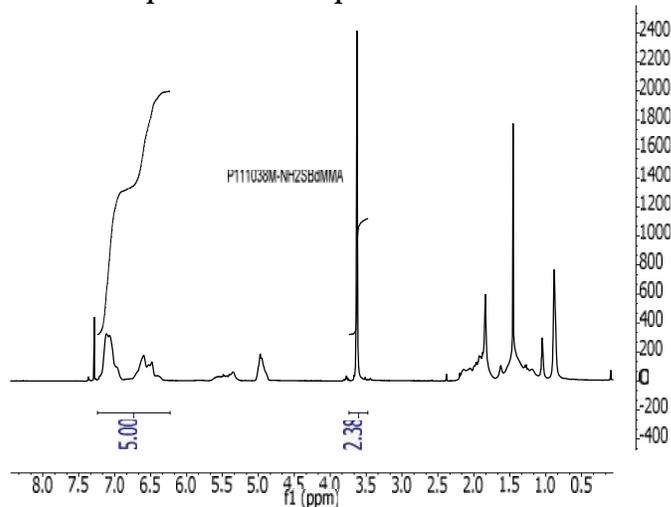
Thermal analysis:

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:

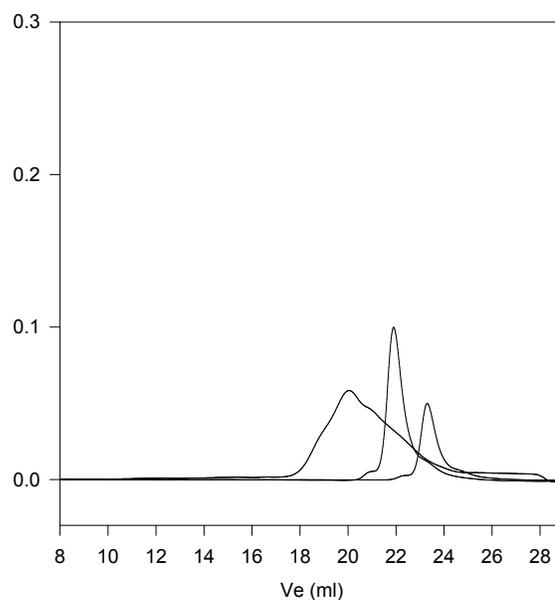
Polymer is soluble in THF, toluene, acetone and CHCl₃. The polymer readily precipitates from hexanes, ether and water.

¹H-NMR Spectrum of the product



SEC of the polymer:

P11138M-NH2SBdMMA



Size exclusion chromatography of
NH2-polystyrene-b-butadiene_(1,2 rich addition)

- First bioPoly styrene, M_n=35,000, M_w=37,800, PI=1.08
- Poly(styrene-b- polybutadiene):PS(35,000)-b-PBd(13,000), PI=1.13
- Poly(styrene-b-Polybutadiene-b-MMA) Mn: 35,000-b-13,000-b-26,000
Mw/Mn : 1.6