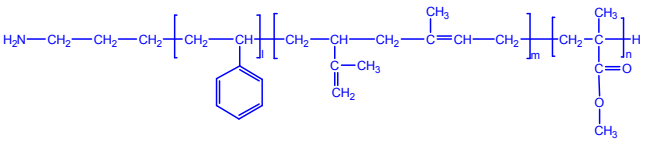
Sample Name:

Amino terminated Polstyrene-b-Isoprene (rich in 1,2addition)-b-methylmethacrylate)

Sample #: P11142F-NH2-SIpMMA

Structure:



Composition:

Mn x 10^3 NH2-S-b-Ip-b-MMA	PDI	
60.0-b-25.0-b-313.0	1.34	
T_g for PS block 100 oC	T_g for Ip block Not clear	T_g for MMA block 132^{o}C

Synthesis Procedure:

The triblock polymer is synthesized by living anionic polymerization with sequence addition of styrene, isoprene (Ip), 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.

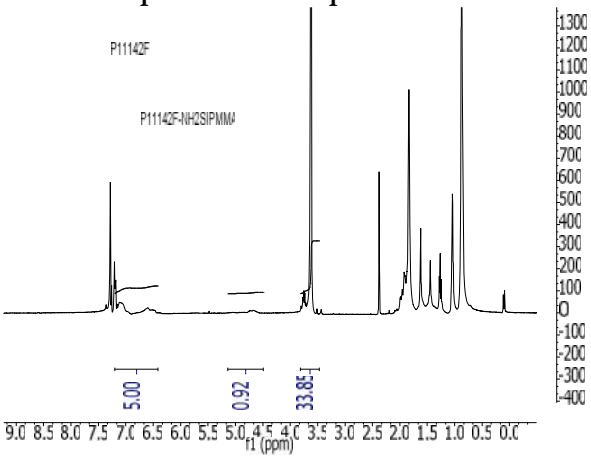
Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10^{o}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 $CHCl_3$. The polymer readily precipitates from hexanes, ether and water.

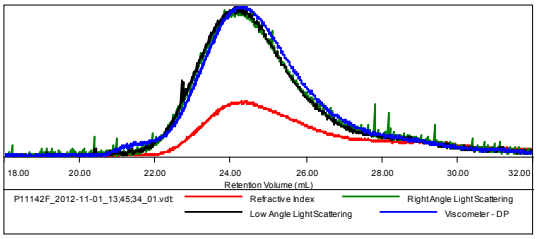
^{1}H-NMR Spectrum of the product



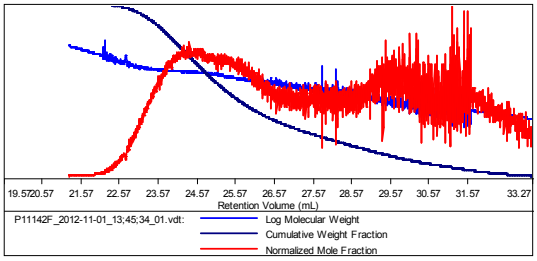
SEC of the polymer:

Sample ID: P11142F

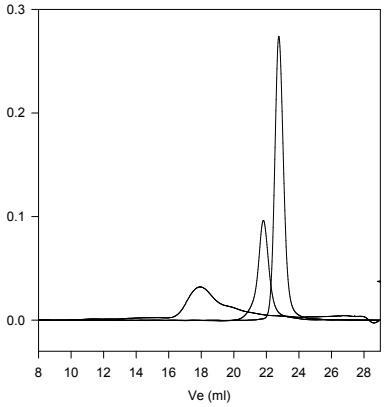
Concentration (mg/mL)	1.2102
Sample dn/dc (mL/g)	0.1050
Method File	PS80K-Oct-2012-0002.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P11142F_2012-11-01_13;45;34_01.vdt	398,707	531,454	687,409	1.333	1.5845



P11142F-NH2SIPMMA



Size exclusion chromatography of NH2 -polystyrene-b-isoprene$_{(1,2\ rich\ addition)}$-MMA

First block Poly styrene, M_n=60,000, M_w=64.800, PI=1.08

Poly(styrene-b- Isoprene):PS(60,000)-b-PIp(25,000), PI=1.12

Poly(styrene-b-isoprene-b-MMA) Mn: 60,000-b-25,000-b-313,000

Mw/Mn : 1.34