

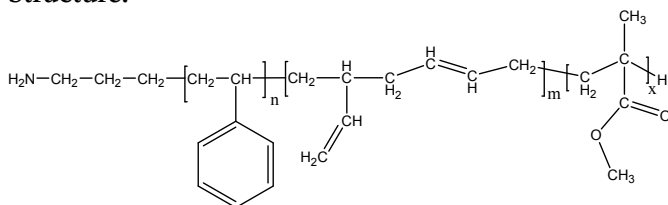
### Sample Name:

Amino terminated Polystyrene-b-butadiene (rich in

1,2-addition)-b-methylmethacrylate)

Sample #: P11135-NH2-SBdMMA

### Structure:



### Composition:

Mn x 10 <sup>3</sup>		PDI	
NH2-S-b-Bd-b-MMA		1.20	
30.0-b-14.0-b-172.0		1.20	
T <sub>g</sub> for PS block 100 °C	T <sub>g</sub> for Bd block Not clear	T <sub>g</sub> 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.

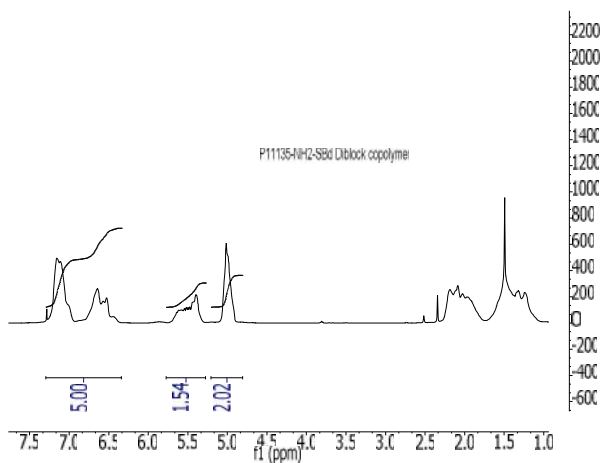
1. Varshney, S. K.; Song, Z.; Zhang, Jian-Xin.; Jerome, Robert. Rapid Communication; J. Polym. Sci. Part A, 2006, 44, 3400.

**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.

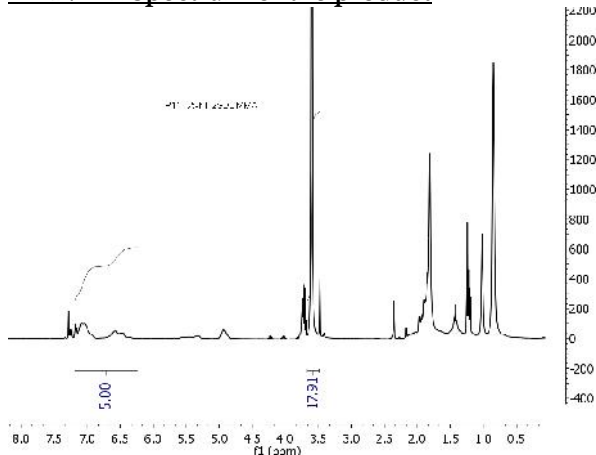
### Solubility:

Polymer is soluble in THF, toluene, acetone and CHCl<sub>3</sub>. The polymer readily precipitates from hexanes, ether and water.

### <sup>1</sup>H NMR of the NH2-SBd diblock copolymer



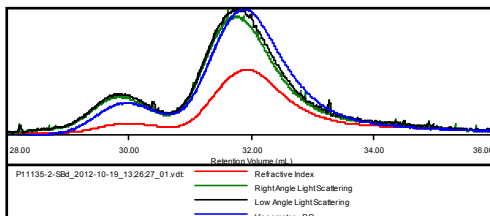
### <sup>1</sup>H-NMR Spectrum of the product



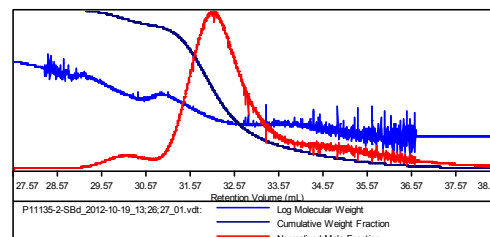
### SEC of the polymer: SBd diblock copolymer

Sample ID: P11135-2-SBd

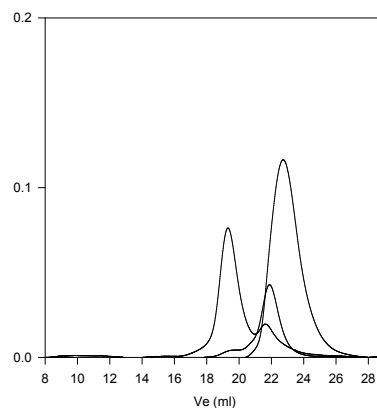
Concentration (mg/mL)	4.3020
Sample dn/dc (mL/g)	0.1700
Method File	PS80K-Oct-2012-0002.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P11135-2-SBd_2012-10-19_13,26,27_01.vdt	44,958	51,740	46,418	1.151	0.6189



P11135-NH2SBdMMA



Size exclusion chromatography of  
NH2 -polystyrene-b-butadiene<sub>(1,2 rich addition)</sub>

— First bloPoly styrene, M<sub>n</sub>=30,000, M<sub>w</sub>=38,000, PI=1.28

— Poly(styrene-b- polybutadiene):PS(30,000)-b-PBd(14,000), PI=1.2

— Poly(styrene-b-Polybutadiene-b-MMA) Mn: 30,000-b-14,000-b-172,000

Mw/Mn : 1.30