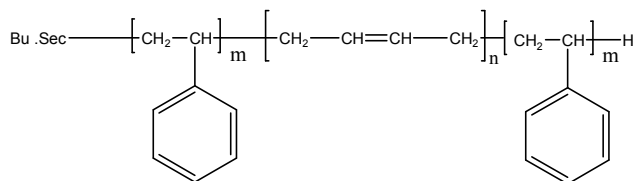


Sample Name:

Poly(Styrene-b-butadiene-b-Styrene)

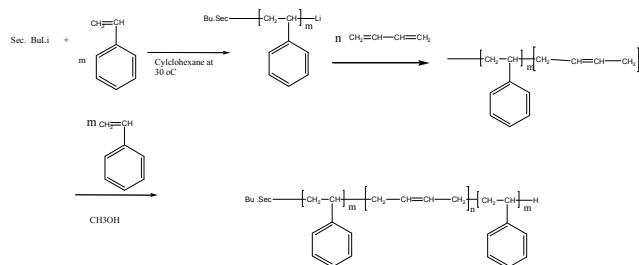
Poly butadiene rich in 1,4 microstructure

Sample #: P2867-SBdS**Structure:****Composition:****Composition:**

Mn x 10 ³ (S-b-Bd-S)	PDI
46.0-b-111-b-46.0	1.10
T _g for PBd block	-18°C
T _g for PS block	95°C

Synthesis Procedure:

Poly(styrene-b-butadiene-b-styrene) is prepared by living anionic polymerization with sequence addition of styrene followed by butadiene and then styrene again. The scheme of the reaction is illustrated below:

**Characterization:**

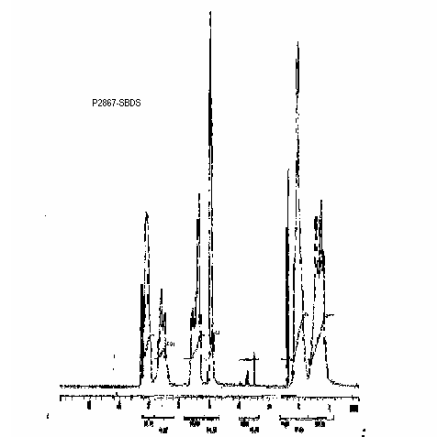
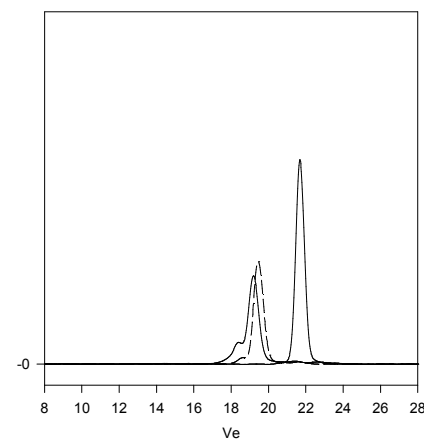
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

Thermal analysis

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 20°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 hexane (depending on the compositions).

¹H NMR of the Polymer:**SEC of Sample:****P2867SBdS**

Size Exclusion Chromatography of:

- PS, first PS block, M_n=46000, PI=1.05
- - - SBd, the diblock PS(46000)-b-PBd(111000), PI=1.07
- SBdS, triblock PS(46000)-b-PBd(111000)-b-PS(46000), PI=1.10

Thermogram for Bd and PS block polymers: