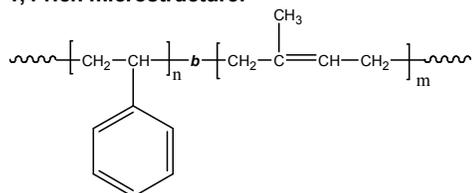


Sample Name: Poly(styrene-b-isoprene)
(Polyisoprene rich in 1,4-addition)

Sample #: P4014-Slp

1,4-rich microstructure:

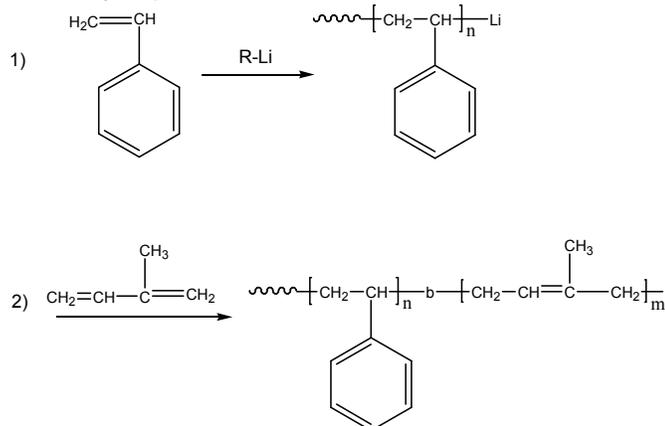


Composition:

Mn x 10 ³ S-b-Ip	PDI
72.0-b-13.0	1.05

Synthesis Procedure:

Poly(styrene-b-isoprene) is prepared by living anionic polymerization in non-polar solvent with sequence addition of styrene followed by isoprene. The scheme of the reaction is illustrated below:



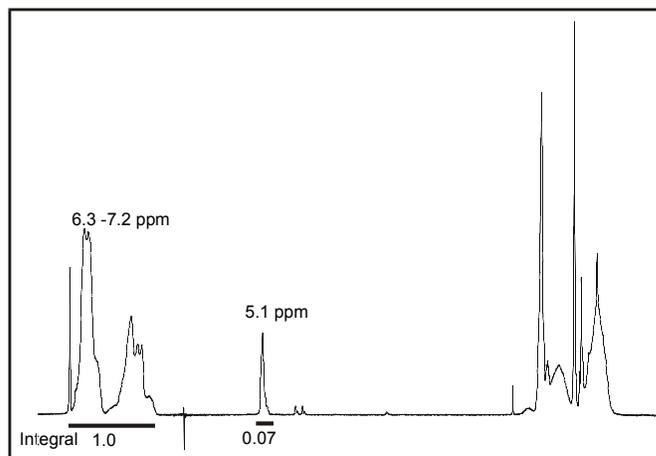
Characterization:

An aliquot of the anionic polystyrene block was terminated before addition of isoprene and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The block copolymer composition was then calculated from ¹H-NMR spectroscopy by comparing the peak area of the vinylic isoprene proton at 5.1 ppm with the aromatic protons of polystyrene at 6.3-7.2 ppm. Copolymer PDI is determined by SEC.

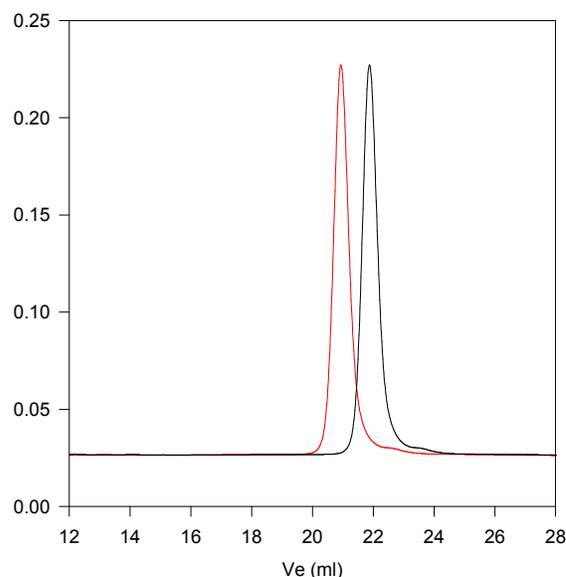
Solubility:

Poly(styrene-b-isoprene) is soluble in THF, toluene, dioxane and CHCl₃. This polymer readily precipitates from methanol, ethanol, hexanes and water.

¹H-NMR Spectrum of P4014-Slp:



SEC of Sample P4014-Slp:



Size exclusion chromatography of polystyrene-b-polyisoprene

- Polystyrene, M_n=72000, M_w=75000, PI=1.04
- Block Copolymer PS(72000)-b-PIp(13000), PI=1.05
Composition from H NMR