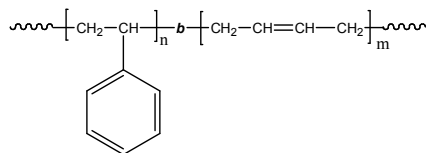


**Sample Name:** Poly (styrene-b-1,4-butadiene)

**Sample #:** P40173-SBd

**Structure:**

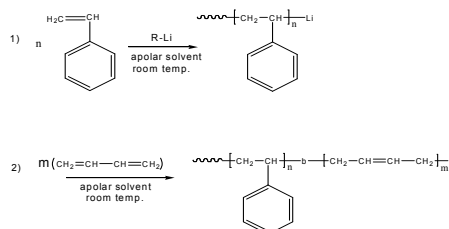


**Composition:**

Mn x 10 <sup>3</sup> S-b-Bd (k)	PDI
140.0-b-123.0	1.15

**Synthesis Procedure:**

Poly(styrene-b-butadiene) rich in 1,4 addition polybutadiene is prepared by living anionic polymerization with sequence addition of styrene followed by butadiene (Bd) in an apolar solvent such as cyclohexane, benzene or in toluene. The scheme of the polymerization reaction is illustrated below:



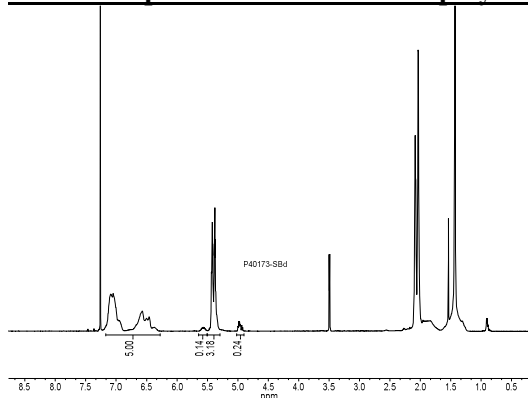
**Characterization:**

The polymer was characterized by <sup>1</sup>H NMR and size exclusion chromatography (SEC).

**Solubility:**

Poly (styrene-b-butadiene) is soluble in toluene, cyclohexane, benzene, THF, dioxane and CHCl<sub>3</sub>. This polymer readily precipitates from methanol, ethanol, and water.

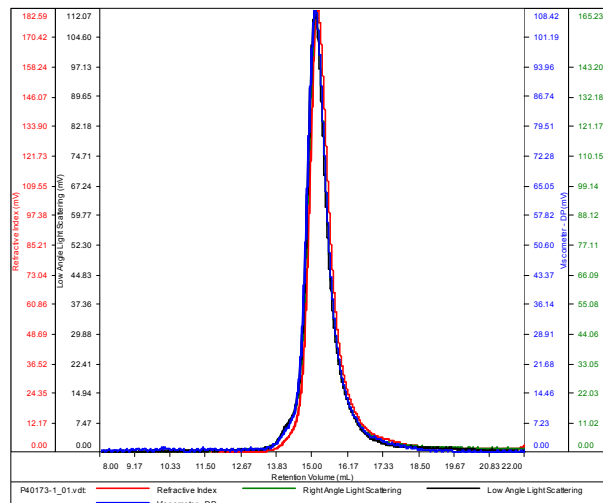
**<sup>1</sup>H-NMR Spectrum of the block copolymer:**



**SEC of the block copolymer:**

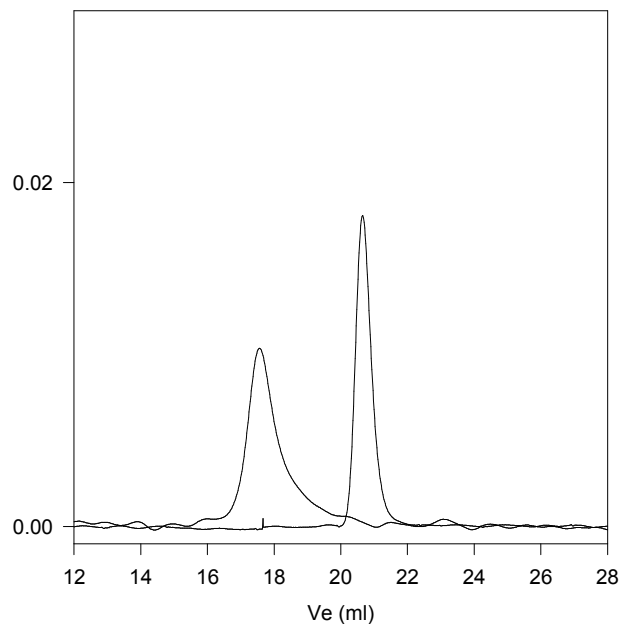
**P40173-S**

Conc (mg/mL)	2.4876
dn/dc (mL/g)	0.1650
Method	PS80K-October2016-0000.vcm
Solvent	DMF w 0.023M LiBr
Column	PSS



Sample	Mn	Mw	Mp	Mw/Mn	IV
P40173-1_01.vdt	140,197	147,573	143,604	1.053	0.8968

**P40173-SBd**



Size exclusion chromatography of polystyrene-b-polybutadiene

— Polystyrene, M<sub>n</sub>=140,000, M<sub>w</sub>=147,000, PI=1.05

— Block Copolymer PS(140,000)-b-PBd(123,000), PI=1.15

(v.R-01)