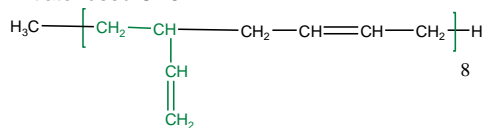


Sample Name: Polybutadiene
(rich in 1,2 microstructure)
(1,2=82% , 1,4 = 18%)

Sample #: P18505-Bd

Initiator used CH₃Li

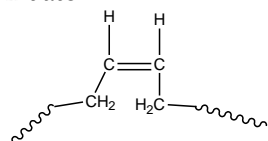


Composition:

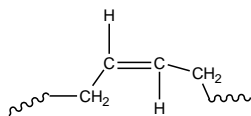
Mn x 10 ³	PDI
4.5	1.13

Synthesis Procedure:

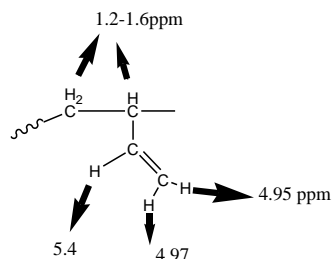
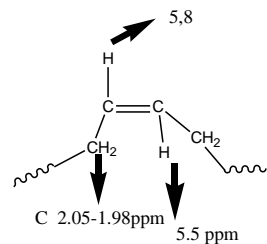
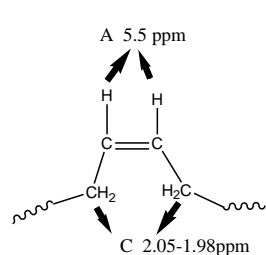
Polybutadiene (1,2-rich) is obtained by living anionic polymerization in THF. Using Sec. BuLi initiator.



Cis 1,4 addition



Trans 1,4 addition

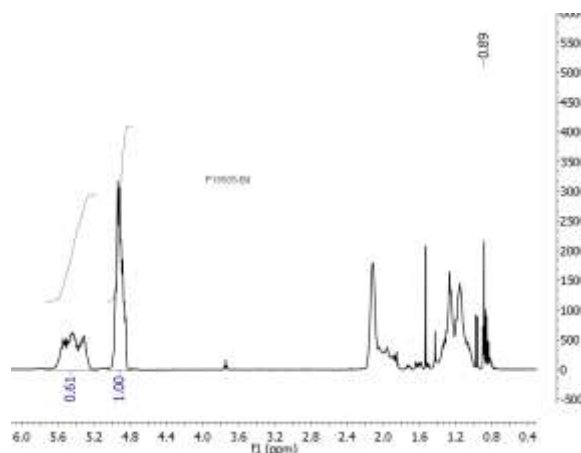


Characterization:

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

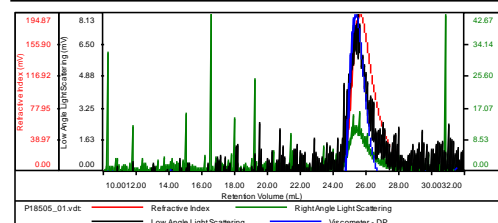
Polymer microstructure can be confirmed by ¹H-NMR where the spectrum of 1,2-polybutadiene contains of 1 vinylic proton signal at 5.4 ppm and

2 vinylic protons at 5.0 ppm but the spectrum of 1,4-polybutadiene only contains vinylic signals at 5.4 ppm.



Sample ID: P18505-Bd rich in 1,2 addition

Concentration (mg/mL)	7.0159
Sample dn/dc (mL/g)	0.1270
Method File	PS80K-Feb10-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18505_01.vdt	4,531	5,114	5,038	1.129	0.1112

