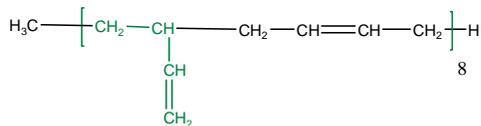


Sample Name: Polybutadiene
(rich in 1,2 microstructure)
(1,2=82% , 1,4 = 18%)

Sample #: P18482-Bd

Initiator used CH3Li

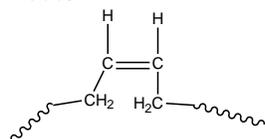


Composition:

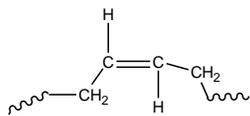
Mn x 10 ³	PDI
3.3	1.22

Synthesis Procedure:

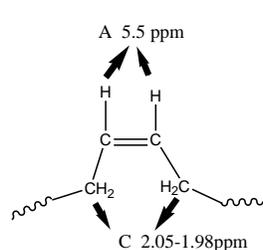
Polybutadiene (1,2-rich) is obtained by living anionic polymerization in THF. Using Sec. BuLi initiator.



Cis 1,4 addition

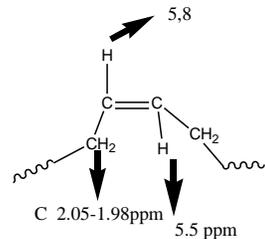


Trans 1,4 addition



A 5.5 ppm

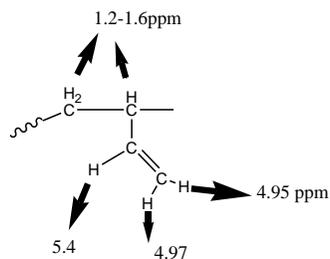
C 2.05-1.98ppm



5,8

C 2.05-1.98ppm

5.5 ppm



1.2-1.6ppm

4.95 ppm

5.4

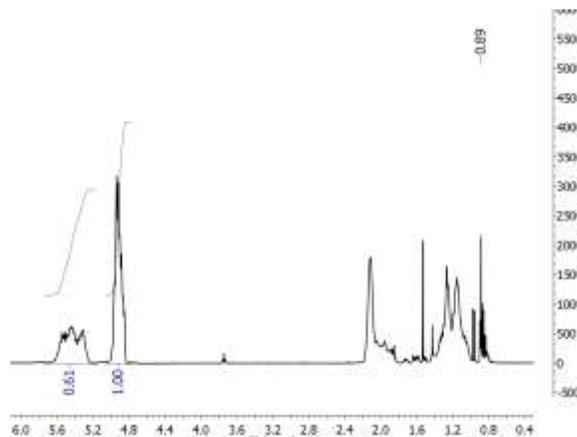
4.97

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.

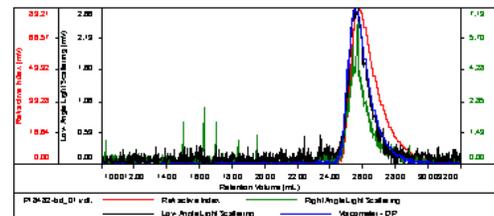
Polymer microstructure can be confirmed by ¹H-NMR where the spectrum of 1,2-polybutadiene contains of 1 vinylic proton signal at 5.4 ppm and

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



Sample ID: P18482-Bd

Concentration (mg/mL)	3.6003
Sample dn/dc (mL/g)	0.1270
Method File	PSSDK-Fe10-2014-0000.ucm
Column Set	3: PL 1113-6300
System	Style 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18482-bd_01.udt	3,320	4,039	4,309	1.216	0.2327

