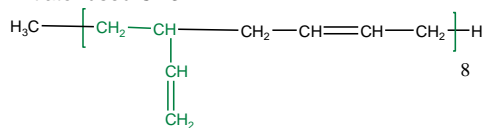


**Sample Name: Polybutadiene**  
**(rich in 1,2 microstructure)**  
**(1,2=82% , 1,4 = 18%)**

**Sample #: P18482-Bd**

Initiator used CH<sub>3</sub>Li

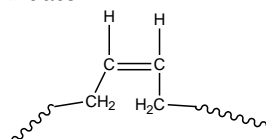


### Composition:

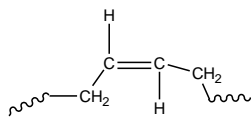
Mn x 10 <sup>3</sup>	PDI
3.3	1.22

### Synthesis Procedure:

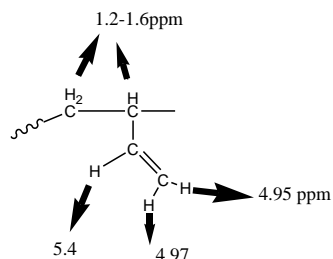
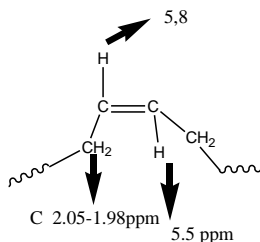
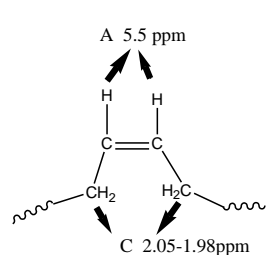
Polybutadiene (1,2-rich) is obtained by living anionic polymerization in THF. Using Sec. BuLi initiator.



Cis 1,4 addition



Trans 1,4 addition

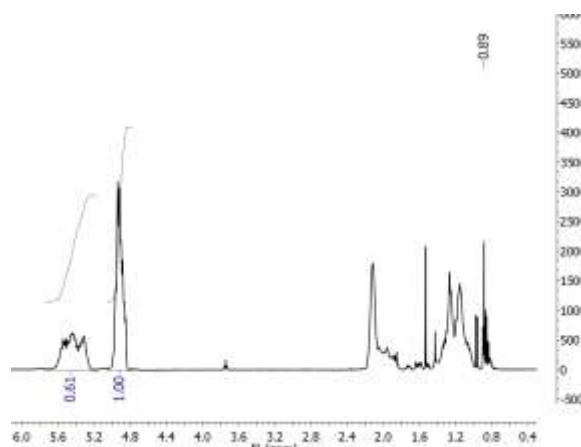


### Characterization:

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.

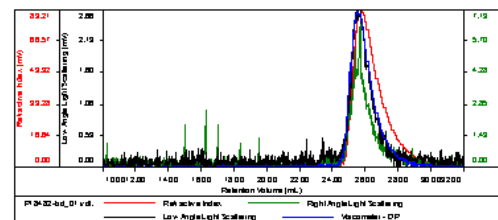
Polymer microstructure can be confirmed by <sup>1</sup>H-NMR where the spectrum of 1,2-polybutadiene contains of 1 vinylic proton signal at 5.4 ppm and

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	P580 K-Feb10-2014-0000.ucm
Column Set	3: PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18482-bd_01.udt	3,320	4,039	4,909	1.216	0.2327

