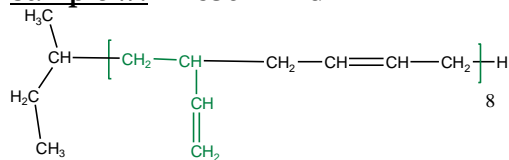


Sample Name: Polybutadiene
(rich in 1,2 microstructure)
(1,2=82% , 1,4 = 18%)

Sample #: P18361B-Bd

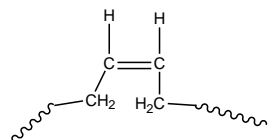


Composition:

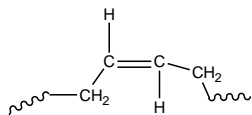
Mn x 10 ³	PDI
0.45	1.05

Synthesis Procedure:

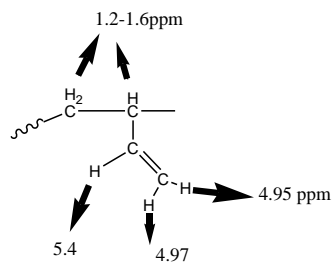
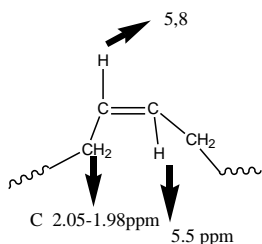
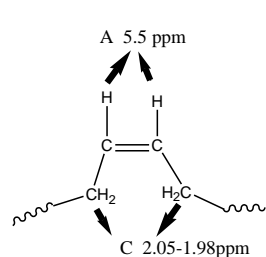
Polybutadiene (1,2-rich) is obtained by living anionic polymerization in THF. Using *Sec.* BuLi initiator.



Cis 1,4 addition



Trans 1,4 addition

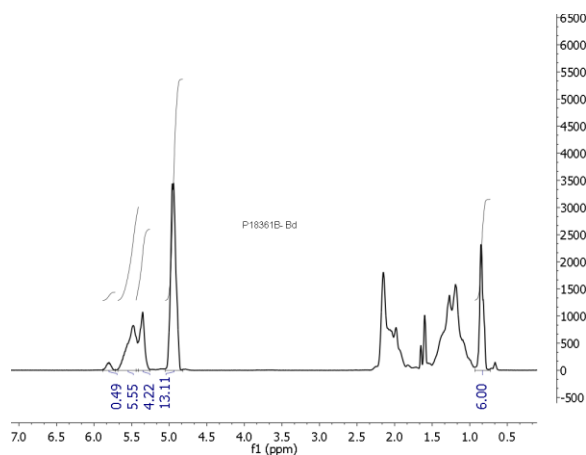
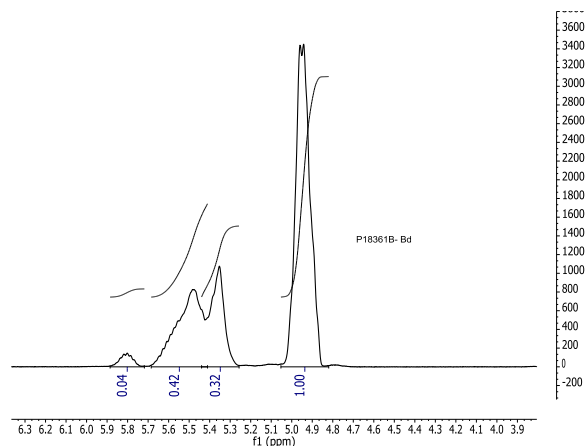


Characterization:

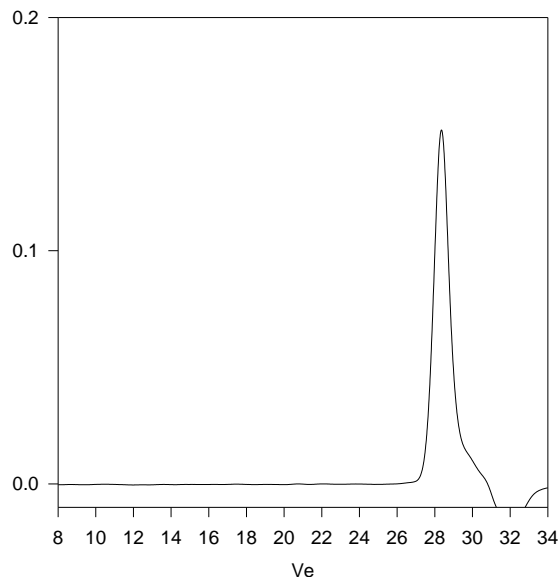
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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



P18361B-Bd



Size exclusion chromatography of oligomers:

Mn 450 Mw/Mn 1.05