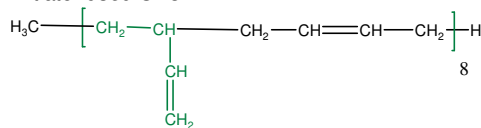


Sample Name: Polybutadiene
(rich in 1,2 microstructure)
(1,2=69% , 1,4 = 31%)

Sample #: P18737A-Bd

Initiator used CH₃Li

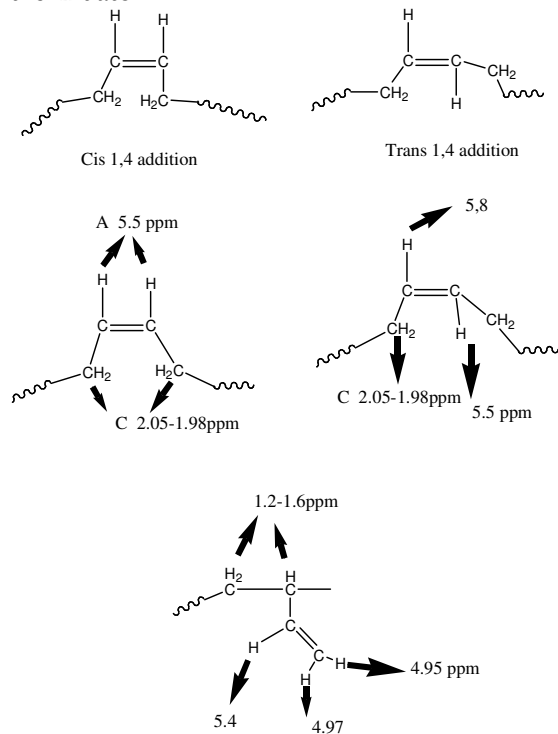


Composition:

Mn x 10 ³	PDI
347.0	1.12

Synthesis Procedure:

Polybutadiene (1,2-rich) is obtained by living anionic polymerization in THF using secBuLi as the initiator.

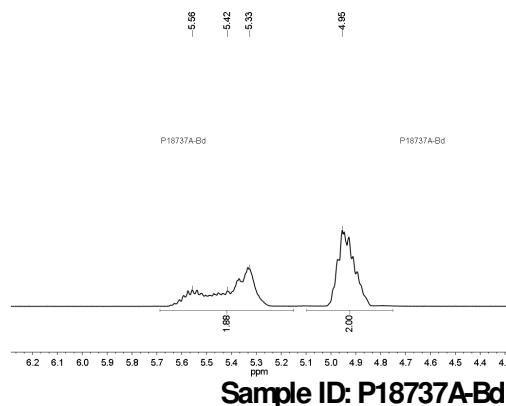


Characterization:

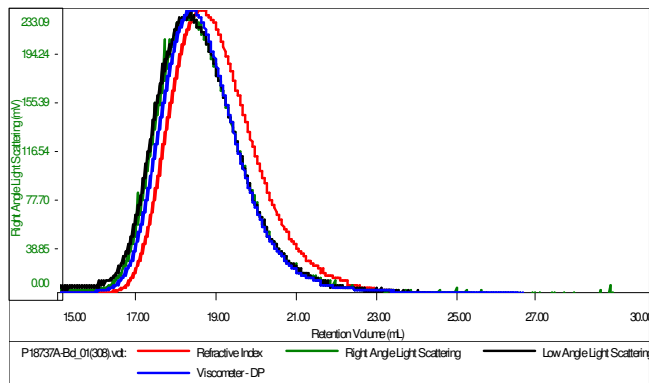
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

¹H NMR:



Concentration (mg/mL)	20.8122
Sample dn/dc (mL/g)	0.1270
Method File	PS80K-June14-2014-0001.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn	Mw	Mp	Mw/Mn
P18737A-Bd_01(308).vdt	346,660	407,922	423,932	1.177

