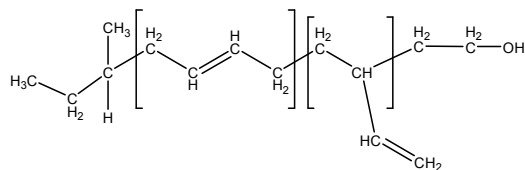


**Sample Name: Hydroxy Terminated Polybutadiene, 1, 4-microstructure**  
**Sample #: P19270-BdOH**

### Structure:

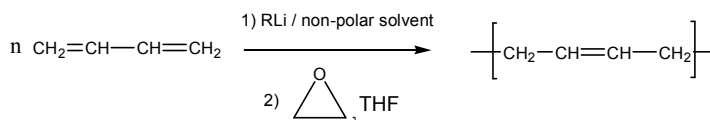


**Composition:**

Mn x 10 <sup>3</sup>	PDI
1.9	1.09
1,4 microstructure	94%

### Synthesis Procedure:

1, 4-addition hydroxy terminated polybutadiene was prepared by anionic living polymerization of butadiene in non-polar solvent followed by termination with ethylene oxide. The scheme of the reaction is illustrated below:



### Characterization:

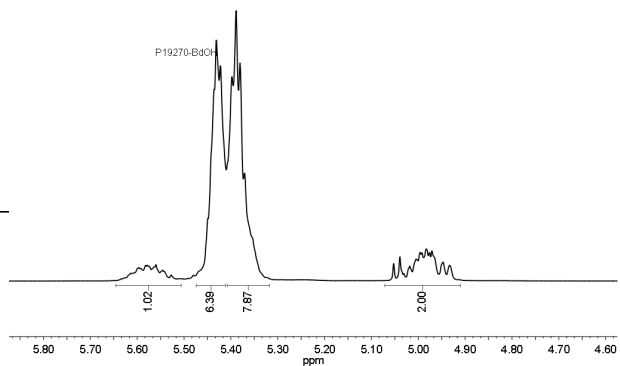
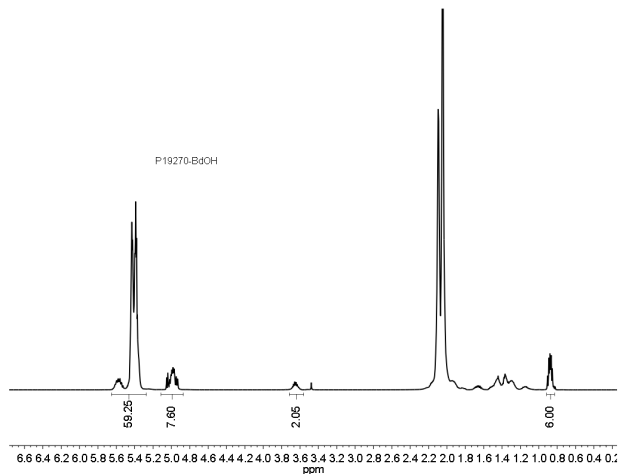
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

**Functionality:** functionality of the obtained polymer was determined by reacting polymer in dried non quantity of acetic anhydride in the presence of pyridine as a catalyst and the liberated COOH was titrated by acid-base titration.

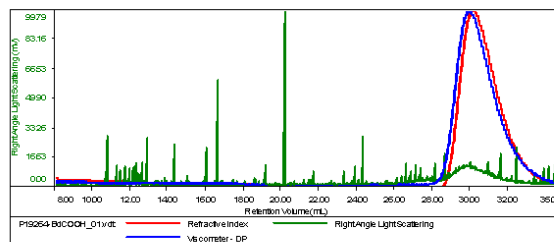
**Solubility:**

Hydroxy terminated polybutadiene is soluble in DMF, THF, toluene, hexane, cyclohexane and  $\text{CHCl}_3$ . It precipitates from methanol, ethanol, and water.

**SEC of Sample:**



Concentration (mg/mL)	6.6739
Sample divd: (mL/g)	0.1670
Method/File	PS80K-April 29-2015-00000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersi	Intrinsic Viscosity (dL/g)
BeCCCH_01.vot	1,974	2,020	1,985	1.023	0.4351