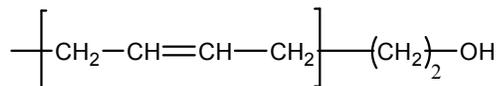


**Sample Name: Hydroxy Terminated Polybutadiene, 1, 4-microstructure**

**Sample #: P8657-BdOH**

**Structure:**

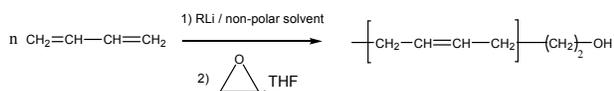


**Composition:**

|                   |      |
|-------------------|------|
| $M_n \times 10^3$ | PDI  |
| 2.0               | 1.07 |

**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:**

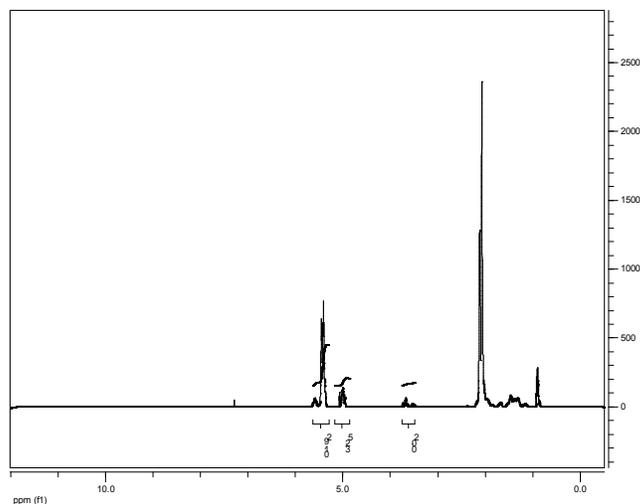
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

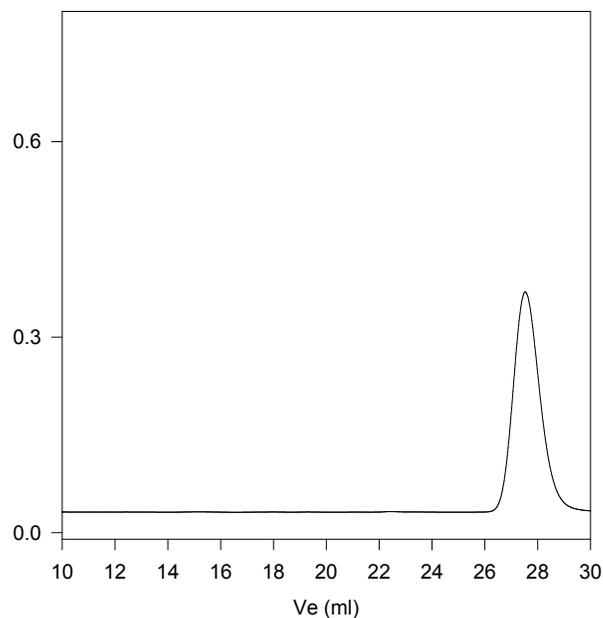
Hydroxy terminated polybutadiene is soluble in DMF, THF, toluene, hexane, cyclohexane and  $\text{CHCl}_3$ . It precipitates from methanol, ethanol, and water.

**H NMR of the product:**



**SEC of Sample:**

**P8657A-Bd<sub>1,4 rich</sub>OH**



Size Exclusion Chromatogram of Poly(butadiene-b-ethylene oxide)  
— Polybutadiene:  $M_n=2000$ ,  $M_w=2100$ ,  $M_w/M_n=1.07$