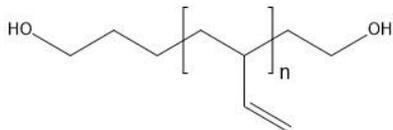


**Sample Name: Poly(1,2-butadiene),  $\alpha,\omega$ -bis(hydroxy)-terminated**

**Sample #: P9492-Bd2OH**

**Structure:**



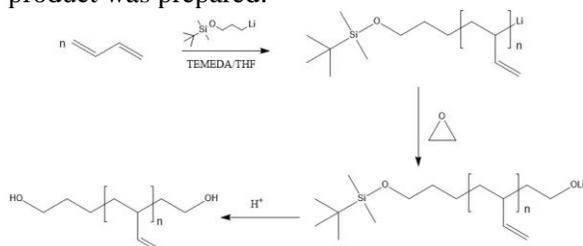
**Composition:**

$M_n \times 10^3$	PDI
9.0	1.04

1,2 addition >85%
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**Synthesis Procedure:**

1,2-rich microstructure addition dihydroxy terminated polybutadiene was prepared by anionic living polymerization of butadiene in polar solvent such as THF at 0°C followed by termination with ethylene oxide. **For this batch we have taken OH protected initiator.** The following reaction scheme shows how the product was prepared:



**Characterization:**

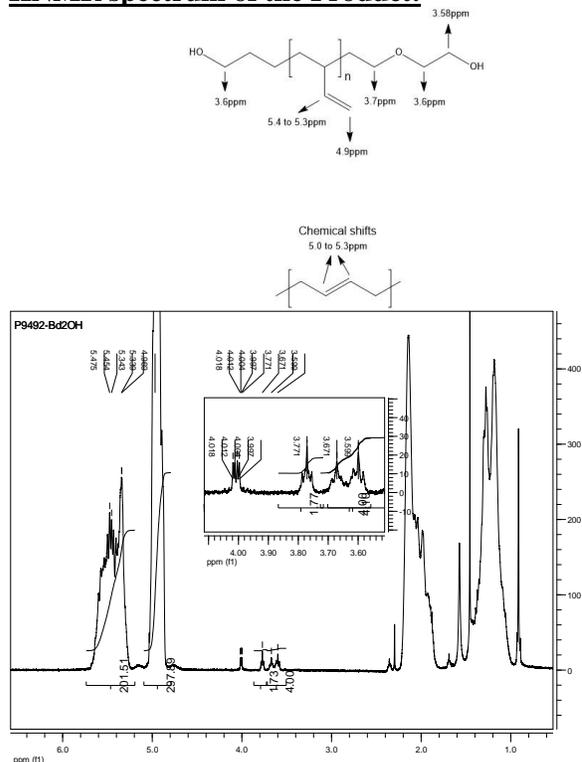
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

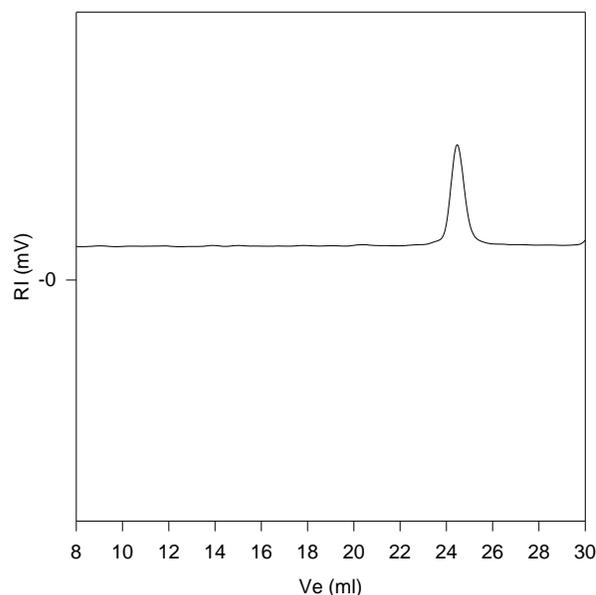
Hydroxy terminated polybutadiene is soluble in THF, toluene, hexane, cyclohexane and  $CHCl_3$ . It precipitates from methanol, ethanol, and water.

**HNMR spectrum of the Product:**



**SEC profile of the Sample:**

**P9492-Bd2OH (rich in 1,2 addition)**



Size Exclusion Chromatography of polystyrene;  
 —  $M_n = 9000$ ,  $M_w = 9300$ ,  $M_w/M_n = 1.04$