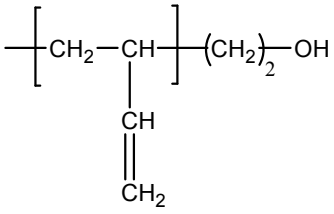
Sample Name: **Hydroxy Terminated**

Polybutadiene, 1,2-rich microstructure

Sample #: **P10047-BdOH**

Structure:

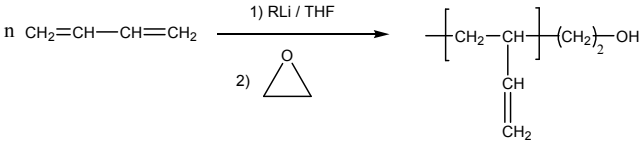


Composition:

Mn x 10^3	PDI	1,2 addition
0.9	1.09	>65%

Synthesis Procedure:

1,2-rich microstructure addition hydroxy terminated polybutadiene was prepared by anionic living polymerization of butadiene in polar solvent such as THF at O °C followed by termination with ethylene oxide. The scheme of the reaction is illustrated below:



Characterization:

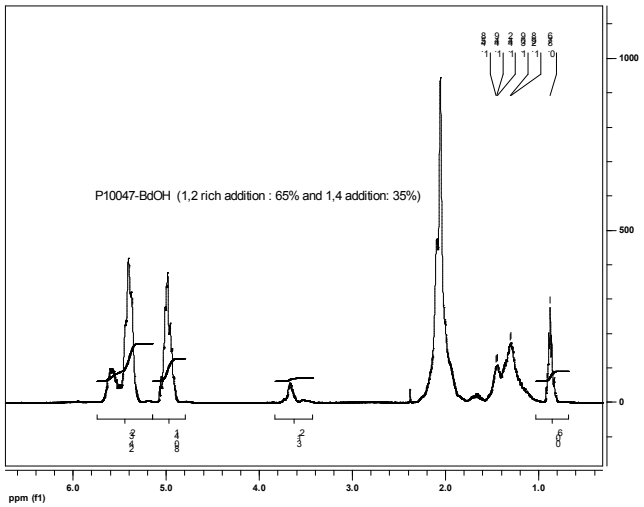
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

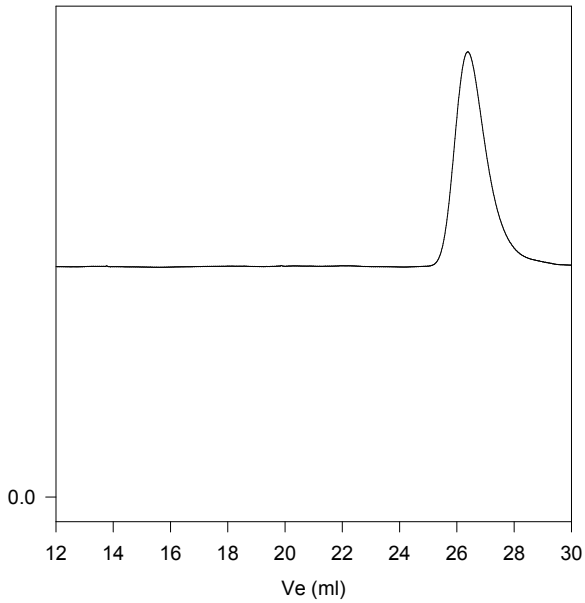
Hydroxy terminated polybutadiene is soluble in DMF, THF, toluene, hexane, cyclohexane and $CHCl_3$. It precipitates from methanol, ethanol and water.

HNMR of the Product:



SEC of Sample:

P10047-BdOH (1,2 rich addition)



Size Exclusion Chromatogram of Hydroxy Terminated Polybutadiene

—— Polybutadiene: M_n=900, M_w=1000, M_w/M_n=1.09