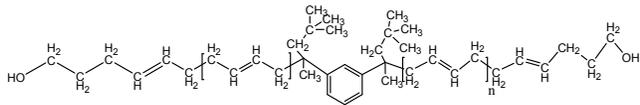


Sample Name:  $\alpha$ - $\omega$  dihydroxy Terminated

Polybutadiene, 1,4-rich microstructure

Sample #: P10668A-Bd2OH

**Structure:**

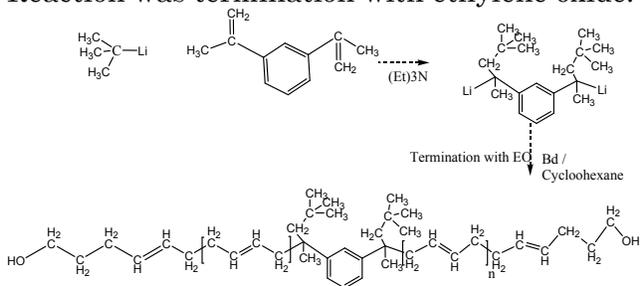


**Composition:**

Mn x 10 <sup>3</sup>	PDI
4.3	1.2

**Synthesis Procedure:**

1,4-rich microstructure addition dihydroxy terminated polybutadiene was prepared by anionic living polymerization of butadiene in apolar solvent such as cyclohexane at 0 °C using difunctional initiator. Initiator was prepared by reaction of 1,3 diisopropenyl benzene in Benzene at -10 °C with tert.butyllithium in presence of triethyl amine. Reaction was termination with ethylene oxide.



**Characterization:**

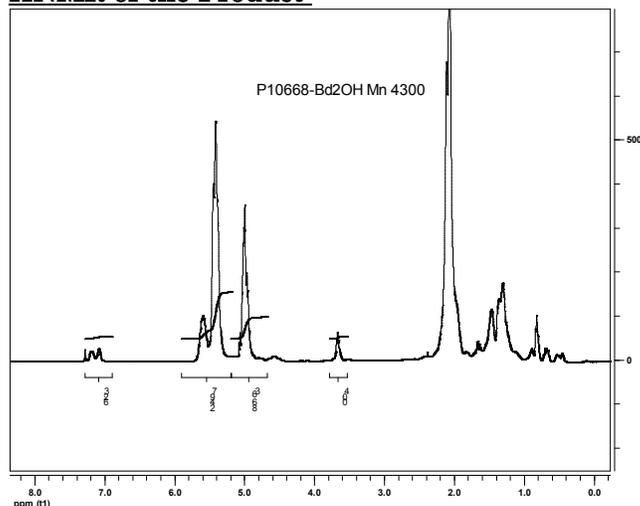
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

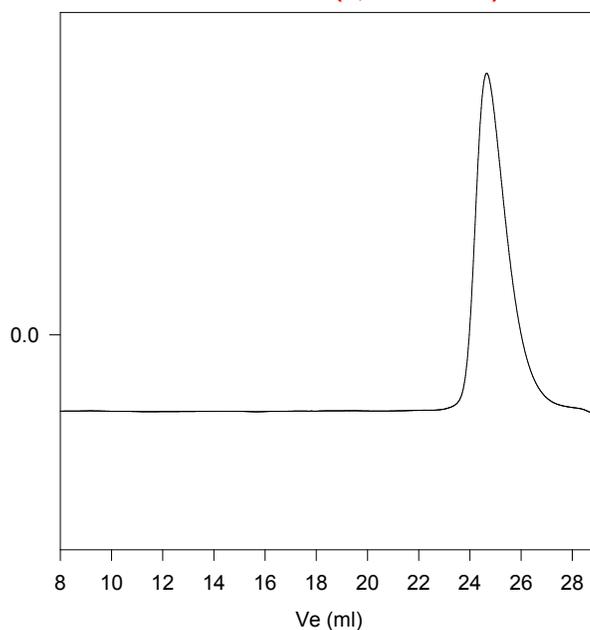
Hydroxy terminated polybutadiene is soluble in THF, toluene, hexane, cyclohexane and CHCl<sub>3</sub>. It is also soluble in methanol, ethanol.

**HNMR of the Product:**



**SEC of Sample:**

**P10668A-BdOH (1,4 addition)**



Size exclusion chromatography of poly(butadiene)  
— Polybutadiene M<sub>n</sub>=4,300, M<sub>w</sub>=5,100, PI=1.2