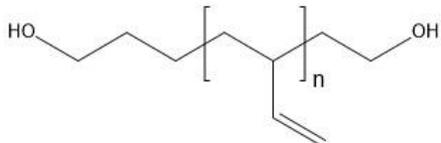


Sample Name: Poly(1,2-butadiene), α,ω -bis(hydroxy)-terminated

Sample #: P9541-Bd2OH

Structure:



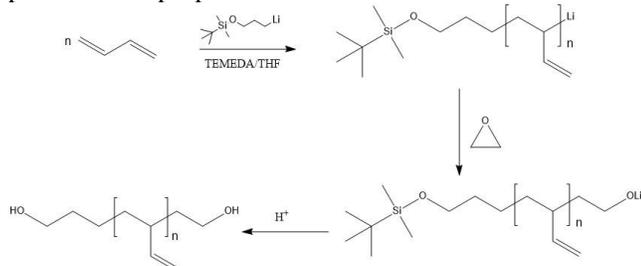
Composition:

Mn x 10 ³	PDI
1.0	1.15

1,2 addition >80%

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:

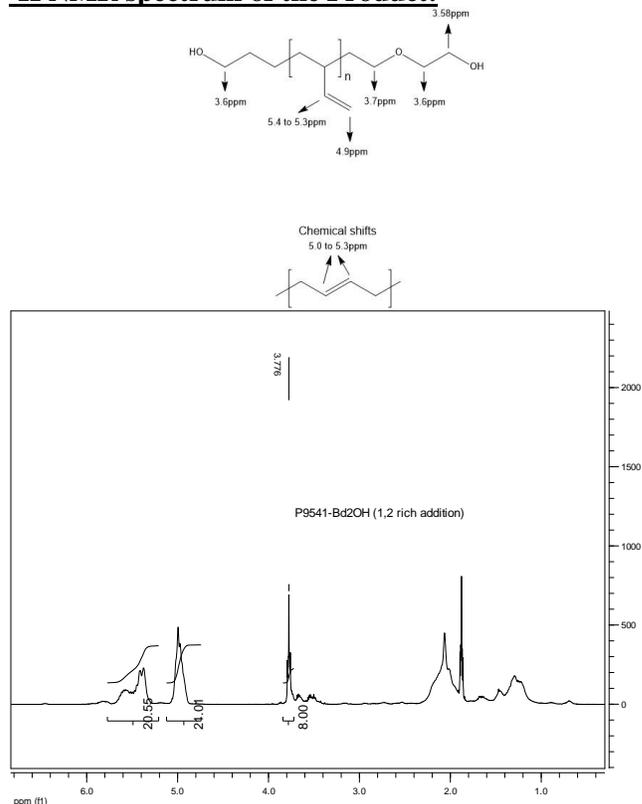
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

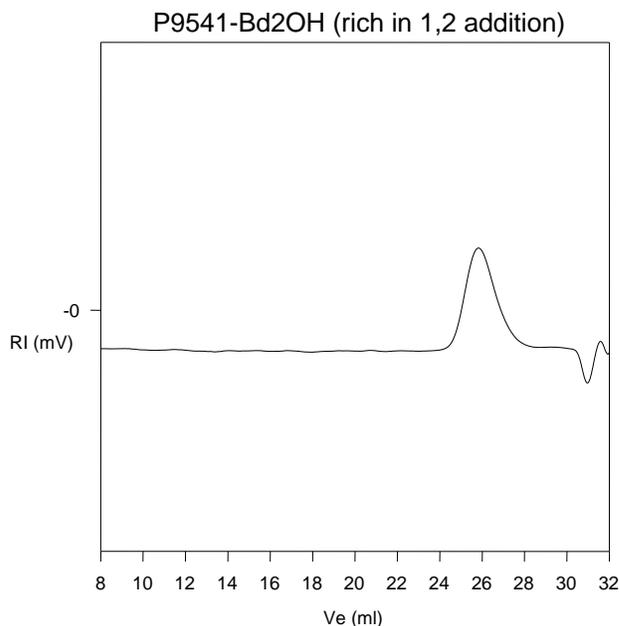
Solubility:

Hydroxy terminated polybutadiene is soluble in THF, toluene, hexane, cyclohexane and CHCl₃. It precipitates from methanol, ethanol, and water.

¹H NMR spectrum of the Product:



SEC profile of the Sample:



Size Exclusion Chromatography of polystyrene:
 — M_n: 1,000, M_w: 1,150, M_w/M_n: 1.15