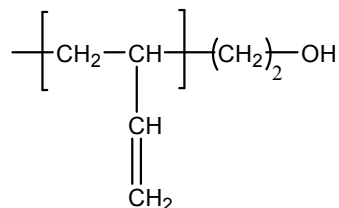


Sample Name: Hydroxy Terminated

Polybutadiene, 1,2-rich microstructure

Sample #: P8542-BdOH

**Structure:**

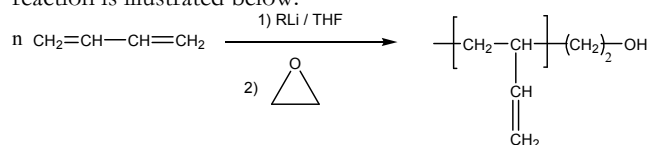


**Composition:**

Mn x 10 <sup>3</sup>	PDI	1,2 addition
11.5	1.05	87%

**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 0 °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.

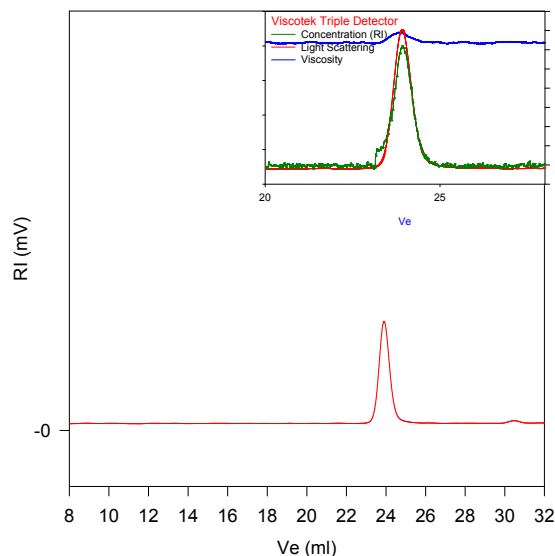
**Functionality:** functionality of the obtained polymer was determined by reacting polymer in dried non quantity of acetic anhydride in the presence of pyridine as a catalyst and the liberated COOH was titrated by acid-base titration.

**Solubility:**

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

SEC of Sample:

**P8542-BdOH**



Size Exclusion Chromatography of OH terminated poly butadiene:

—  $M_n = 11500$ ,  $M_w = 12000$ ,  $M_w/M_n = 1.05$   
Solution Viscosity in THF at 35 °C: 0.365dl/g  
dn/dc in THF at 35 °C: 0.127ml/g  
Rgw: 5.30nm