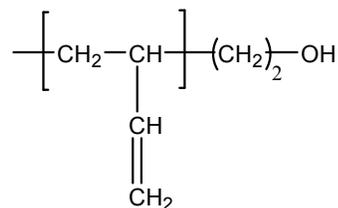


**Sample Name: Hydroxy Terminated Polybutadiene, 1,2-rich microstructure**  
**Sample #: P2894-BdOH**

**Structure:**

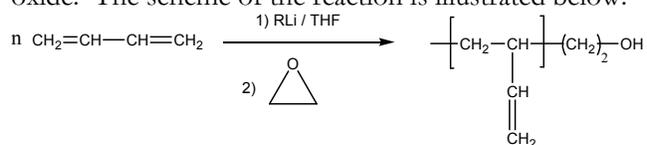


**Composition:**

Mn x 10 <sup>3</sup>	PDI
3.0	1.05
Functionality	>98%
T <sub>g</sub> (°C)	-30

**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.

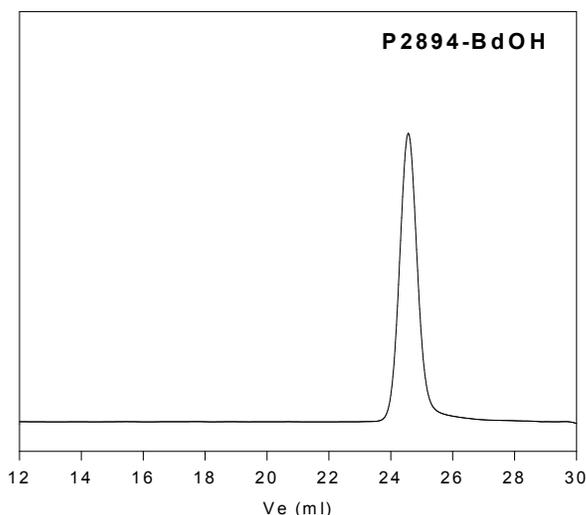
**Thermal Analysis:**

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T<sub>g</sub>) of the sample has been considered.

**Solubility:**

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

**SEC of Sample:**



Size Exclusion Chromatogram of Hydroxy Terminated Polybutadiene  
 — Polybutadiene: M<sub>n</sub>=3000, M<sub>w</sub>=3200, M<sub>w</sub>/M<sub>n</sub>=1.05

**DSC thermogram for the polymer:**

