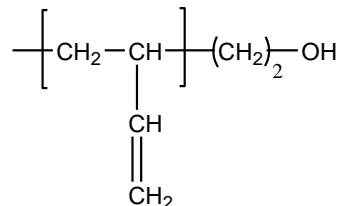


Sample Name: Hydroxy Terminated

Polybutadiene, 1,2-rich microstructure

Sample #: P8943-BdOH

**Structure:**

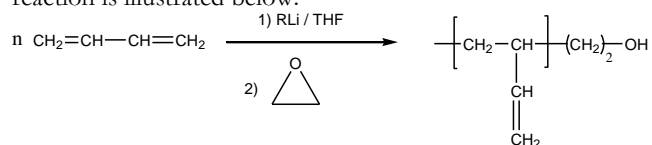


**Composition:**

Mn x 10 <sup>3</sup>	PDI	1,2 addition
21.0	1.05	>90%

**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.

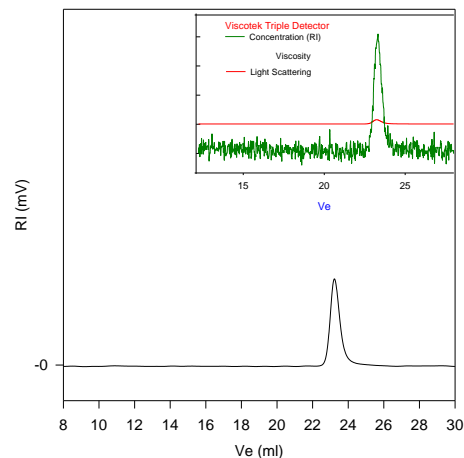
**Functionality:** functionality of the obtained polymer was determined by reacting polymer in dried non quantity of acetic anhydride in the presence of pyridine as a catalyst and the liberated COOH was titrated by acid-base titration.

**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:**

**P8943-BdOH (rich in 1,2 addition)**



Size Exclusion Chromatography of polystyrene;

— M<sub>n</sub> = 21000, M<sub>w</sub> = 22000, M<sub>w</sub>/M<sub>n</sub> = 1.05

In box Light Scattering data from Triple detectors:

dn/dc in THF 0.127ml/g solution Viscosity in THF at 35 °C: 0.445 dl/g

RgW: 6.76nm