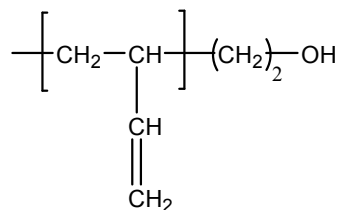


Sample Name: Hydroxy Terminated
Polybutadiene, 1,2-rich microstructure
Sample #: P2894-BdOH

Structure:

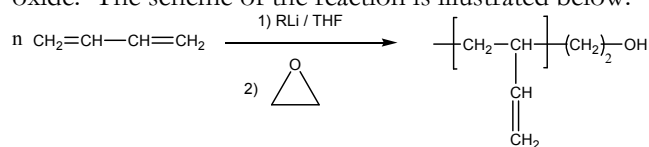


Composition:

Mn x 10 ³	PDI
3.0	1.05
Functionality	>98%
T _g (°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.

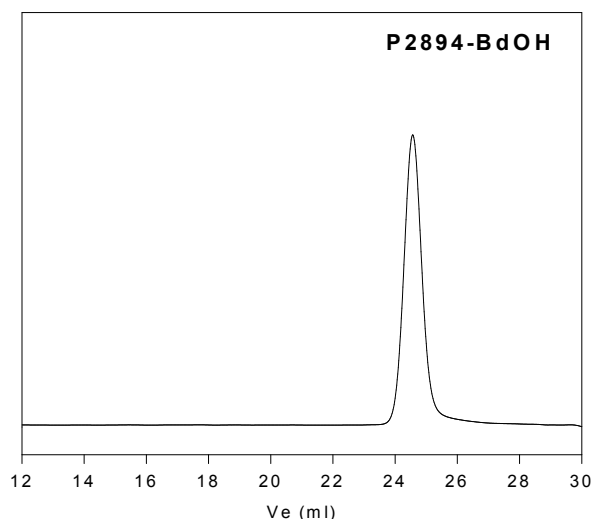
Thermal Analysis:

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_g) of the sample has been considered.

Solubility:

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

SEC of Sample:



Size Exclusion Chromatogram of Hydroxy Terminated Polybutadiene

— Polybutadiene: M_n=3000, M_w=3200, M_w/M_n=1.05

DSC thermogram for the polymer:

