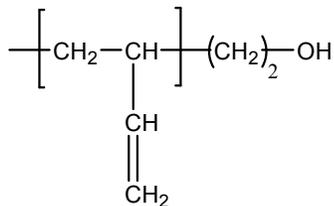


Sample Name: Hydroxy Terminated Polybutadiene, 1, 2-rich microstructure
Sample #: P7547-BdOH

Structure:

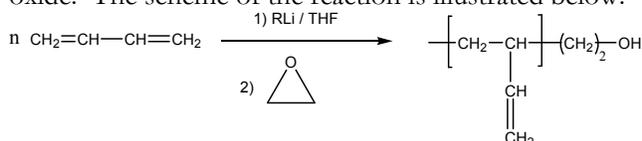


Composition:

Mn x 10 ³	PDI	1,2 addition
5.0	1.09	88%
T _g (°C)	-33	

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:

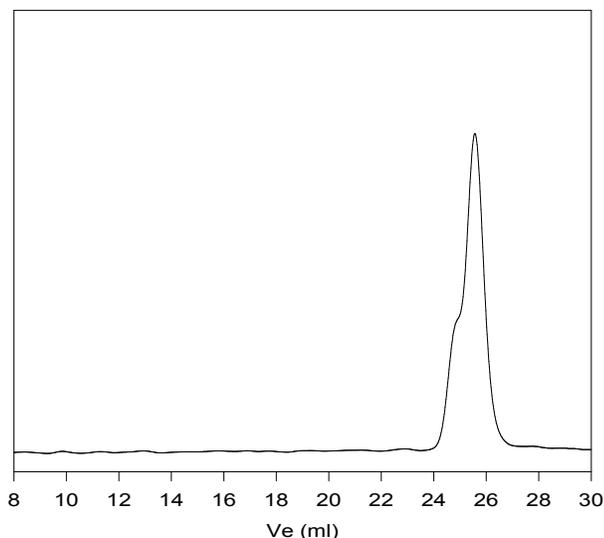
Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T_g) of the sample has been considered.

Solubility:

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

SEC of Sample:

P7547-BdOH(1,2 rich addition: 88%)

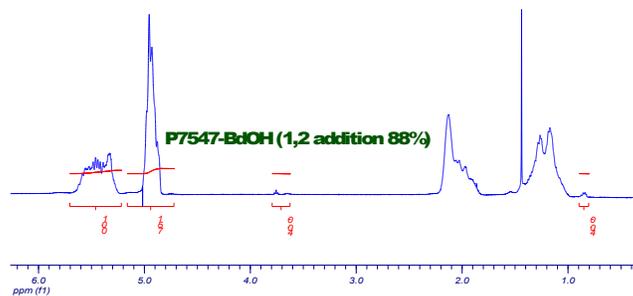


Size exclusion chromatography of polybutadiene:

M_w=5000, M_n=5500, M_w/M_n=1.09

SOLUTION VISCOSITY IN THF AT 35 °C: 0.280 dl/g
 dn/dc IN THF AT 35 °C 0.127ml/g

HNMR of the sample:



DSC thermogram for the sample:

