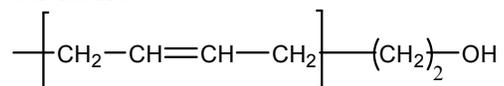


Sample Name: Hydroxy Terminated Polybutadiene, 1,4-microstructure

Sample #: P2094-BdOH

Structure:

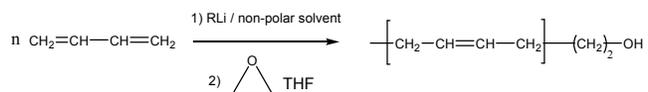


Composition:

Mn x 10 ³	PDI
20.4	1.05

Synthesis Procedure:

1,4-addition hydroxy terminated polybutadiene was prepared by anionic living polymerization of butadiene in non-polar solvent followed by termination with ethylene oxide. The scheme of the reaction is illustrated below:



Characterization:

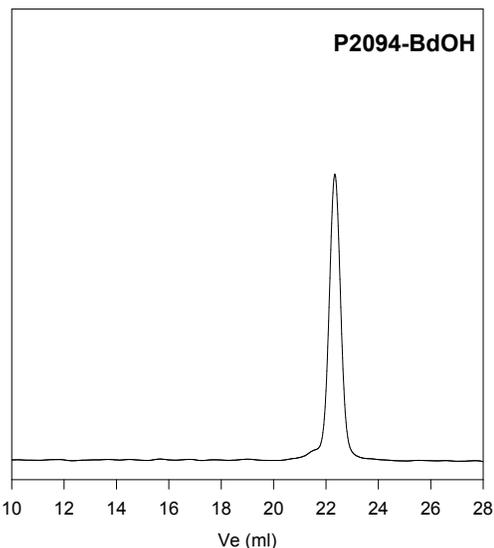
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple 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 CHCl₃. It precipitates from methanol, ethanol, water.

SEC of Sample:



Size exclusion chromatography of Poly butadiene hydroxy terminated:

— Polybutadiene, M_n=20400, M_w=21400 PI=1.05 'Functionality>0.98'