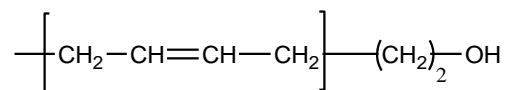


Sample Name: Hydroxy Terminated Polybutadiene, 1, 4-microstructure

Sample #: P9748-BdOH

Structure:

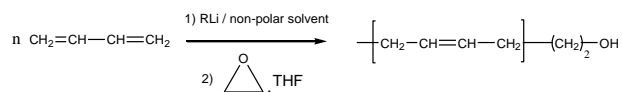


Composition:

Mn x 10 ³	PDI
40.0	1.07

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:

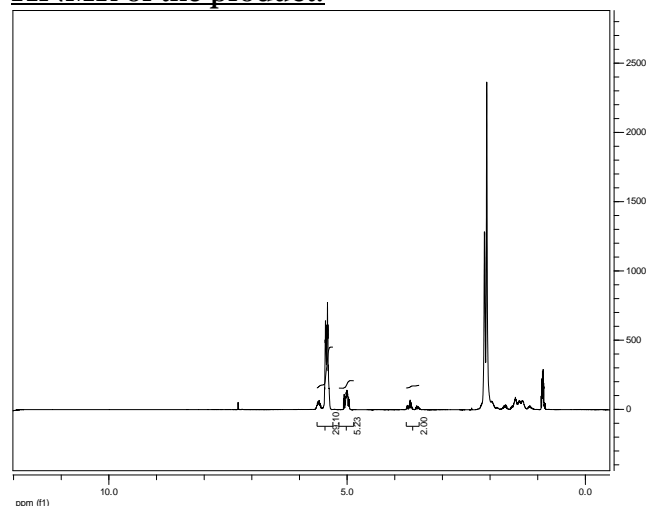
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

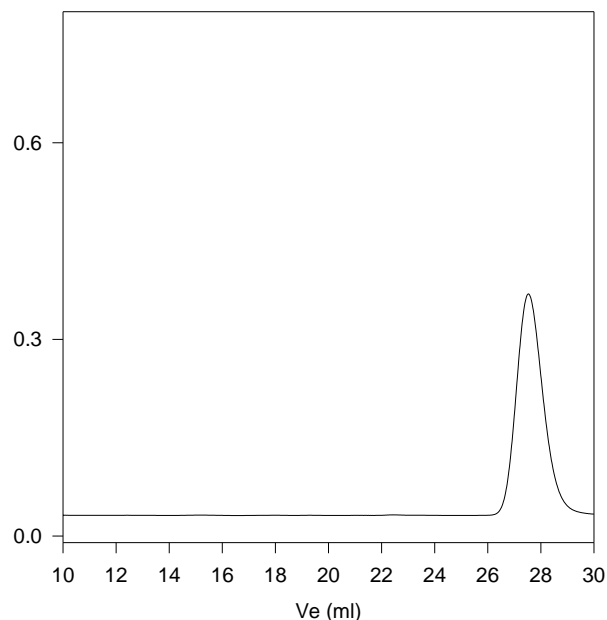
Hydroxy terminated polybutadiene is soluble in DMF, THF, toluene, hexane, cyclohexane and CHCl₃. It precipitates from methanol, ethanol, water.

HNMR of the product:



SEC of Sample:

P8657A-Bd_{1,4 rich}OH



Size Exclusion Chromatogram of Poly(butadiene-b-ethylene oxide)

— Polybutadiene: M_n=2000, M_w=2100, M_w/M_n=1.07