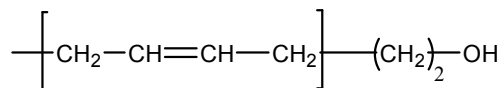


Sample Name: Hydroxy Terminated Polybutadiene, 1, 4-microstructure

Sample #: P10689A-BdOH

Structure:

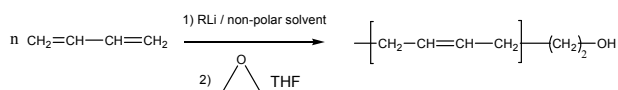


Composition:

$M_n \times 10^3$	PDI
20.0	1.09

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.

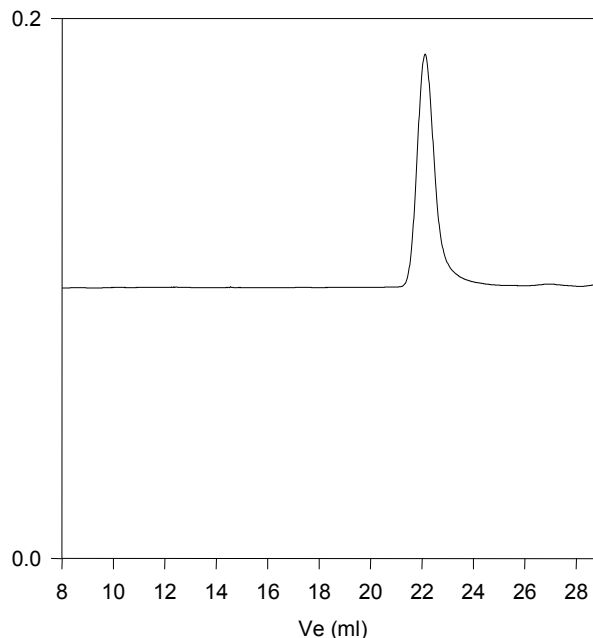
Functionality: The functionality of the obtained polymer was determined by reacting polymer in dried acetic anhydride in the presence of pyridine as a catalyst and the liberated COOH was titrated by acid-base titration.

Solubility:

Hydroxy terminated polybutadiene is soluble in DMF, THF, toluene, hexane, cyclohexane and CHCl_3 . It precipitates from methanol, ethanol, water.

SEC of Sample:

P10689A-BdOH



Size exclusion chromatography of polymer

— 1,4 polybutadiene $M_n=20,000$, $M_w=21,800$, $PI=1.09$