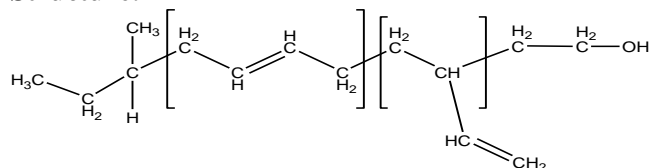


Sample Name: **Hydroxy Terminated Polybutadiene, 1, 4-microstructure**

Sample #: **P41407-BdOH**

**Structure:**

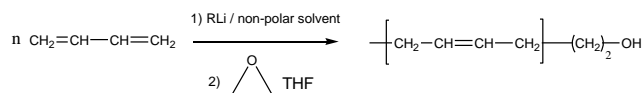


**Composition:**

Mn x 10 <sup>3</sup>	PDI
56.5	1.07
1,4 microstructure	92%

**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:**

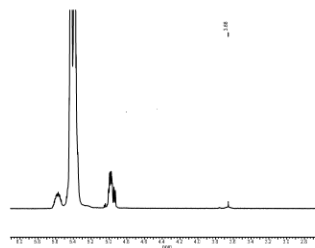
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

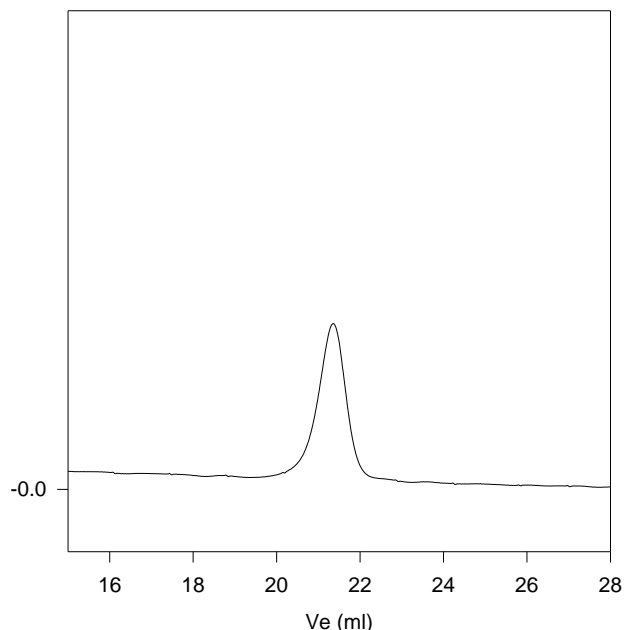
Hydroxy terminated polybutadiene is soluble in DMF, THF, toluene, hexane, cyclohexane and CHCl<sub>3</sub>. It precipitates from methanol, ethanol, water.

<sup>1</sup>H NMR spectrum of the polymer:



SEC elugram of the polymer:

**P41407-BdOH**



Size exclusion chromatograph of polystyrene:

M<sub>n</sub>=56500, M<sub>w</sub>=60500, PI=1.07