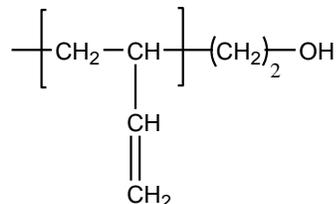


Sample Name: **Hydroxy Terminated**

Polybutadiene, 1,2-rich microstructure

Sample #: **P8943-BdOH**

Structure:

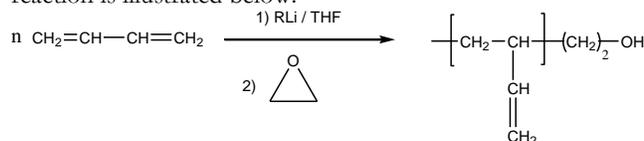


Composition:

| Mn x 10 ³ | PDI | 1,2 addition |
|----------------------|------|--------------|
| 21.0 | 1.05 | >90% |

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.

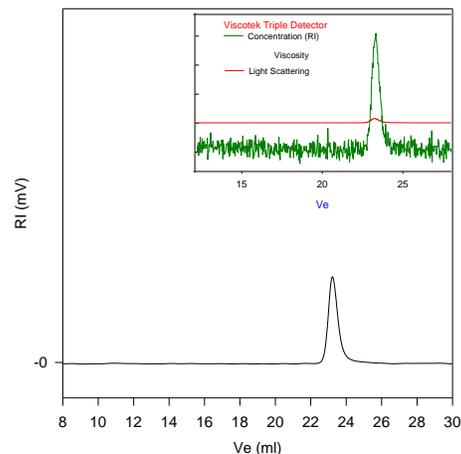
Functionality: functionality of the obtained polymer was determined by reacting polymer in dried non quantity of acetic anhydride in the presence of pyridine as a catalyst and the liberated COOH was titrated by acid-base titration.

Solubility:

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

SEC of Sample:

P8943-BdOH (rich in 1,2 addition)



Size Exclusion Chromatography of polystyrene;

— M_n = 21000, M_w = 22000, M_w/M_n = 1.05

In box Light Scattering data from Triple detectors:
dn/dc in THF 0.127ml/g solution Viscosity in THF at 35 °C: 0.445 dl/g
RgW: 6.76nm