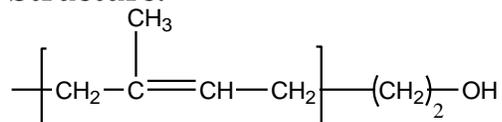


Sample Name: Hydroxy Terminated Polyisoprene, 1,4-microstructure

Sample #: P8920-IPOH

Structure:

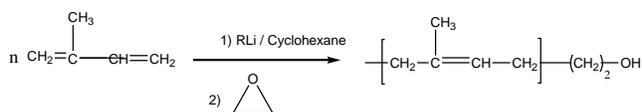


Composition:

$M_n \times 10^3$	PDI
45.0	1.07
T_g (°C)	-64

Synthesis Procedure:

1,4-addition hydroxy terminated polyisoprene was prepared by anionic living polymerization in a 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.

Thermal analysis

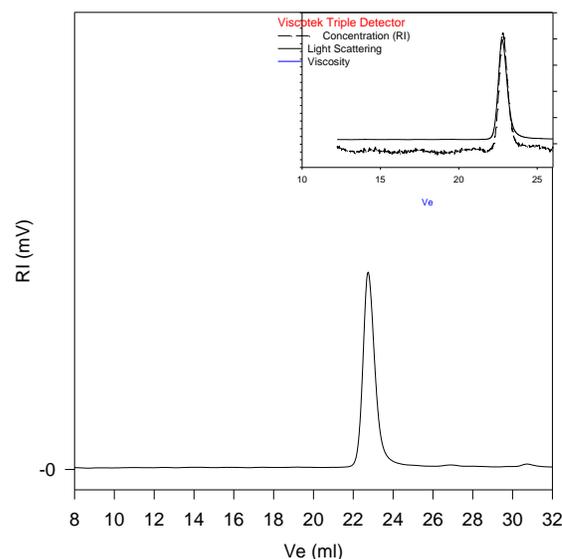
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

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

SEC of Sample:

P8920-IPOH



Size Exclusion Chromatography of Poly isoprene OH terminatedL

$M_n = 45000$, $M_w = 48200$, $M_w/M_n = 1.07$
Solution Viscosity in THF at 35 °C: 0.497dl/g
 dn/dc in THF at 35 °C: 0.125 ml/g
Rgw: 9.13nm

DSC thermogram for the polymer:

