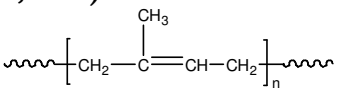
Sample Name: Polyisoprene
1,4- rich addition

Sample #: P4822-Ip
(cis 1,4: 80%; trans 1,4:15% and 3,4:5%)



Mn x 10^3	PDI
1000	1.05
T_g (^oC)	-61

Synthesis Procedure:

Polyisoprene is obtained by living anionic polymerization of isoprene in a-polar media such as cyclohexane, toluene or hexane.

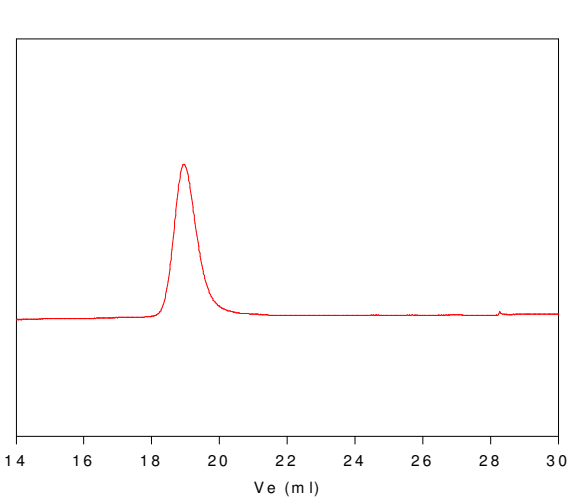
Characterization:

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.

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10^oC/min.The inflection glass transition temperature (T_g) has been considered.

Solubility:
Polyisoprene is soluble in THF, toluene, hexane, pentane and cyclohexane and precipitates from methanol.

SEC of Homopolymer:



Size Exclusion Chromatogram of Polyisoprene (1,4 rich addition):

M_n=1000,000, M_w=1050,000, M_w/M_n = 1.05
data from light scattering detectors:
Solution viscosity in THF at 35 °C: 5.46dl/g
Radius of Gyration: 57.26nm dn/dc in THF at 35 °C: 0.125 ml/g

Thermogram for the polymer: