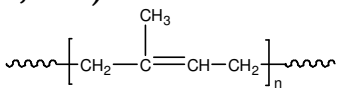
<u>Sample Name</u>: Polyisoprene
1,4- rich addition

<u>Sample #:</u> P4964-Ip
(cis 1,4: 80%; trans 1,4:15% and 3,4:5%)



Mn x 10^3	PDI
10.0	1.03
T_g (^oC)	-70

Synthesis Procedure:

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

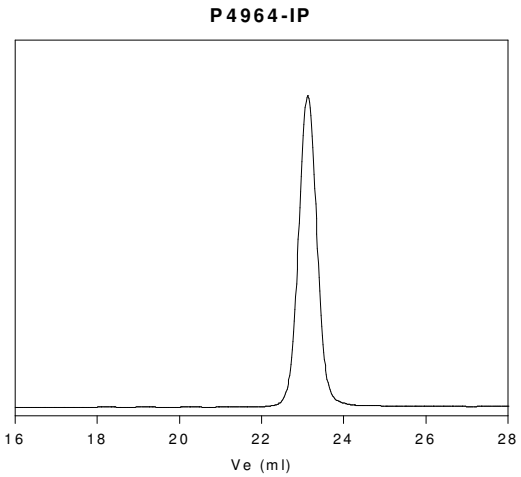
Characterization:

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.

<u>SEC of Homopolymer:</u>



Size exclusion chromatography of Polyisoprene (rich 1,4 addition):
—— Polyisoprene, M_n=10100, M_w=10500 PI=1.04
Solution Viscosity in THF at 35 °C: 0.306dl/g
Radius of Gyration: 4.17nm dn/dc in THF at 35 °C: 0.125ml/g

Thermogram for the polymer: