

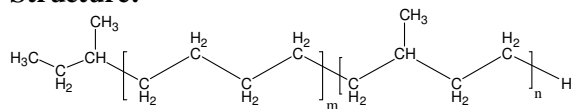
**Sample name:** Poly(Ethylene-*b*-Ethylene Propylene)

**Other name:**

**Hydrogenated form of Poly(Butadiene-*b*-Isoprene)  
predominantly in 1,4-addition**

**Sample #** P19664A-EEPr

**Structure:**



**Composition:**

Mn $\times 10^3$ (Bd-b-Ip)	PDI
50.0-b-52.0 (compositions from $^1\text{H}$ NMR)	1.09

After Hydrogenation 52.0-b-54.0	1.09
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Hydrogenation	> 98%
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**Synthesis procedure:**

The polymer was synthesized by anionic polymerization in cyclohexane.

**Characterization:**

The polymer was characterized by  $^1\text{H}$  NMR, SEC, FTIR and DSC.

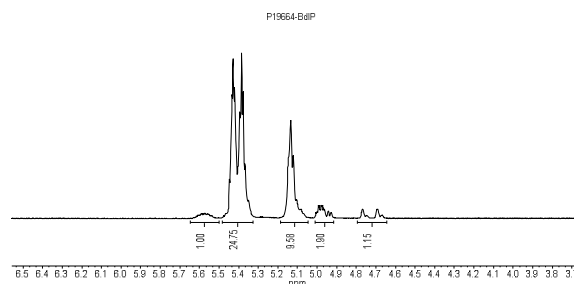
**DSC thermal analysis:**

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 ( $T_g$ ).

**$^1\text{H}$  NMR analysis:**

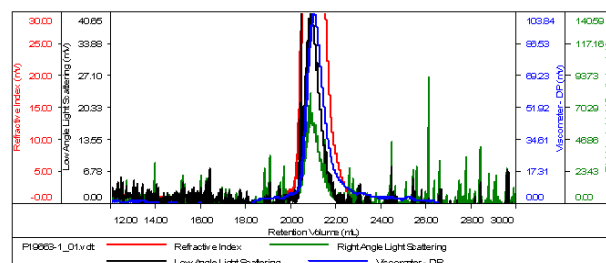
Chemical shifts of Unsaturated blocks:	
Polybutadiene (Bd):	Polyisoprene (Ip):
5.43 ppm	5.13 ppm
5.38 ppm	4.98 ppm
4.76 ppm	4.76 ppm
4.69 ppm	4.69 ppm

**$^1\text{H}$  NMR of Bd-Ip diblock copolymer in  $\text{CDCl}_3$ :**



Sample ID-P19664-1

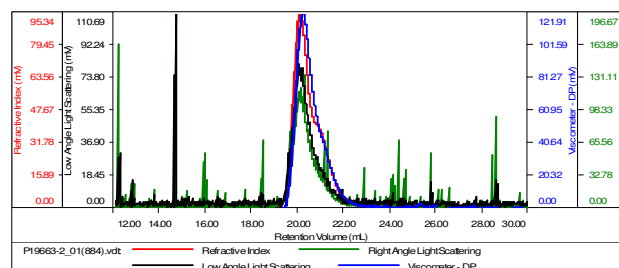
Concentration (mg/mL)	0.7624
Sample dn/dc (mL/g)	0.1260
Method File	PS80K-June30-2015-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P19664-1_01.vdt	51,309	51,273	48,134	1.019	3.6590

Sample ID-P19664-BdIp

Concentration (mg/mL)	0.7476
Sample dn/dc (mL/g)	0.1360
Method File	PS80K-June30-2015-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P19663-2_01(884).vdt	102,779	112,040	122,265	1.090	4.9460