

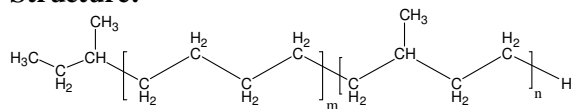
Sample name: Poly(Ethylene-*b*-Ethylene Propylene)

Other name:

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

Sample # **P19568A-EEPr**

Structure:



Composition:

Mn $\times 10^3$ (Bd-b-Ip)	PDI
17.0-b-101.0 (compositions from ^1H NMR)	1.10

After Hydrogenation 17.5-b-104.0	1.10
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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 ^1H NMR, SEC, FTIR and DSC.

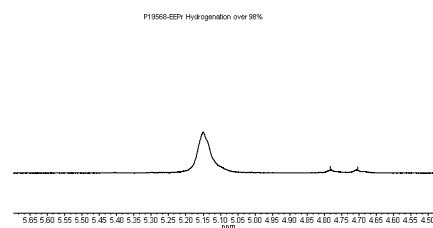
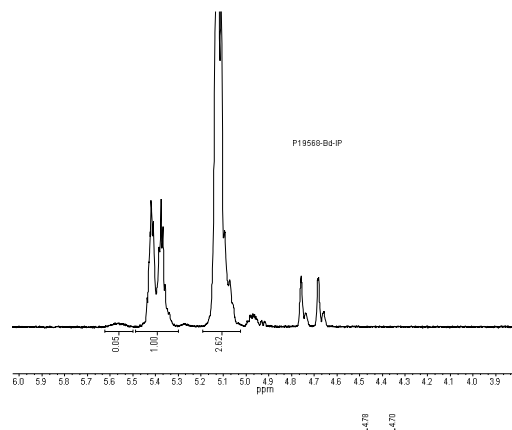
DSC thermal analysis:

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).

^1H NMR analysis:

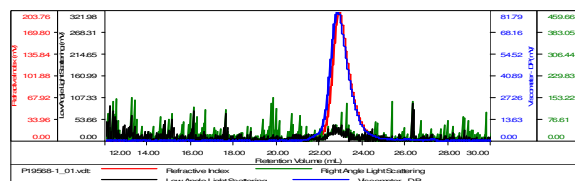
Chemical shifts of Unsaturated blocks:	
Polybutadiene (Bd):	Polyisoprene (Ip):
5.43 ppm	5.13 ppm
5.38 ppm	4.98 ppm
4.76 ppm	4.76 ppm
4.69 ppm	4.69 ppm

^1H NMR of Bd-Ip diblock copolymer in CDCl_3 :



SEC of polybutadiene fist block:

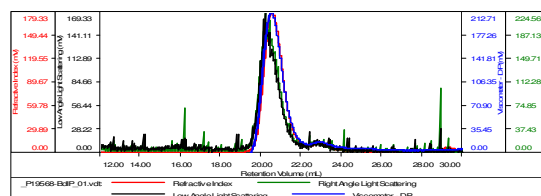
Sample ID-P19568-Bd block	
Concentration (mg/mL)	0.6079
Sample dn/dc (mL/g)	0.1250
Method File	PS80K-Nov-2015-0000.vcm
Column Set	3x PL 1113-6000
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P19568-1_01.vcl	17,673	21,914	14,887	1.240	3.8002

SEC of diblock copolymer:

Sample ID-P19568-BdIP	
Concentration (mg/mL)	0.6146
Sample dn/dc (mL/g)	0.1250
Method File	PS80K-Nov-2015-0000.vcm
Column Set	3x PL 1113-6000
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P19568-BdIP_01.vcl	117,689	127,772	112,483	1.086	11.2105