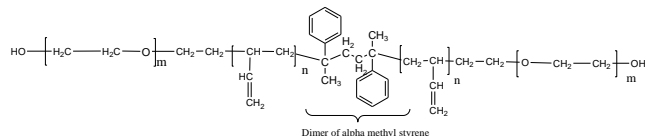


Sample Name: Poly (ethylene oxide(or glycol)-b-butadiene-b- ethylene oxide (glycol)
Polybutadiene, 1,2-rich microstructure

Sample #: P40647-EOBdEO

Structure:



Composition:

Mn x 10 ³	PDI	1,2 addition
18.5-b-10.0-b-18.5	1.25	>85%

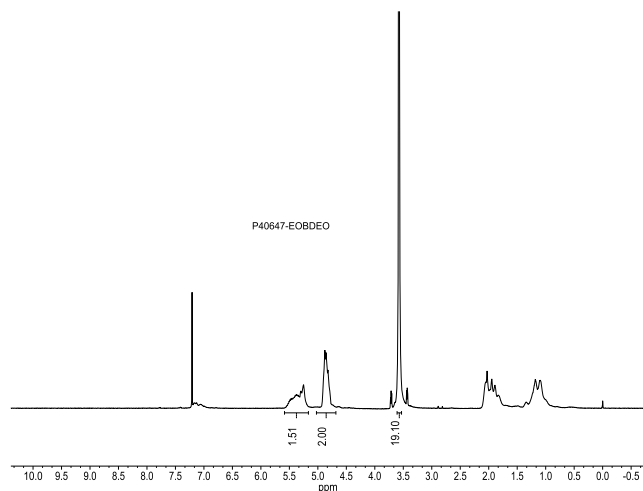
Synthesis Procedure:

1,2-rich microstructure addition dihydroxy terminated polybutadiene was prepared by anionic living polymerization (by lithium naphthalene) of butadiene in polar solvent such as THF at 0 °C followed by termination with ethylene oxide and than growing PEO block from its potassium salt.

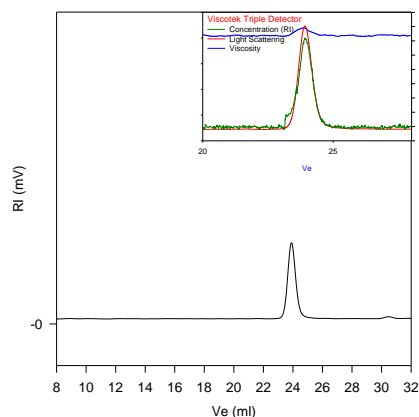
Characterization:

The product was characterized by size exclusion chromatography (SEC) and ¹H NMR.

HNMR spectrum of the Product:



SEC elugram of Bd Block:
P40647-Bd2OH



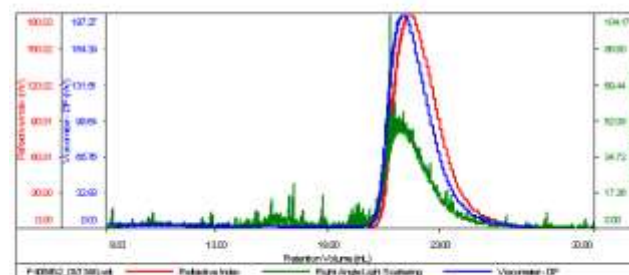
Size Exclusion Chromatography of OH terminated poly butadiene:

— M_n = 10,000, M_w = 11,000, M_w/M_n = 1.10
Solution Viscosity in THF at 35 °C: 0.365dl/g
dn/dc in THF at 35 °C: 0.127ml/g
Rgw: 5.30nm

SEC of elugram of the Sample:

EO-Bd-EO

Concentration (mg/mL)	3.0010
Sample ch/c (mL/g)	0.0050
Method File	PSEC-June272017-0000.vom
Column Set	3x PL 1115-6000
Solvent	THF



Sample	Mn (Da)	Mr (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P40647-2.0(1344).vd	47,337	60,468	1.281	2.9471	48,554

Thermal analysis of the P40647-EOBdEO

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).

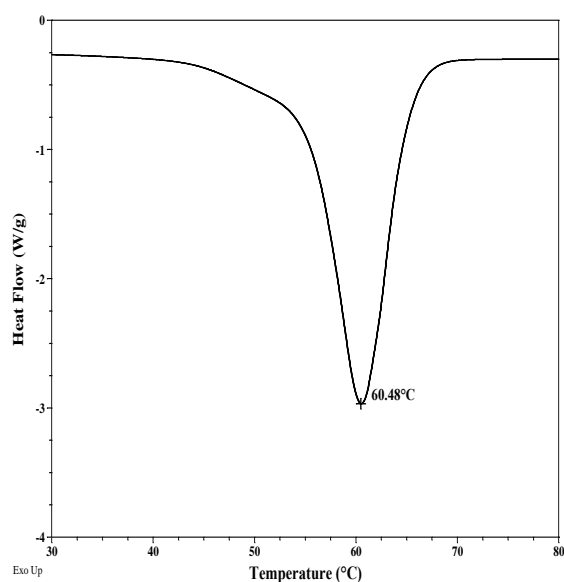
Melting and crystallization curve for the sample

The melting temperature (T_m) was taken as the maximum of the endothermic peak where as the crystallization temperature (T_c) was considered as the minimum of the exothermic peak.

Thermal analysis results at a glance

Sample	T_m (°C)	T_c (°C)	T_g (°C)
PBd block	-	-	-
PEO block	60	38	-40

Melting curve for PEO block



Crystallization curve for PEO block:

Glass transition of PEO block:

