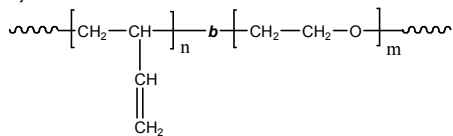
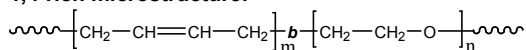


Sample Name: **Poly(butadiene-b-ethylene oxide)**  
Polybutadiene rich in 1,2 or 1,4 microstructure

Sample #: **P19467A-BdEO**  
**(polybutadiene block rich in 1,4 microstructure)**  
**1,2-rich microstructure:**



**1,4-rich microstructure:**



**Composition:**

Mn x 10 <sup>3</sup> Bd-b-EO	Mw/Mn (PDI)
60.0-b-52.0	1.15
1,4 addition	60%

**Synthesis Procedure:**  
By anionic Process

**Characterization:**

OH terminated polybutadiene was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the vinylic butadiene protons at about 5.4 ppm with the ethylene oxide protons at 3.6 ppm. Block copolymer PDI is determined by SEC.

**Solubility:**

Poly(butadiene-b-ethylene oxide) is soluble in THF, CHCl<sub>3</sub>, and toluene. The polymer has variable solubility in hexane, methanol, ethanol and water depending on its composition.

Figure: <sup>1</sup>H NMR spectrum of the sample

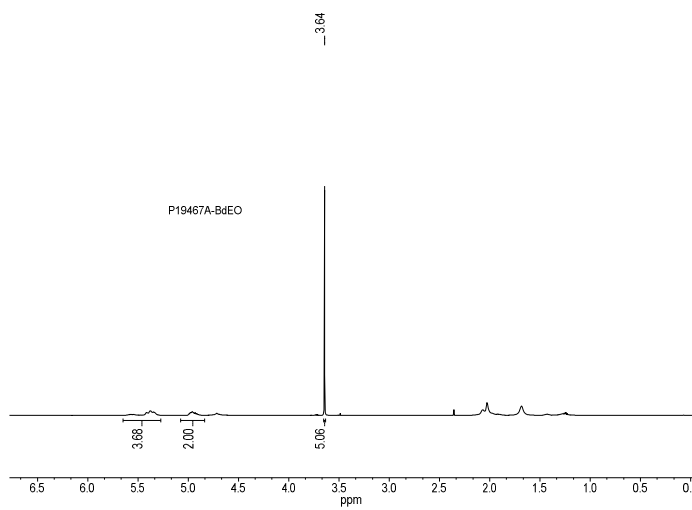
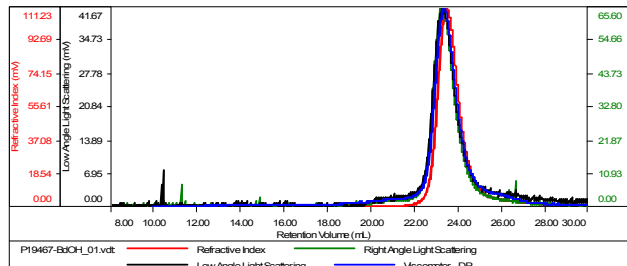


Figure: SEC profile of the first block  
**Sample ID:P19467-BdOH**

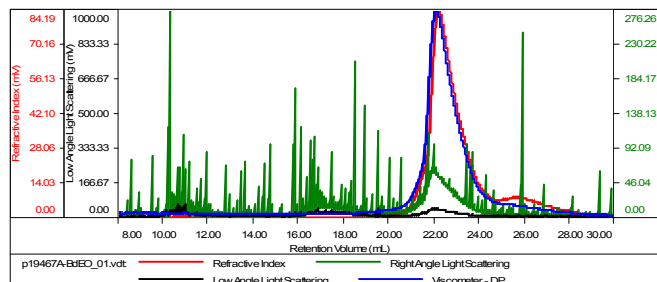
Concentration (mg/mL)	1.0325
Sample dn/dc (mL/g)	0.1250
Method File	PS80K-June30-2015-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P19467-BdOH_01.vdt	60,466	65,094	59,505	1.077	4.7825

**Sample ID:P19467A-BdEO**

Concentration (mg/mL)	1.4542
Sample dn/dc (mL/g)	0.0830
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)
p19467A-BdEO_01.vdt	112,565	129,841	108,158	1.153	3.9882