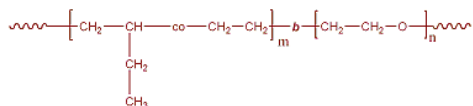


Sample Name: Poly[(ethylene-co-butene)-b-ethylene oxide] (Hydrogenated Poly(1,2-butadiene))

Sample #: P6090-EBEO

Structure:



Composition:

| Mn x 10 ³ EB-b-EO | Mw/Mn (PDI) | % 1,2 addition Butadiene |
|---------------------------------|-------------|-----------------------------|
| 1.3-b-1.5 | 1.09 | 55 |

Characterization:

Polybutadiene polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the vinylic butadiene protons between about 5.0-5.4 ppm with the ethylene oxide protons at 3.6 ppm. Block copolymer PDI is determined by SEC.

Note: The ¹H-NMR of 1,2-polybutadiene is composed of 1 proton signal at 5.4 ppm and 2 proton signals at 5.0 ppm. Signals due to vinylic 1,4-polybutadiene are also present at 5.4 ppm.

Hydrogenation: In presence of Pd catalyst.

Figure: ¹H NMR spectrum of the sample before Hydrogenation

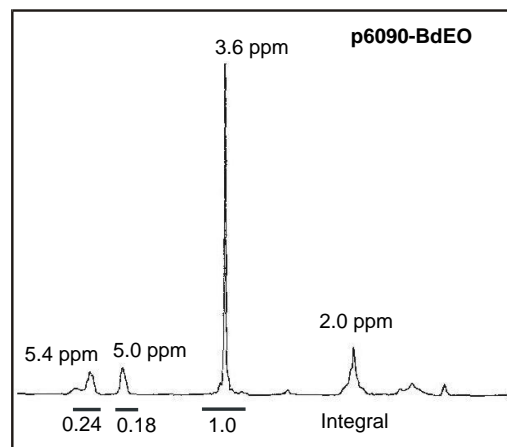
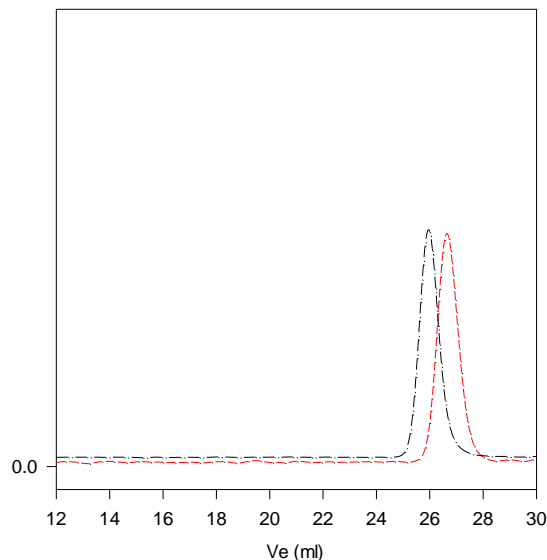


Figure: SEC profile of the block copolymer

P6090-BdEO
(precursor of P6090-EBEO)



Size Exclusion Chromatogram of Poly(butadiene-b-ethylene oxide)

--- Polybutadiene: M_n=1220, M_w=1330, M_w/M_n=1.09
 - - - PBd-b-PEO: M_n PBd(1220)-PEO(1450), M_w/M_n=1.09
 The Mn of PEO is calculated from NMR results,
 The 1,2-addition of PBd block is 56%.