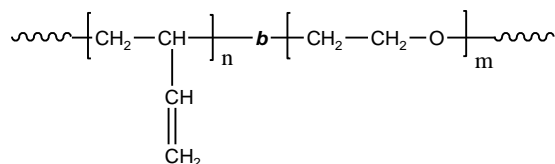


Sample Name: Poly(butadiene-*b*-ethylene oxide)
Poly butadiene rich in 1,2 microstructures

Sample #: P41379-BdEO

Structure:



Composition:

Mn x 10 ³ Bd-b-EO	Mw/Mn (PDI)	% 1,2 addition Butadiene
110.0-b-120.0	1.17	95%

Synthesis Procedure:

The polymer was synthesized by anionic process using cumyl potassium initiator.

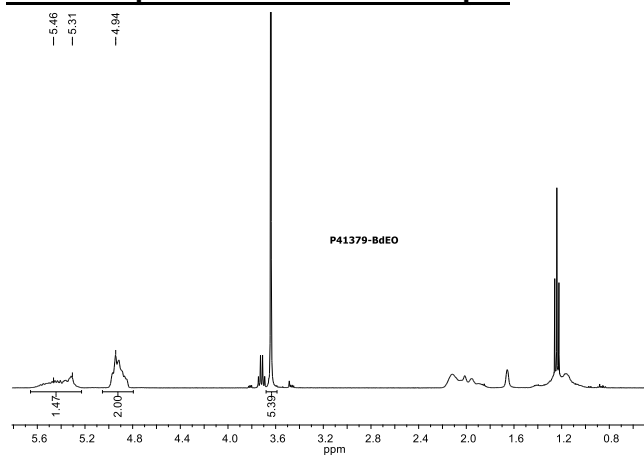
Characterization:

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.

Solubility:

Poly(butadiene-*b*-ethylene oxide) is soluble in THF, CHCl₃, and toluene. The polymer has variable solubility in hexane, methanol, ethanol and water depending on its composition.

¹H NMR spectrum of the BdEO sample:



SEC profile of the block copolymer:

