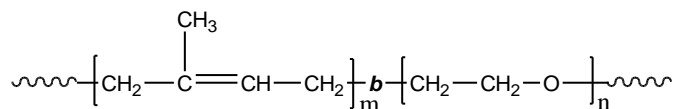


**Sample Name:**

Poly(1,4-isoprene)-b-poly(ethylene oxide)

**Sample #: P18855B-IPEO****Structure:****Composition:**

Mn x 10 <sup>3</sup> PIP-b-EO	Mw/Mn (PDI)
38.0-b-4.0	1.11

**Synthesis Procedure:**

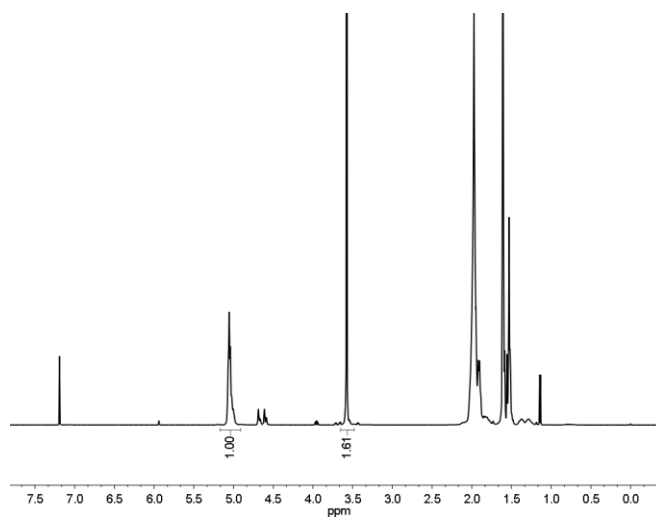
Poly(Isoprene 1,4 addition or 1,2 addition)-b-ethylene oxide) can be prepared by the different routes as reported in the literature (Ref: *Macromolecules* 1996, 29, 6994). The direct synthesis of diblock copolymer using lithium counter ion in the presence of Phosphazene Base *t*-BuP<sub>4</sub> is interesting as reported in *Macromolecules*, **32** (8), 2783 -2785, 1999. These polymers can also be successfully synthesized using different end functionalized polymers as investigated in our laboratory which are proprietary.

**Characterization:**

OH terminated isoprene 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>HNMR 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.

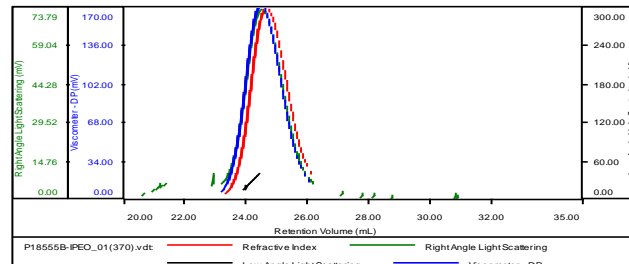
**Solubility:**

Poly(isoprene-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.

**<sup>1</sup>H NMR spectrum of the sample:****SEC profile of the block copolymer:**

Sample ID: P18855B-IPEO

Concentration (mg/mL)	7.5876
Sample dn/dc (mL/g)	0.1150
Method File	PS80K-0903-2014-0000.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)
P18855B-IPEO_01(370).vdt	42,263	47,172	43,032	1.116	0.6709