

Sample Name:

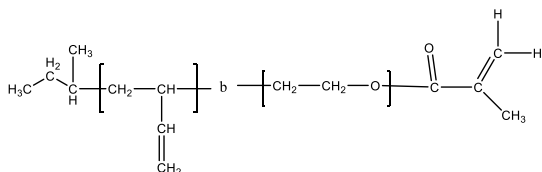
Methacrylate terminated Poly(butadiene-b-ethylene oxide)

Poly butadiene rich in 1,2 or 1,4 microstructure

Sample #: P42512-BdEO-MA

(poly butadiene block rich in 1,2 microstructure)

Structure of 1,2-rich microstructure about 95%:



Composition:

Mn x 10 ³ Bd-b-EO	Mw/Mn (PDI)	% 1,2 addition Butadiene	Methacrylate Functionalization
5.0-b-4.5	1.12	95%	>85%

Synthesis Procedure:

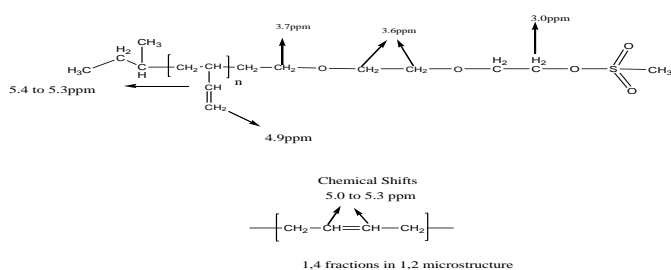
The polymer was synthesized by anionic polymerization process.

Characterization:

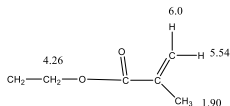
The product was characterized by size exclusion chromatography (SEC), ¹H-NMR and FT-IR.

Solubility:

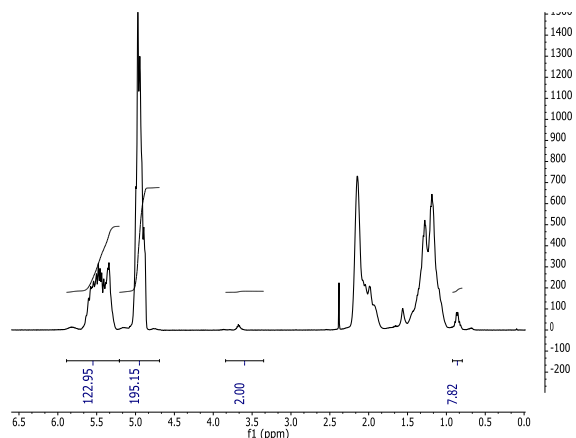
Polymer is soluble in THF, CHCl₃, and toluene. The polymer has variable solubility in hexane, methanol, ethanol and water depending on its composition.



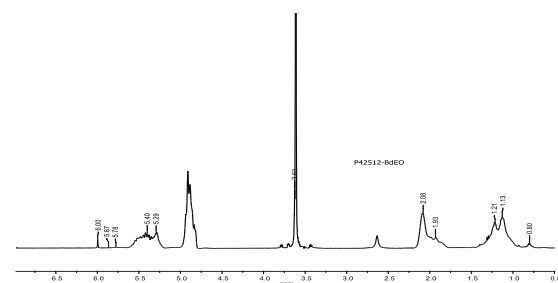
The chemical shifts of Methacrylate end functional group interfere with the chemical shifts of main chains vinyl group, therefore we take into accounts Chemical shifts of CH₂-O CO- at 4.26 and CH=C(CH₃) at 1.9 ppm and the obtained values compare with FTIR using mPEG-Methacrylate Mn of 11,000. The values shows quantitative functionalization.



¹H-NMR spectrum of the sample BdOH terminated:

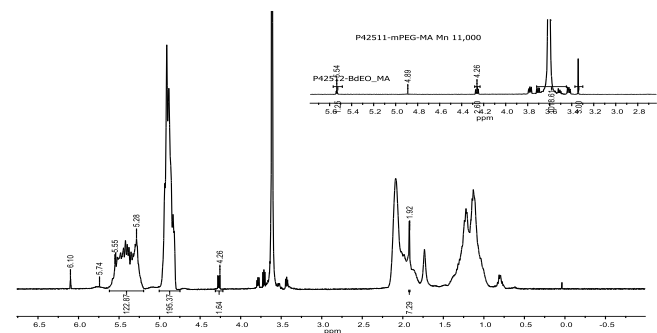


¹H-NMR spectrum of the sample BDEO:

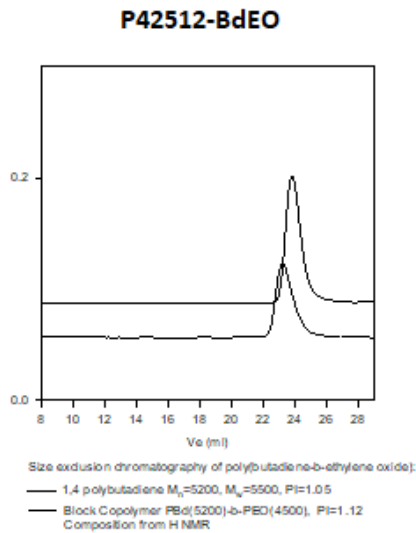


¹H-NMR spectrum of the sample BDEO-Methacrylate terminated:

(in windo shows mPEG MA of Mn 11000 as reference.)



SEC profile of the block copolymer:



FTIR spectrum:

