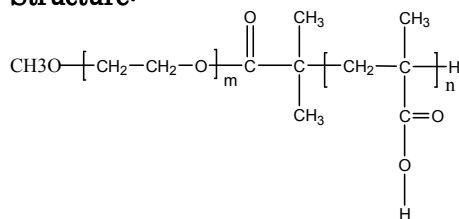


Sample Name: Poly(ethylene oxide -b- methacrylic acid)

Sample #: P6447-EOMAA

Structure:

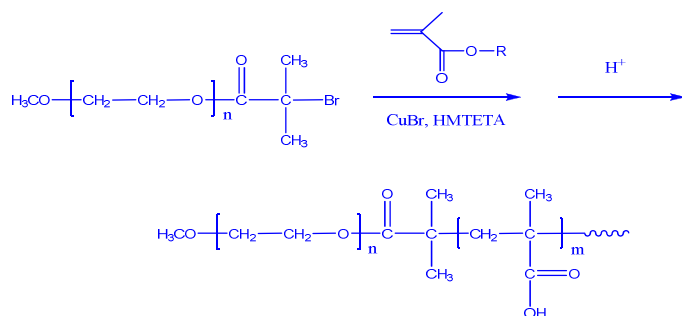


Composition:

Mn x 10 ³	PDI
PEO-b-PMAA	
5.0-b-5.0	1.5

Synthesis Procedure:

Poly(ethylene oxide -b- methacrylic acid) is prepared by living anionic polymerization of ethylene oxide followed by controlled radical polymerization of protected methacrylic acid monomer. The reaction scheme is shown below:



Characterization:

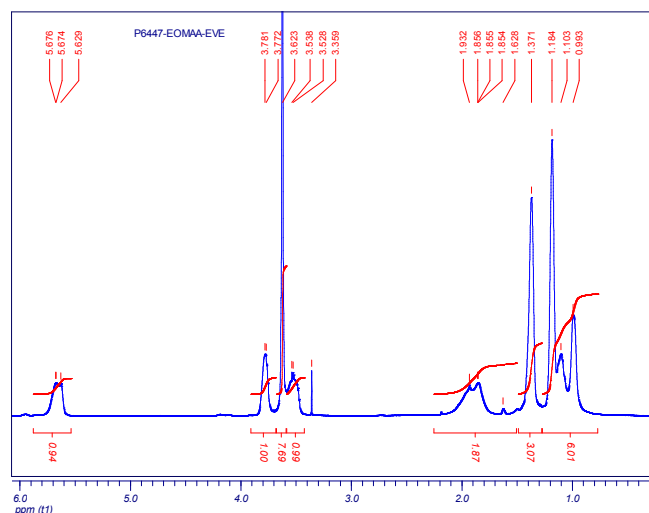
An aliquot of the Poly(ethylene oxide) block was terminated before controlled radical polymerization of the methacrylate block and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the ethylene oxide protons at about 3.7 ppm with the peak area of the methacrylic acid protons at about 1-2.5 ppm. The composition is also calculated according to FTIR showed as followed graph. The results from NMR and FTIR are compatible.

Note: The protected polymethacrylic acid may cause the SEC profile broadening. We still claim the Mw/Mn as the apparent molecular weight. Real Mw/Mn should be narrower

Solubility:

Poly(ethylene oxide -b- methacrylic acid) is soluble in THF, chloroform, methanol and dichloromethane. It is reprecipitated hexanes.

¹H-NMR Spectrum of the block copolymer:



SEC profile of the block copolymer:

