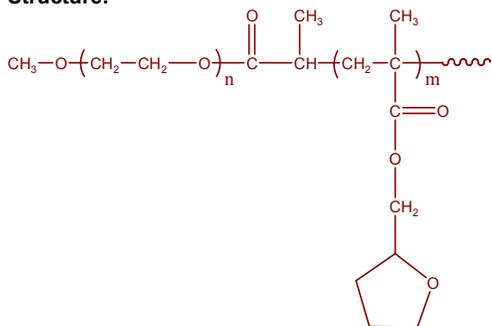


Sample Name: Poly(ethylene oxide-b-tetrahydrofurfuryl methacrylate)

Sample #: P4115- EOTHFMAA

Structure:



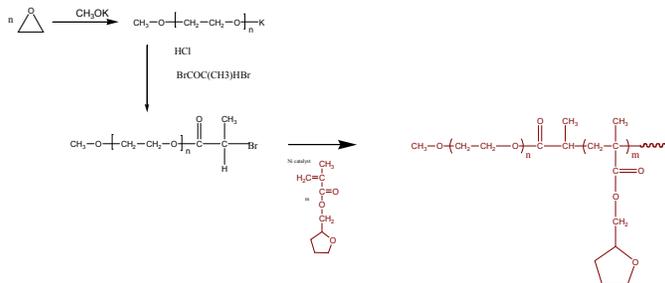
Composition:

Mn x 10 ³ PEO-b-THFMMA	PDI
3.5-b-10.0	1.4

90unit – 32 unit

Synthesis Procedure:

Poly(ethylene oxide -b- tetrahydrofurfuryl methacrylate) is prepared by living anionic polymerization of ethylene oxide and coordination polymerization of - tetrahydrofurfuryl methacrylate. The scheme of the reaction is illustrated below:



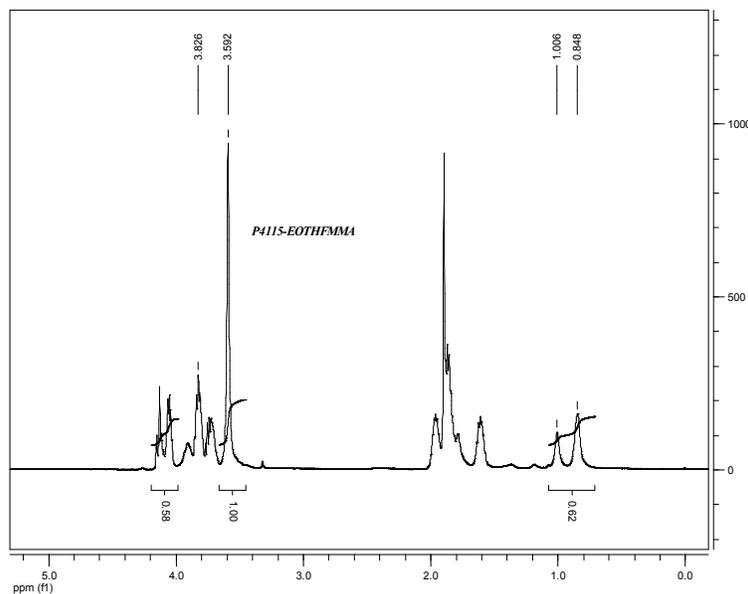
Characterization:

An aliquot of the anionic poly(ethylene oxide) block was terminated before addition of caprolactone 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 3.6 ppm with the methyl protons of - tetrahydrofurfuryl methacrylate at about 0.8 to 1.2 ppm.

Solubility:

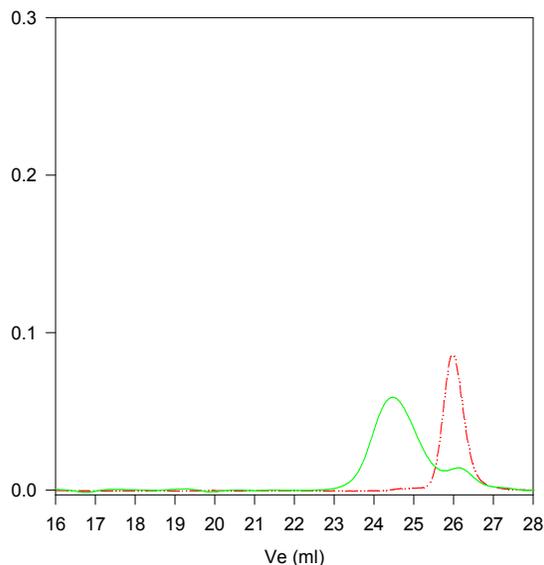
Poly(ethylene oxide -b- tetrahydrofurfuryl methacrylate) is soluble in CHCl₃, THF, DMF, toluene and precipitated out from cold ethanol, diethyl ether.

¹H-NMR Spectrum of the block copolymer:



SEC of the block copolymer:

P4115-EOTHFMAA



Size exclusion chromatography of poly(ethylene oxide-b-tetrahydrofurfuryl methacrylate)
 - - - Poly(ethylene oxide), M_n=3500, M_w=3670, PI=1.05
 — Block Copolymer PEO(3500)-b-THFMMA(10000), PI=1.4
 (composition from H NMR)