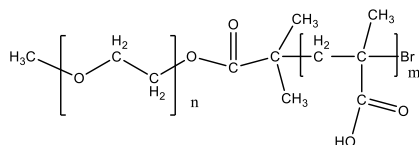


Sample Name:
Poly(ethylene oxide)-b-poly(methacrylic acid)

Sample #: **P43909-EOMAA**

Structure:

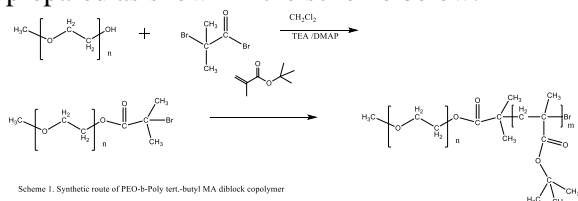


Composition:

Mn x 10 ³ PEO-b-MAA	PDI
5.0-b-4.0	1.4

Synthesis Procedure:

Poly(Ethylene oxide-*t*-Butyl methacrylate) is prepared as shown in the scheme below:



Scheme 1. Synthetic route of PEO-b-Poly tert-butyl MA diblock copolymer

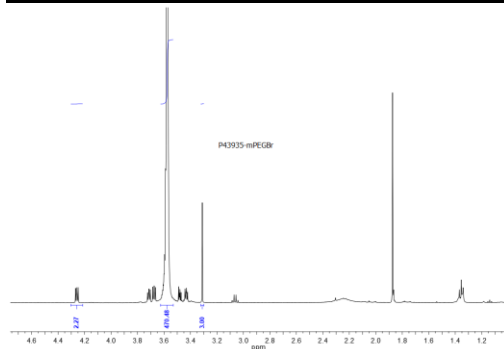
Characterization:

Polymer composition was determined by H NMR taking the integration of PEG block at 3.66 ppm and tert-Butyl ester of *t*-BuMA block at 1.4 ppm. Molecular weights of the first block and the Mw/Mn of the final and the first block was determined by SEC in THF.

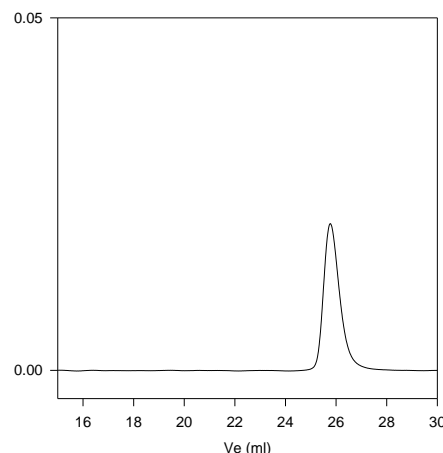
Solubility:

Poly(ethylene oxide -b- *t*BuMA) is soluble in CHCl₃, THF, toluene. The polymer precipitated out from hexane.

H NMR spectrum of the PEGBr Mn of 5000:



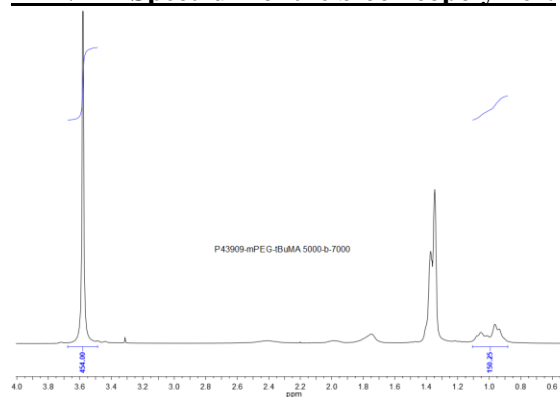
SEC profile of the Sample:mPEG-Br used
P43935-EGOCH3Br



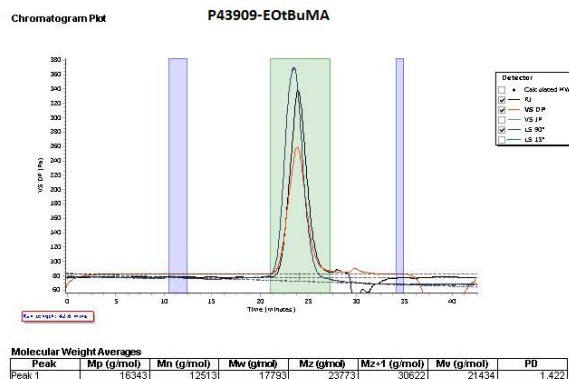
Size exclusion chromatography:

— Bromo terminated Poly(ethylene glycol methyl ether),
M_n=5,000, M_w=5,400, PI=1.06

¹H-NMR Spectrum of the block copolymer:



SEC of the block copolymer:



Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	16343	12513	17793	23773	30622	21434	1.422

After Hydrolysis of tert butyl ester to PEO-b-MAA Mn: 5,000-b-4,000