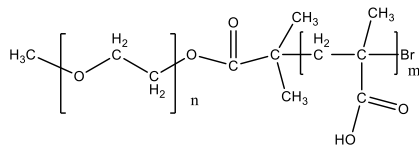


**Sample Name:**  
**Poly(ethylene oxide)-b-poly(methacrylic acid)**

**Sample #: P43938A-EOMAA**

**Structure:**

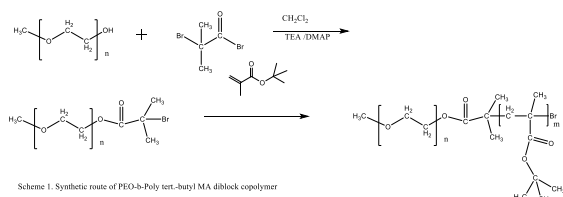


**Composition:**

Mn x 10 <sup>3</sup> PEO-b-MAA	PDI
5.0-b-2.5	2.0

**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

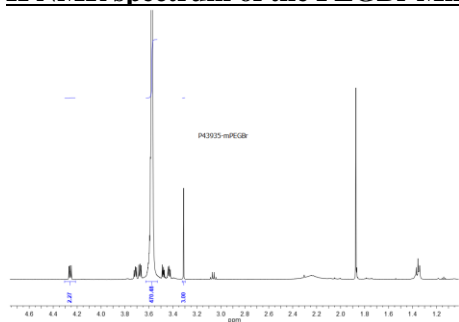
**Characterization:**

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.

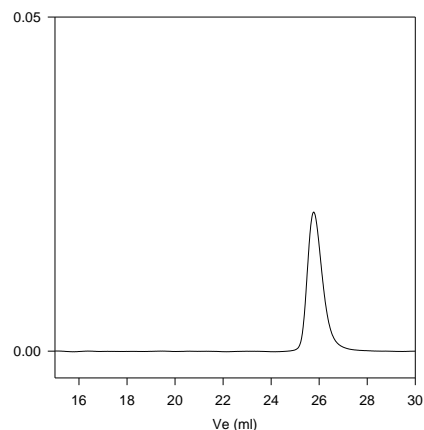
**Solubility:**

Poly(ethylene oxide -b- *t*BuMA) is soluble in CHCl<sub>3</sub>, THF, toluene. The polymer precipitated out from hexane.

**H NMR spectrum of the PEGBr Mn of 5000**



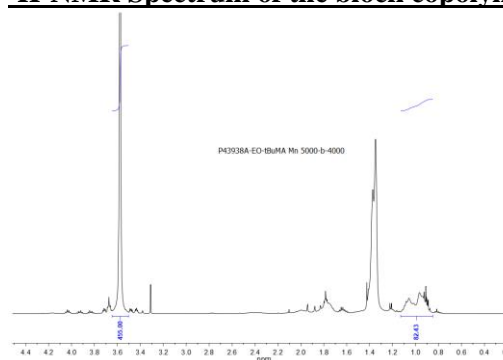
**SEC profile of the mPEG-Br used:**  
**P43935-EGOCH3Br**



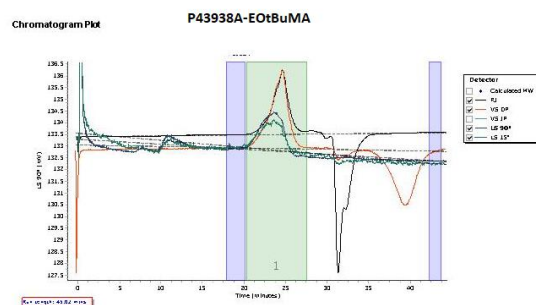
Size exclusion chromatography:

— Bromo terminated Poly(ethylene glycol methyl ether),  
M<sub>n</sub>=5,000, M<sub>w</sub>=5,400, PI=1.06

**<sup>1</sup>H-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)	Mw (g/mol)	PI
Peak 1	3548	8819	17945	42000	84267	30945	2.035

**After Hydrolysis of tert butyl ester to PEO-b-MAA Mn: 5000-b-2,500**