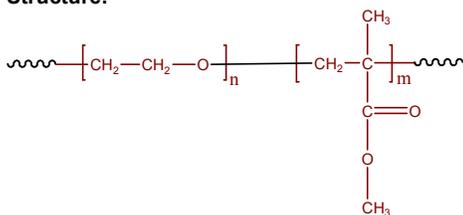


Sample Name:

Poly(ethylene oxide-b-methylmethacrylate)

Sample #: P4771-EOMMA

Structure:

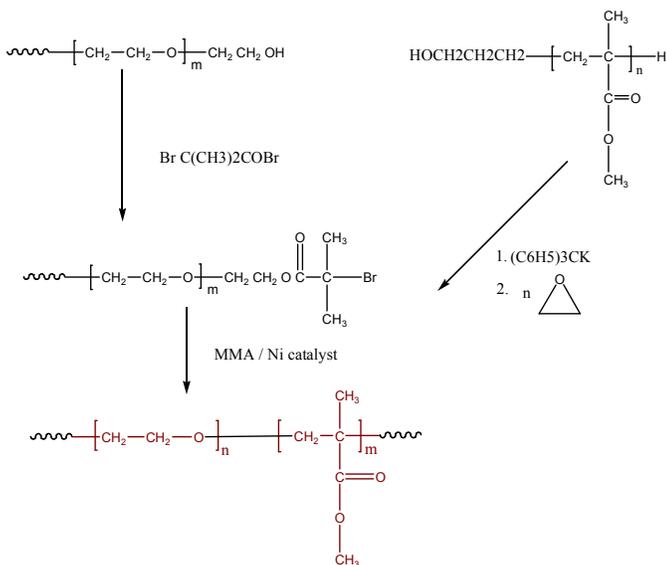


Composition:

Mn x 10 ³ PEO-b-MMA	PDI
4.0-9.5	1.30

Synthesis Procedure:

Poly(methyl methacrylate -b- ethylene oxide) is prepared by different routes. The scheme of the reactions are illustrated below:



Purification of the polymer:

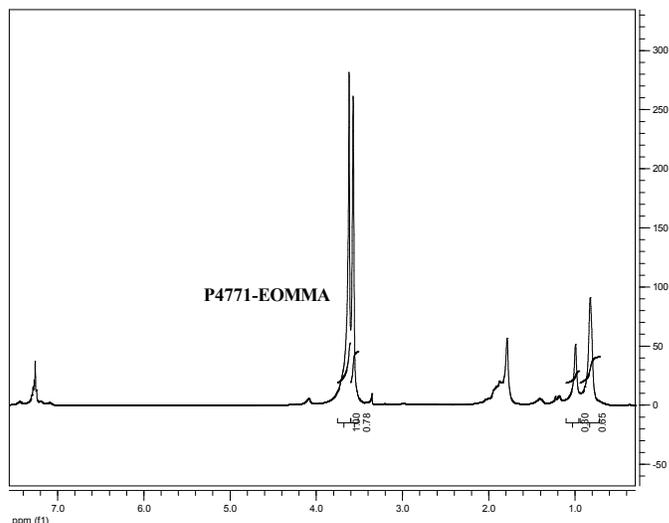
From the obtained polymer the un-reacted PEG can be removed by stirring the polymer in hot water. The obtained polymer dissolved in $CHCl_3$ /Toluene and pass through the column packed with silica. The Diblock copolymer obtained by second route where the macroinitiator of PEG bearing Br terminal group was used to initiate polymerization of MMA. The obtained polymer dissolved in toluene/ $CHCl_3$ was passed through a column packed with silica to remove the traces amount of Nickel catalyst. The polymer was further purified by stirring in hot water to remove un-reacted PEG macroinitiator. The polymer was recovered by precipitation in cold ether/hexane mixture.

Characterization:

Solubility:

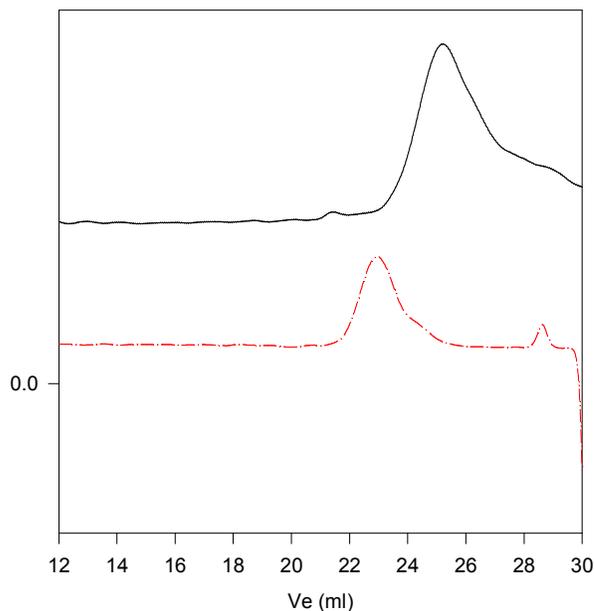
Poly(ethylene oxide -b- MMA) is soluble in $CHCl_3$, THF, toluene. The polymer precipitated out from hexane.

¹H-NMR Spectrum of the block copolymer:



SEC of the block copolymer:

P4771-EOMMA



Size exclusion chromatography of poly(EO-b-MMA)

--- PMMA-OH terminated, M_n=9500, M_w=13200, M_w/M_n=1.4

— Poly(ethylene glycol-b-Methylmethacrylate)
Mn: PEO(4000)-b-MMA(9500) M_w/M_n=1.3
Composition from ¹H NMR