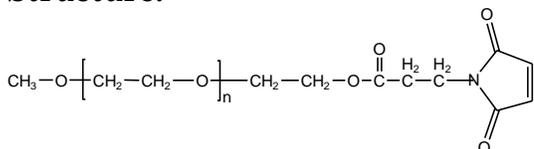


Sample Name:

α -Methoxy ω - Maleimido end functionalized Poly(ethylene glycol)

Sample #: P14233-EGOCH3Maleimido

Structure:

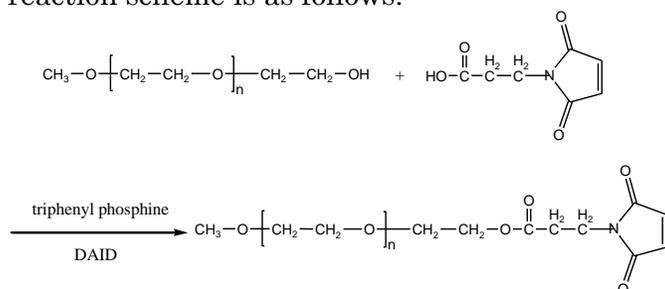


Composition:

Mn x 10 ³	PDI
4.2	1.15
Maleimido functionality by HNMR	~ 40 %

Synthesis Procedure:

α -Methoxy ω - Maleimido end functionalized Poly(ethylene glycol) was synthesized by anionic living polymerization of ethylene oxide using ethylene glycol/potassium salt as an initiator, followed by the conversion of hydroxyl end group into 3-maleimidopropionate group by reacting them with 3-maleimidopropionic acid. The reaction scheme is as follows.



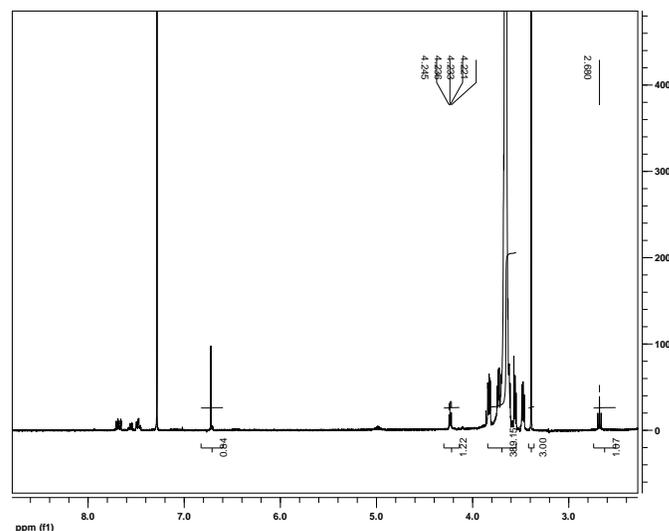
Solubility:

Functionalized poly(ethylene oxide) is soluble in CHCl₃, THF, and precipitated out from cold diethyl ether.

Characterization:

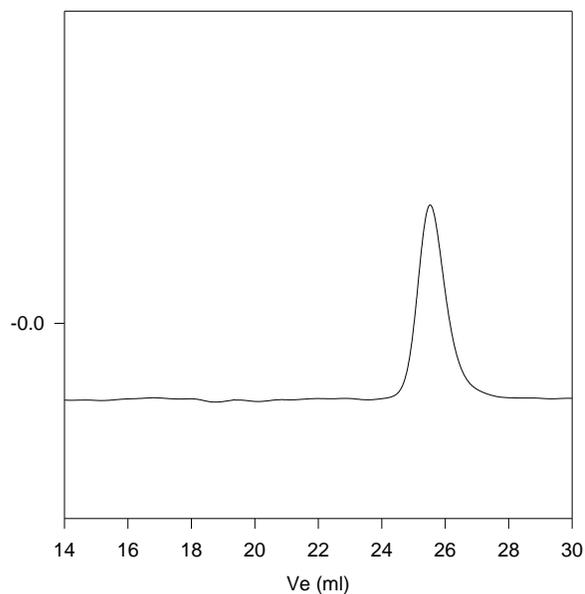
Polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The polymer obtained at each step and the final block copolymer composition was calculated from 1H-NMR spectroscopy. Product analysis by SEC after converting to maleimido end group shows strong adsorption with the column packing material of the SEC.

NMR of α -Methoxy ω - Maleimido end functionalized PEG:



SEC of the polymer:

P14233-EG-OCH3-Maleimido



Size exclusion chromatography of poly(ethylene glycol methyl ether) before converting terminal OH group to ester group :
M_n=4200, M_w=4800, PI=1.15