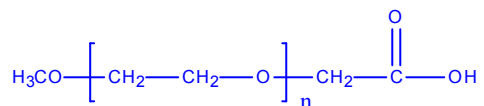


Sample Name:

ω -Carboxyl Terminated Poly(ethylene glycol) methyl ether (O-Acetic Acid Ester Terminal group)

Sample #: **P14171-EGOCH₃CH₂COOH**

Structure:

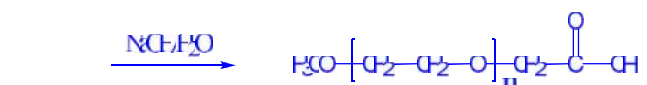
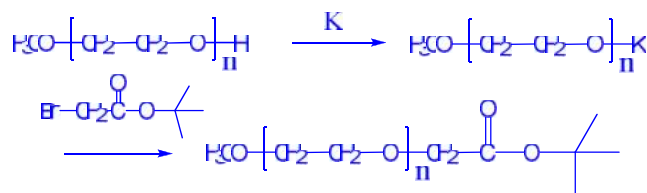


Composition:

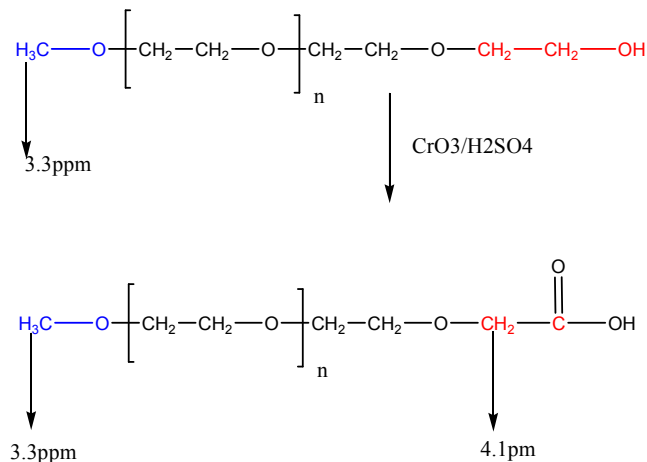
Mn × 10 ³	PDI
11.0	1.15
COOH Functionality by HNMR	0.99
COOH functionality by titration	0.98

Synthesis Procedure:

Carboxy terminated poly(ethylene glycol) was synthesized by anionic living polymerization of ethylene oxide using ethylene glycol/potassium salt as an initiator. The hydroxyl end groups were converted into carboxyl groups by reacting them with 2-bromoacetate or using Jones Reagent (CrO₃ H₂SO₄) as oxidizing agent. The reaction is illustrated as Scheme 1.



or:



Characterization:

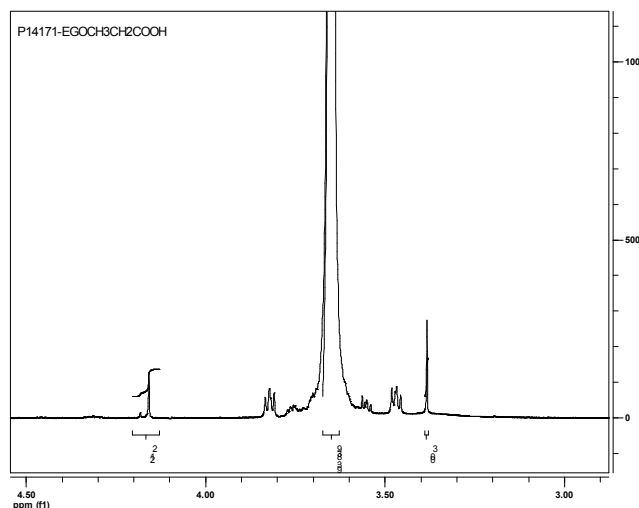
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

Functionality: Functionality of the polymer was determined by ¹H NMR analysis or FT-IR spectroscopy.

Solubility:

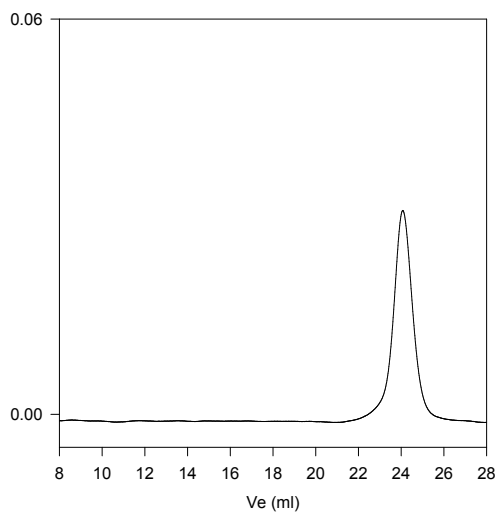
Polymer is soluble in water, methanol and ethanol, THF, CHCl₃. It is precipitated out from cold ethanol, isopropanol, hexane and ether.

NMR of Sample:



SEC of Polymer

P14171-EGOCH₃CH₂COOH



Size Exclusion Chromatography of Polyethylene glycol methyl ether before converting terminal OH to COOH M_n=11000, M_w=12500, PI=1.15