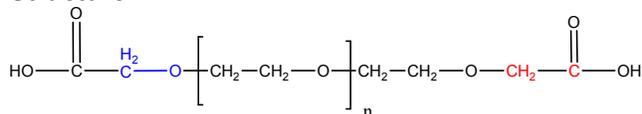


Sample Name:

α - ω - O-acetic acid terminated Poly(ethylene glycol)

Sample #: P14182-EG2CH2COOH

Structure:

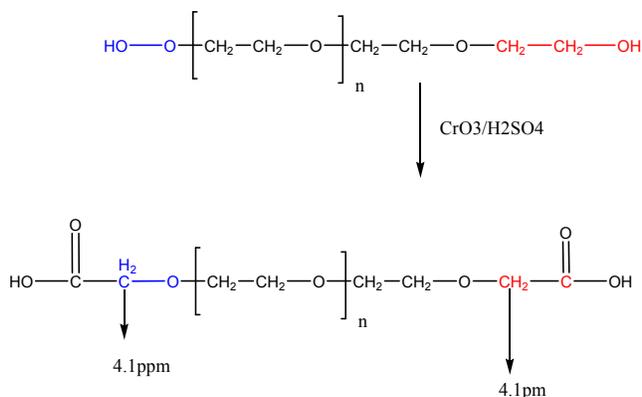


Composition:

Mn x 10 ³	PDI
30	1.40
COOH Functionality by HNMR	0.98

Synthesis Procedure:

α -Carboxy ω -methoxy terminated poly(ethylene glycol) was synthesized by a simple procedure. The details can be found in the US patent published.¹



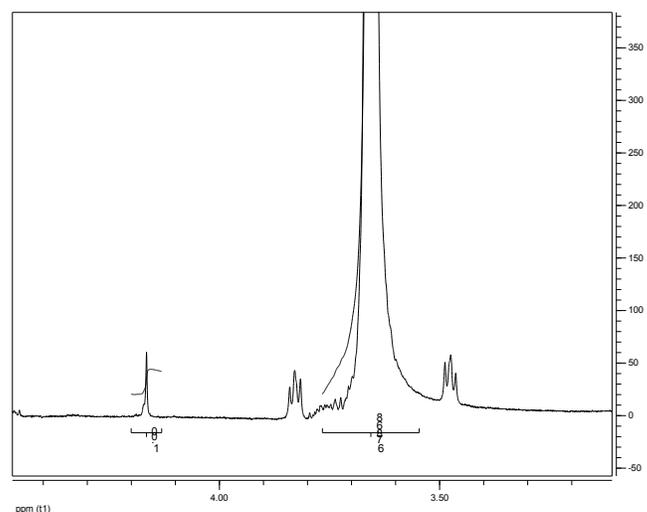
Characterization:

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 acid base titration and from H NMR analysis.

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

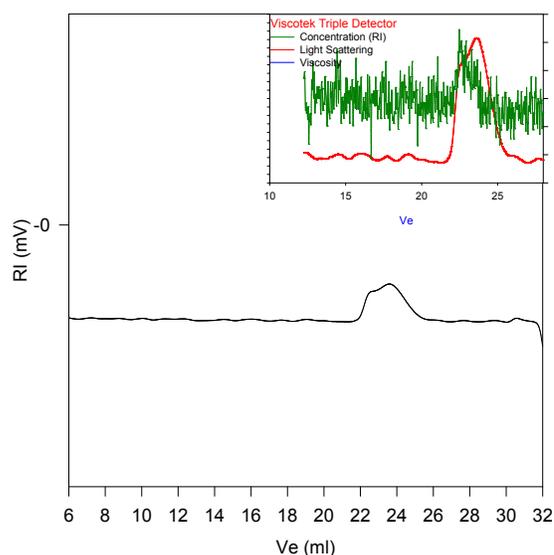
NMR of the product



SEC of the product:

before converting the terminal end group to COOH

P14182-EG2OH



Size Exclusion Chromatography of poly(ethylene glycol) or Poly (ethylene Oxide);

— Mn = 30,000, Mw = 42,000, Mw/Mn = 1.4

Reference (s):

S. K. Varshney, J.X. Zhang, US patent 7,009,033 B2, 2006

Assigned to Polymer source, Inc. Canada Heterofunctional Polyethylene glycol and Poly ethylene oxide, process for their Manufacture