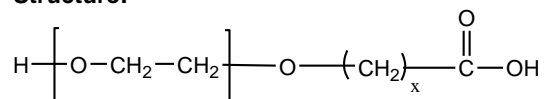


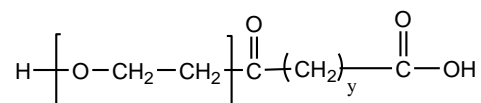
Sample Name:

**α -Carboxy ω -Hydroxy Terminated
Poly(ethylene glycol)**

Sample #: P2434-EGCOOH

Structure:

or



$x = 3, 4, 11$ $y = 2, 3$

Composition:

$M_n \times 10^3$	PDI
2.0	1.12

Synthesis Procedure:

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

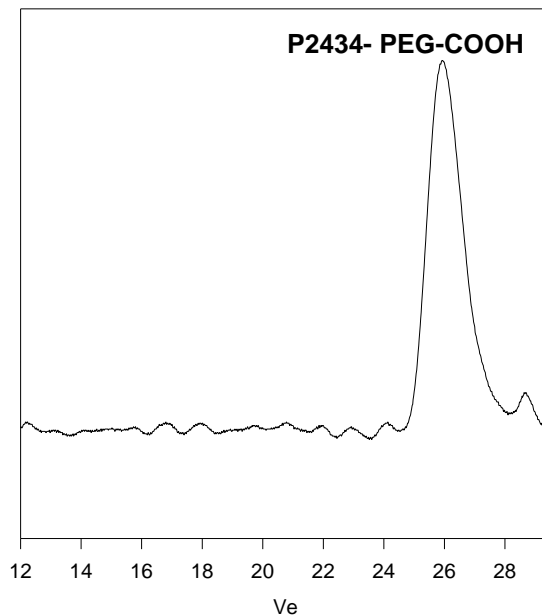
Characterization:

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, CHCl_3 . It is precipitated out from cold ethanol, isopropanol, hexane and ether.

SEC of Sample:

Size Exclusion Chromatography profile of the product:
 $M_n = 1600$ (SEC w.r.t PEG calibration), $M_n / M_w = 1.12$
 M_n : by titration (2000)

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