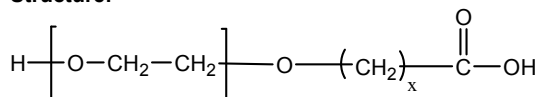


**Sample Name:**

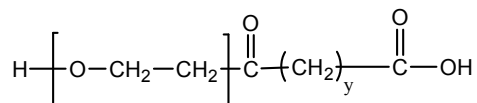
**$\alpha$ -Carboxy  $\omega$ -Hydroxy Terminated Poly(ethylene glycol)**

**Sample #: P2264-EGCOOH**

**Structure:**



or



$x = 3, 4, 11$        $y = 2, 3$

**Composition:**

$M_n \times 10^3$	PDI
4.0	1.17

**Synthesis Procedure:**

$\alpha$ -Carboxy  $\omega$ -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.<sup>1</sup>

**Characterization:**

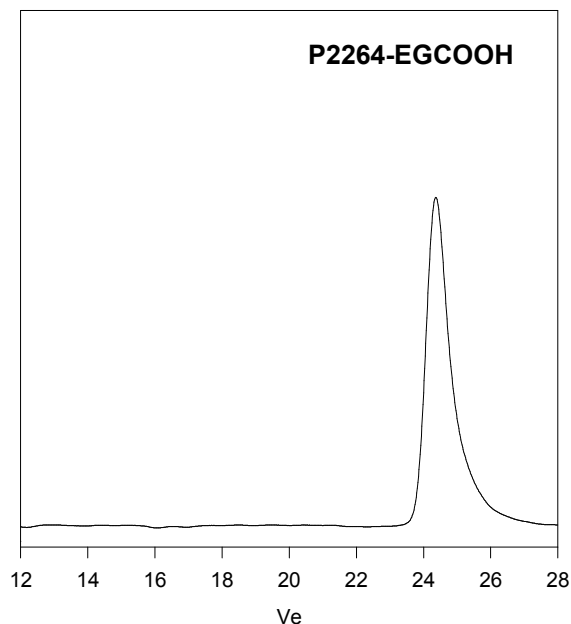
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

**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,  $\text{CHCl}_3$ . It is precipitated out from cold ethanol, isopropanol, hexane and ether.

**SEC of Sample:**



Size Exclusion Chromatography profile of the product:

$M_n = 4000$ ,  $M_w = 4700$ ,  $PI = 1.17$

**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