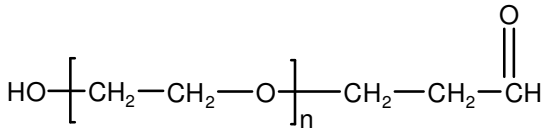
Sample Name: **α-Formyl-,ω-Hydroxy-Terminated Poly(ethylene glycol)**

Sample # **P6206-EGCHO**

Structure:

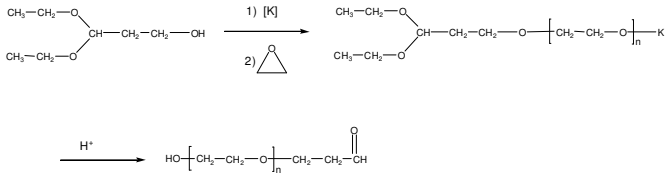


Composition:

$M_n \times 10^3$	M_w/M_n
1.4	1.10

Synthesis Procedure:

α-Formyl-,ω-hydroxy-terminated poly(ethylene glycol) was synthesized by anionic living polymerization of ethylene oxide using diethoxypropanol (acetal) as an initiator followed by deprotection of the end-group (hydrolysis in presence of acetic acid). A scheme of the reaction is presented below.



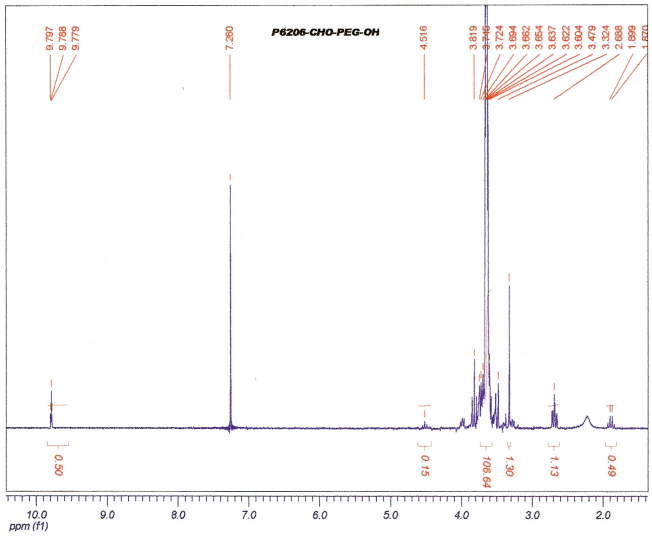
Characterization:

The molecular weight and polydispersity index (M_w/M_n) of the polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. Polymer functionality was determined by proton NMR spectroscopy.

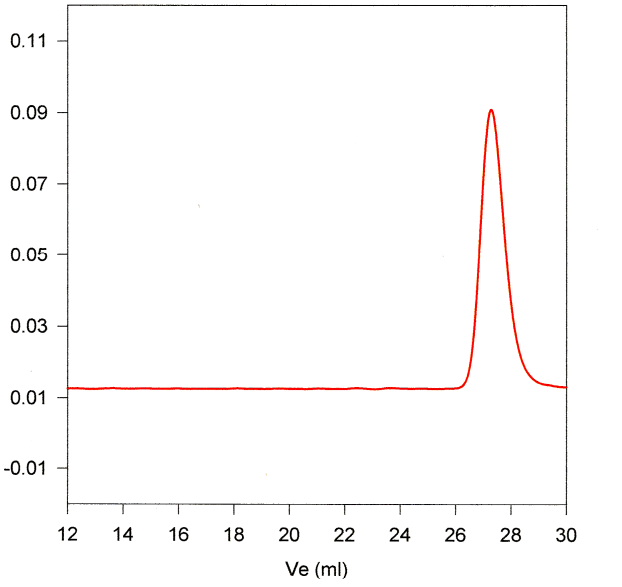
Solubility:

Polymer is soluble in water, methanol, ethanol, THF, and $CHCl_3$. It precipitates from cold ethanol, iso-propanol, hexane, and ether.

^{1}H NMR spectrum of the polymer in $CDCl_3$:



SEC elugram of the polymer in THF:



Size exclusion chromatography of α-formyl-ω-hydroxy poly(ethylene glycol):

Poly(ethylene glycol) aldehyde:

M_n=1400, M_w=1500, M_w/M_n=1.10