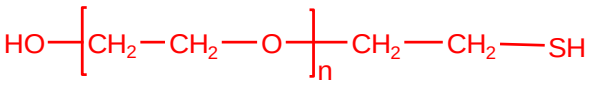
Sample Name:

α-Hydroxy- ω-Thiol terminated Poly(ethylene glycol)

Sample #: **P8936- EGSHOH**

Structure:

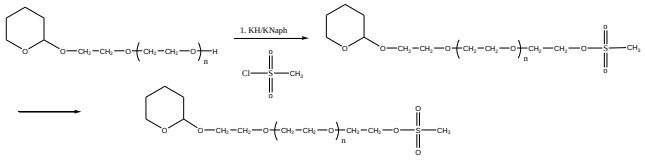


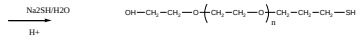
Composition:

Mn x 10^3	PDI
2.5	1.15

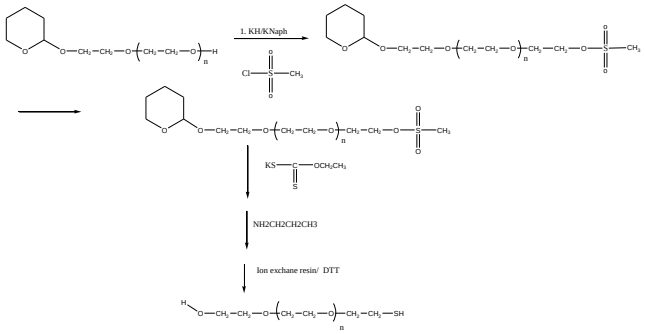
Synthesis Procedure:

α-Hydroxy-ω-thiol terminated poly(ethylene glycol) was prepared by one of the following route:





or:



Characterization:

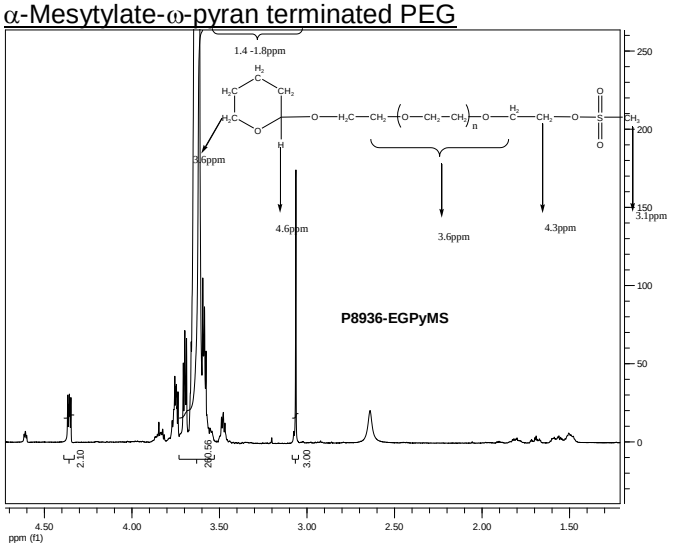
An aliquot of the poly(ethylene oxide) before addition of mestyl chloride was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The polymer obtained at each step and the final block copolymer composition was calculated from ^{1}H-NMR spectroscopy.

Solubility:

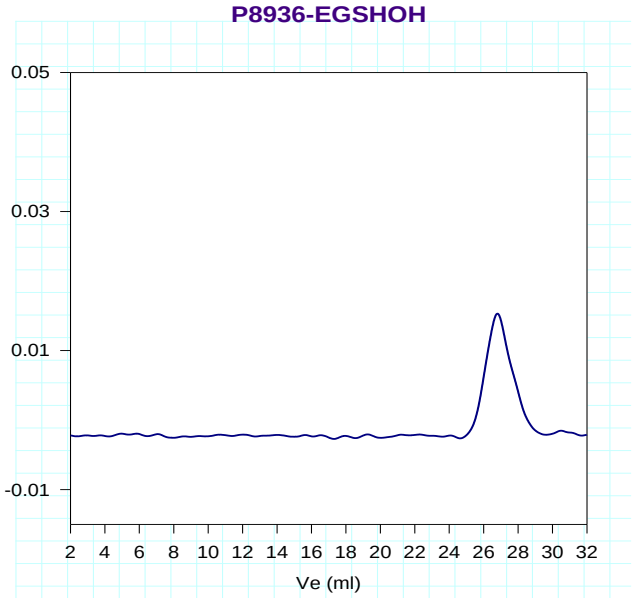
This functionalized Poly(ethylene oxide) is soluble in CHCl3, THF, and precipitated out from cold ethanol, diethyl ether.

^{1}H-NMR Spectrum of the starting polymer:

α-Mesytylate-ω-pyran terminated PEG



SEC of the polymer :



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

M_n=2500, M_w=2900, M_w/M_n=1.15

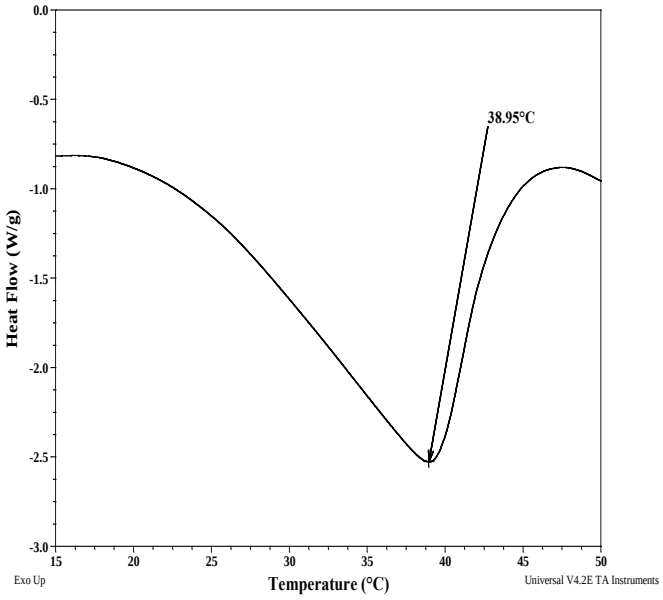
Thermal analysis of the sample# P8936-EGSHOH

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min.The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Melting and crystallization curve for the sample

The melting temperature (T_m) was taken as the maximum of the endothermic peak where as the crystallization temperature (T_c) was considered as the minimum of the exothermic peak.

Melting curve for the sample:



Thermal analysis results at a glance

Sample	T_m (°C)	T_c (°C)	T_g (°C)
EGTMS	39	12	Not distinct

Crystallization curve for the sample: