Sample Name:

∝ pyran ω- mesylate end functionalized Poly(ethylene glycol)
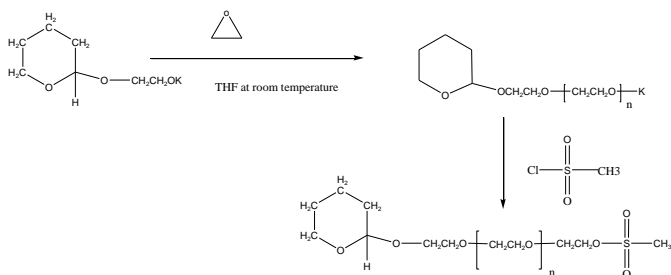**Sample #: P8936A- EGPyMS**

Structure:

Composition:

Mn $\times$ 10^3	PDI
2.5	1.15

Synthesis Procedure:

Mesylate functionalized Poly(ethylene oxide) is prepared by living anionic polymerization of ethylene oxide. The scheme of the reaction is illustrated below:
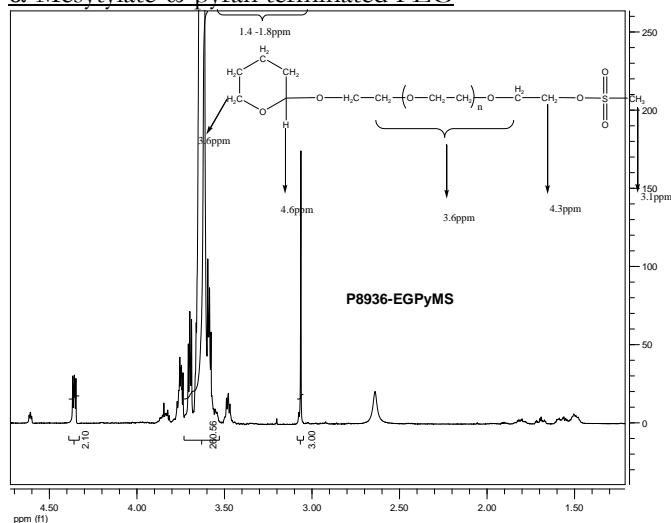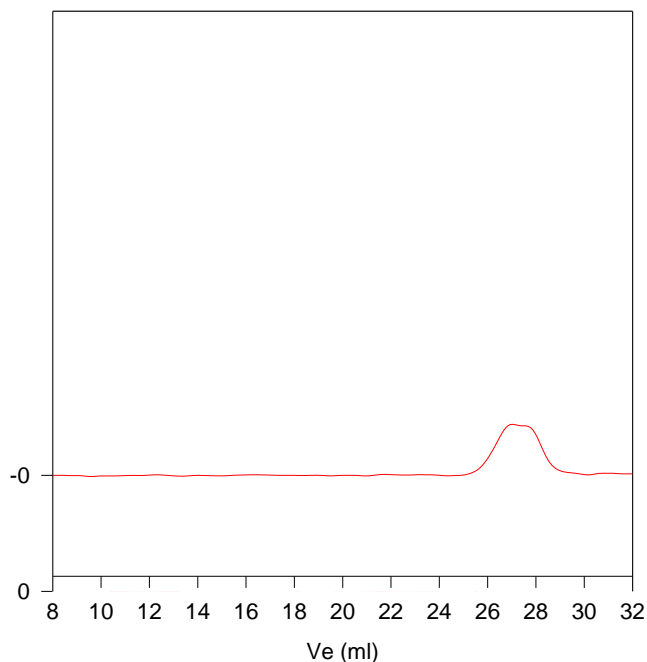

Characterization:
An aliquot of the poly(ethylene oxide) before addition of mesyl chloride was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The polymer obtained at each step and the final block copolymer composition was calculated from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

Solubility:
N3 end functionalized poly(ethylene oxide) is soluble in CHCl$_3$, THF, and precipitated out from cold ethanol, diethyl ether.

^{1}H-NMR Spectrum of the polymer and the final block copolymer at different stages:

α-Mesytylate-ω-pyran terminated PEG

SEC of the polymer :

P8936a-EGPYMS

Size exclusion chromatograph of the Polymer;
M$_n$=2500, M$_w$=2800   Mw/Mn =1.15

Thermal analysis of the P8936A-EGPyMS

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).
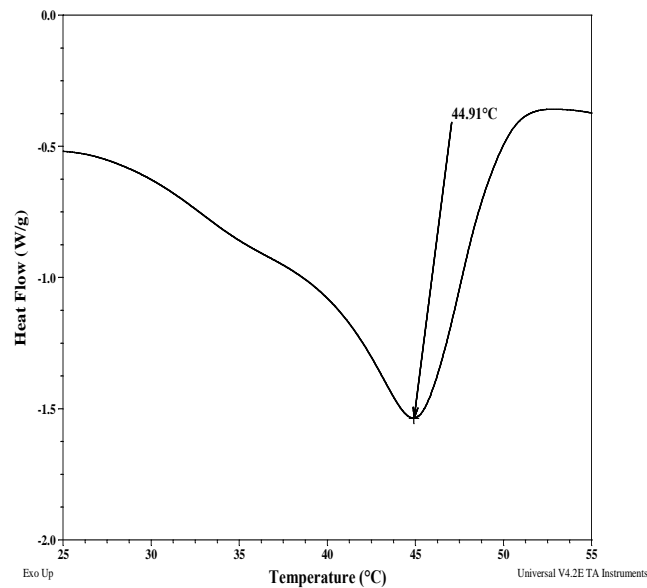
Melting and crystallization curve for the sample

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.
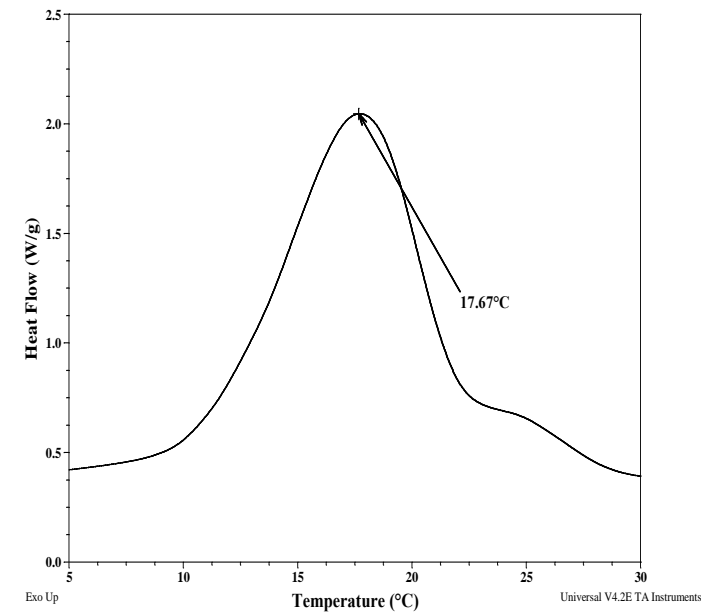
Thermal analysis results at a glance

Sample	T_m (°C)	T_c (°C)	T_g (°C)
EGPyMS	45	18	-54

Thermogram for the PEO block

Melting curve for the polymer:

Crystallization curve for the polymer: