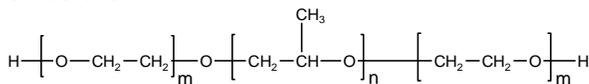


### Sample Name:

Poly(ethylene oxide-b-propylene oxide-b-ethylene oxide)

Sample #: P9810-EOPOEO

Structure:

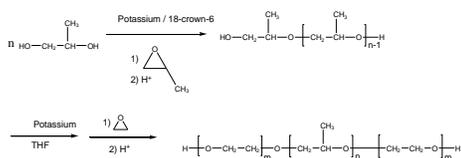


### Composition:

Mn x 10 <sup>3</sup>	PDI
1.4-b-0.55-b-1.4	1.13
Dp: 32-b-9-b-32	

### Synthesis Procedure:

Poly(ethylene oxide-b-propylene oxide-b-ethylene oxide) is prepared by living anionic polymerization with sequence addition of propylene oxide followed by ethylene oxide. The scheme of the reaction is illustrated below:



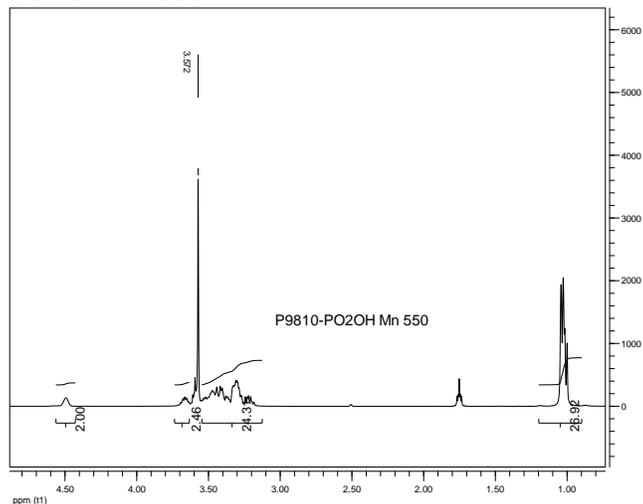
### Characterization:

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.

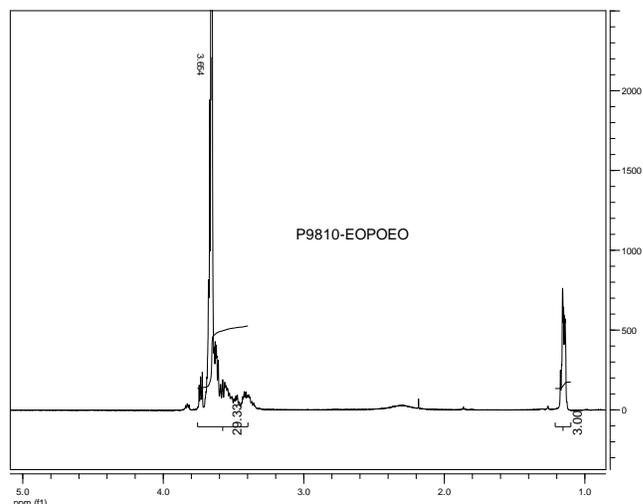
### Solubility:

Polymer is soluble in THF, CHCl<sub>3</sub>, and toluene.

### PO2OH Mn550

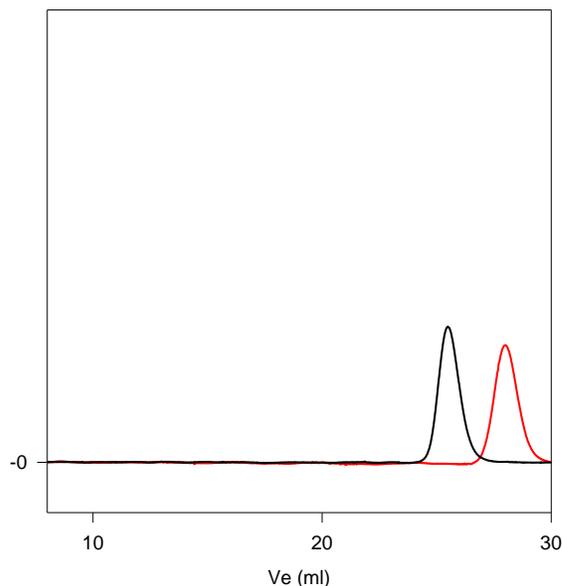


### HNMR of the Polymer:



### SEC of Sample:

P9810-EOPOEO



Size exclusion chromatography of:  
(ethylene oxide-propylene oxide-ethylene oxide) triblock copolymer:

- Poly(propylene oxide) center block: M<sub>n</sub>=550, M<sub>w</sub>=630, M<sub>w</sub>/M<sub>n</sub>=1.15
- Block Copolymer EO(1400)-b-PO(550)-b-EO(1400), M<sub>w</sub>/M<sub>n</sub>=1.13

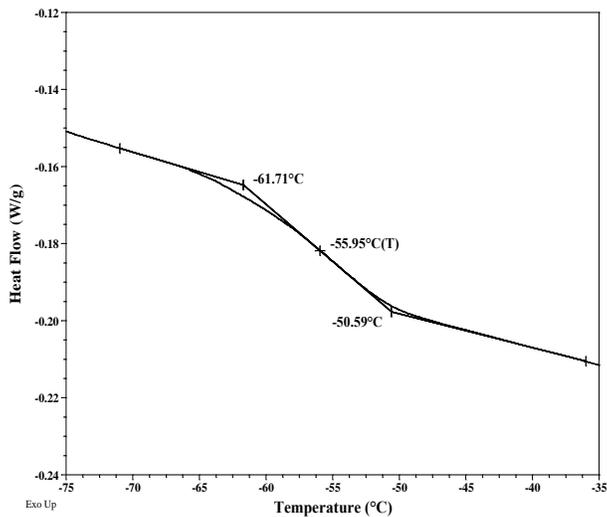
## Thermal analysis of the sample# P9810-EOPOEO

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 ( $T_g$ ).

### Thermal analysis results at a glance (EO-PO-EO)

Sample	$T_m$ (°C)	$T_c$ (°C)	$T_g$ (°C)
EO block	46	17	-56
PO block	-	-	-

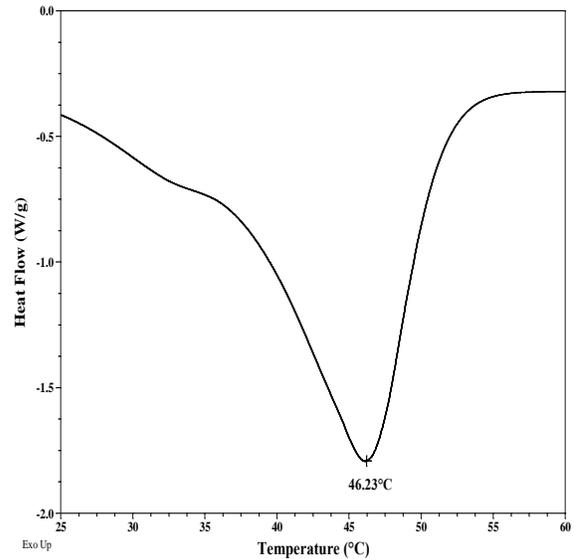
### Typical thermogram for the EO block



## 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 PEO block:



### Crystallization curve for PEO block:

