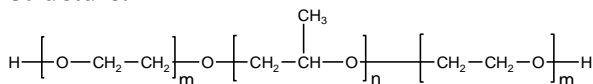


Poly(ethylene oxide-b- propylene oxide -b-ethylene oxide)

Sample #: P9824-EOPOEO

Structure:



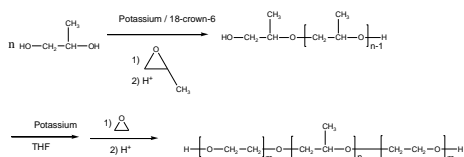
Composition:

Mn x 10 ³	PDI
1.9-b-0.55-b-1.9	1.10
Dp: 43-b-9-b-43	

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:



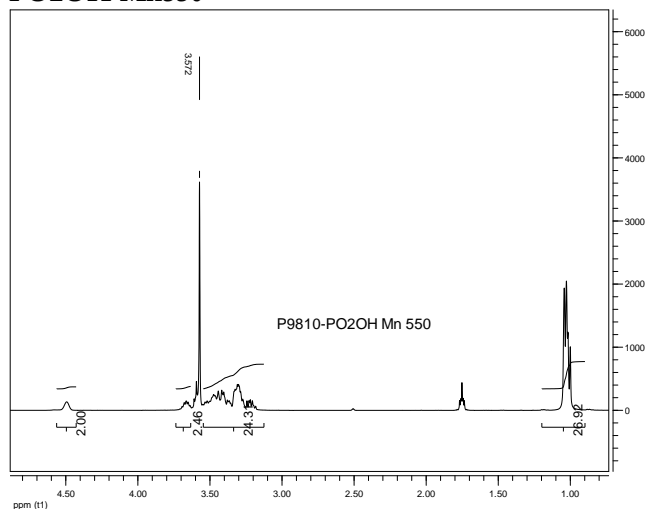
Characterization:

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.

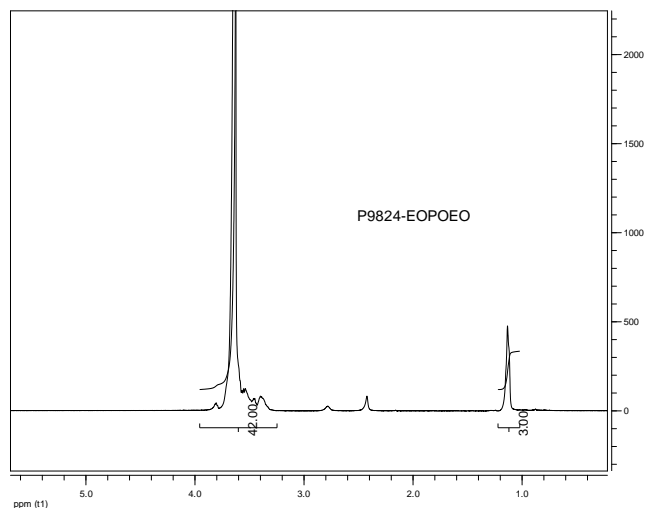
Solubility:

Polymer is soluble in THF, CHCl₃, and toluene.

PO2OH Mn550

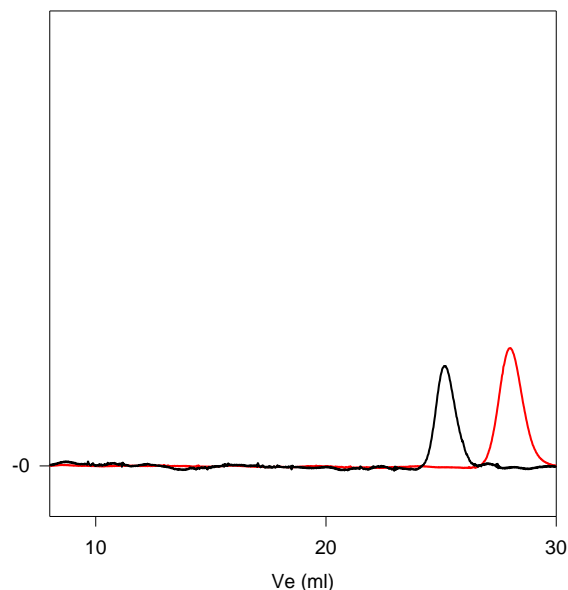


HNMR of the Polymer:



SEC of Sample:

P9824-EOPOEO



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

— Poly(propylene oxide) center block: $M_n=550$, $M_w=630$, $M_w/M_n=1.15$

— Block Copolymer EO(1900)-b-PO(550)-b-EO(1900), $M_w/M_n=1.10$

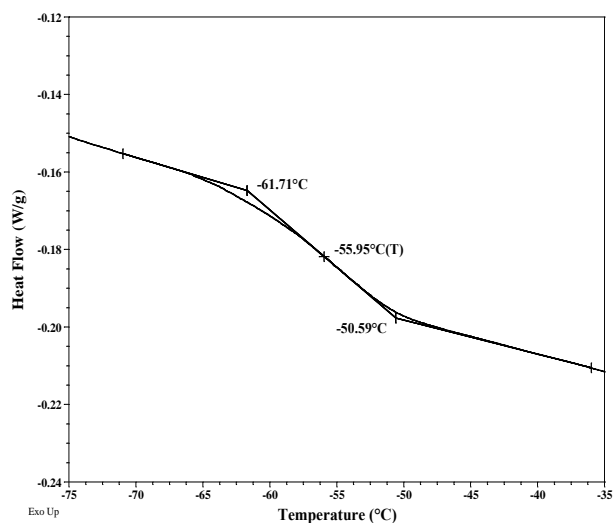
Thermal analysis of the sample# P9824-EOPOEO

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		-	-

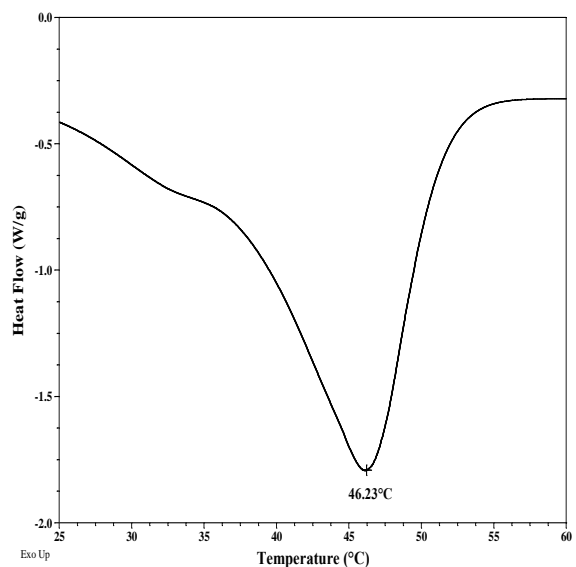
Typical thermogram for the EO block



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:

