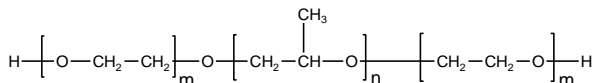


Sample Name:

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

Sample #: P6070-EOPOEO

Structure:

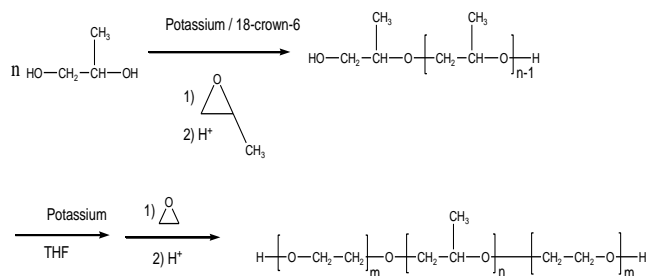


Composition:

Mn x 10 ³	PDI
4.7-b-2.6-b-4.7	1.06

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:



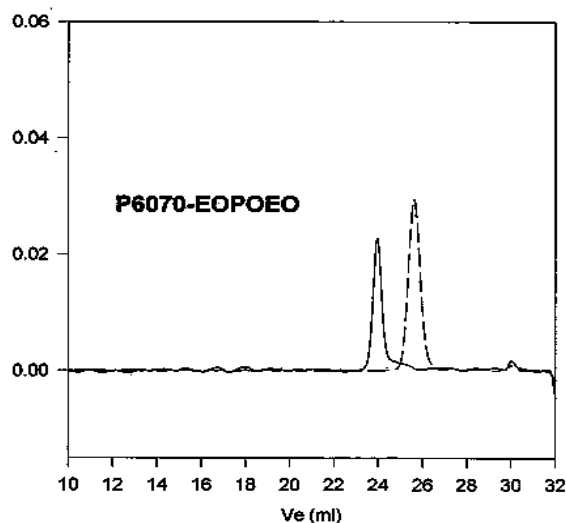
Characterization:

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:

The polymer is soluble in THF, CHCl₃, and toluene.

SEC of Sample:

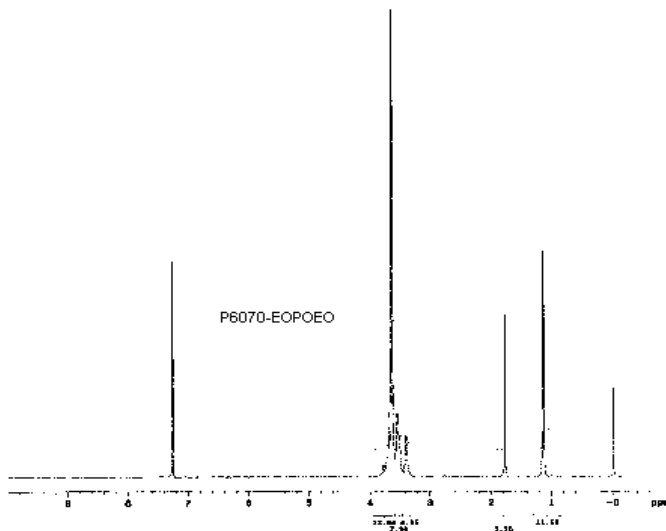


Size Exclusion Chromatogram of Hydroxyl terminated Poly(ethylene oxide-b-propylene oxide-b-ethylene oxide)

— Poly(propylene oxide) center block: $M_n=2800$, $M_w=2730$, $M_w/M_n=1.05$

— PEO-*b*-PPO-*b*-PEO: M_n 4700-2600-4700, $M_w/M_n=1.06$

¹H NMR of the Polymer:



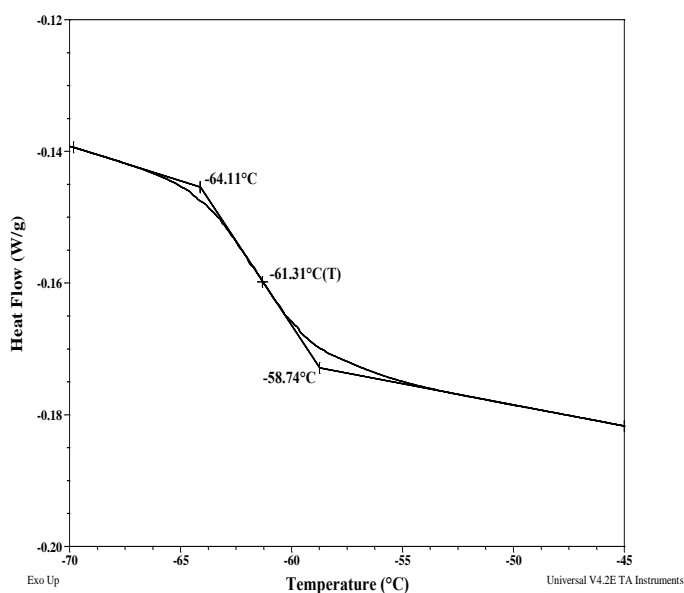
Thermal analysis of the sample# P6070-EOPOEO

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	59	31	-61
PO block		-	-61

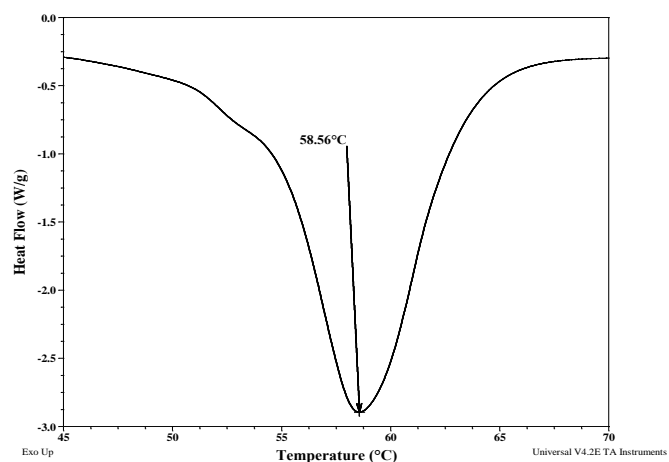
Typical thermogram for the PO-EO block



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:

