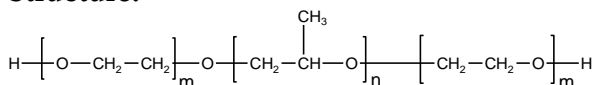


Sample Name:

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

Sample #: P8749-EOPOEO

Structure:

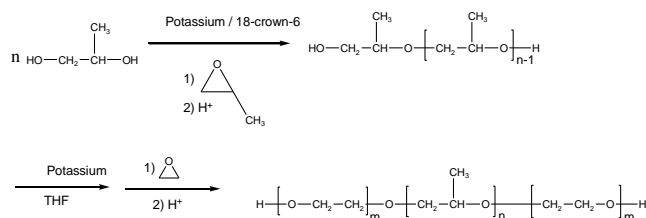


Composition:

Mn x 10 ³	PDI
5.8-b-3.2-b-5.8	1.16

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:

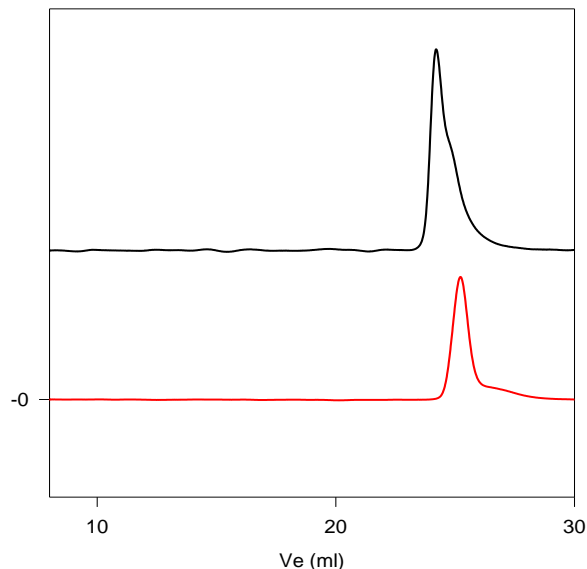
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

Solubility:

Polymer is soluble in THF, CHCl₃ and toluene.

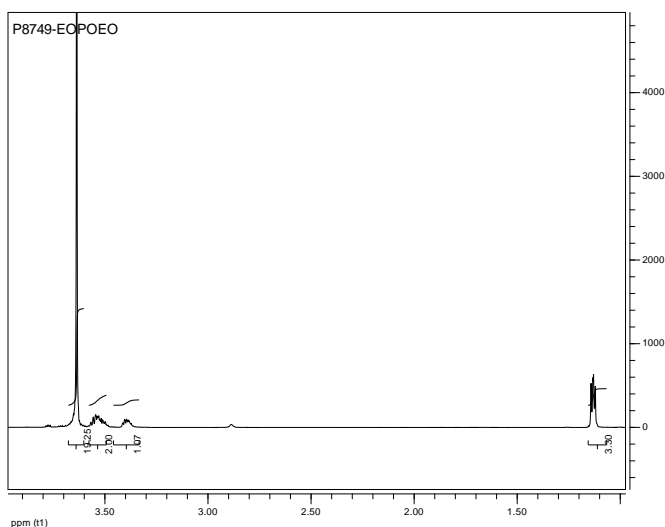
SEC of Sample:

P8749-EOPOEO



Size exclusion chromatography of:
(ethylene oxide-propylene oxide-ethylene oxide) triblock copolymer:
— Poly(propylene oxide) center block: $M_n=3200$, $M_w=3500$, $M_w/M_n=1.09$
— Block Copolymer EO(5800)-b-PO(3200)-b-EO(5800), $M_w/M_n=1.16$

¹H NMR of the polymer:



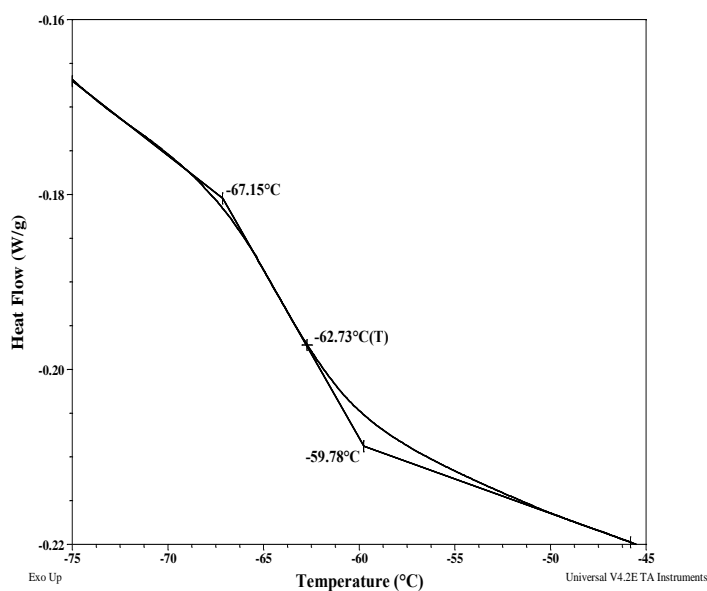
Thermal analysis of the sample# P8749-EOPOEO

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	57	31	-63
PO block		-	-63

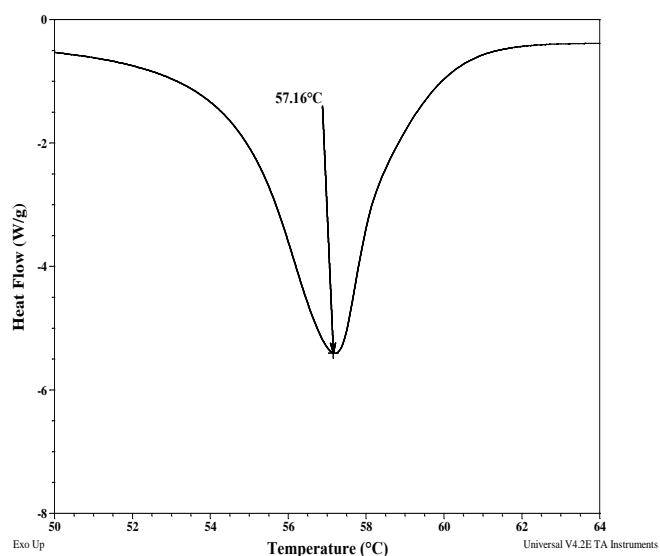
Typical thermogram for the PO-EO block



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:

