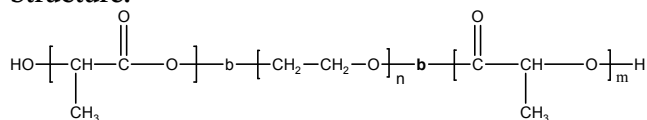


Sample Name:

Poly(lactide(dl)-Co-Glycolide -b- ethylene oxide -b- lactide (dl)-co-glycolide)

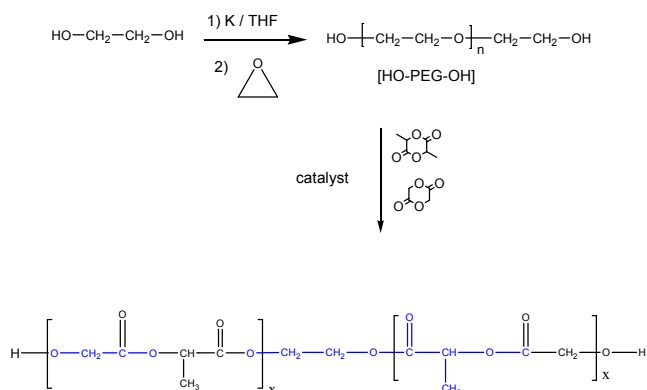
Sample #: P9608-LAGLEOLAGL (DL form)

Structure:**Composition:**

Mn x 10 ³	PDI
1.6-b-1.0-1.6	1.15
LA:GL ratio 3:1	

Synthesis Procedure:

Poly(lactide-co-glycolide -b- ethylene oxide -b- glycolide-co-lactide) triblock copolymer was prepared by ring opening polymerization of ethylene oxide(EO) followed by living coordination polymerization of D,L-lactide(LA) and glycolide mixture using a Tin catalyst. The scheme of the reaction is illustrated below:

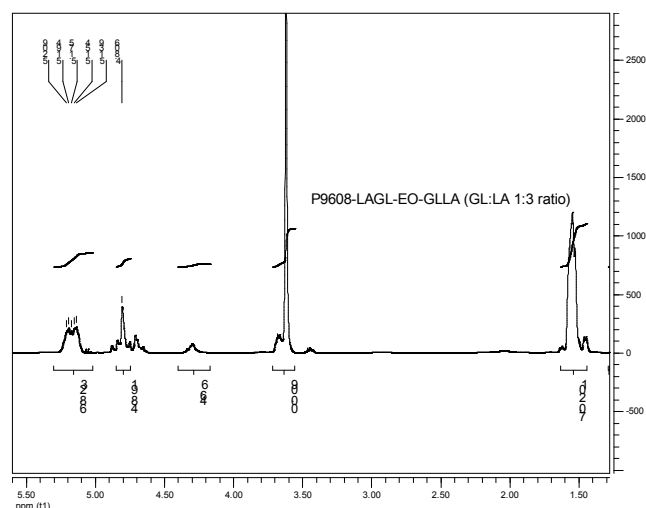
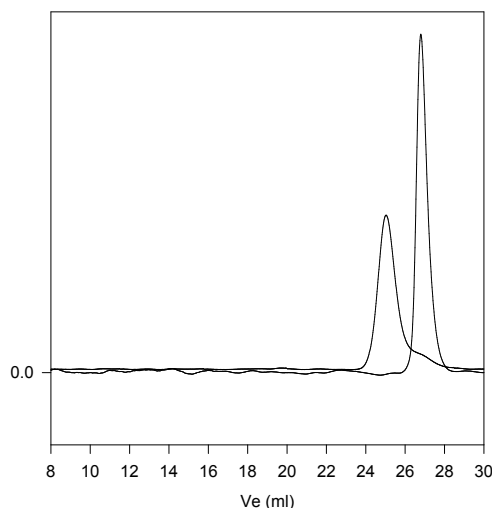
**Characterization:**

The molecular weight and polydispersity index of the poly(ethylene oxide) block was determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. The composition of the lactide ABA triblock copolymer was determined using ¹H-NMR spectroscopy by comparing the integration of the lactide peaks (5.2ppm) with that of the ethylene oxide peaks (3.6ppm).

Purification of the obtained polymer: Product was precipitated in cold ether and check the absence of un-reacted monomer by FTIR (absence of absorbance band at 934 cm⁻¹).

Solubility:

The polymer is soluble in THF, chloroform, DMF and toluene, but not soluble in hexane.

NMR of Sample:**SEC of Sample:****P9608-LAGLEOLAGL**

Size exclusion chromatography:

— Poly(ethylene glycol) diol, M_n=1000, M_w=1100, PI=1.1

— Block Copolymer PLAGL(1600)-PEO(1,000)-b-PLAGL(1600), PI=1.15
Composition from ¹H NMR

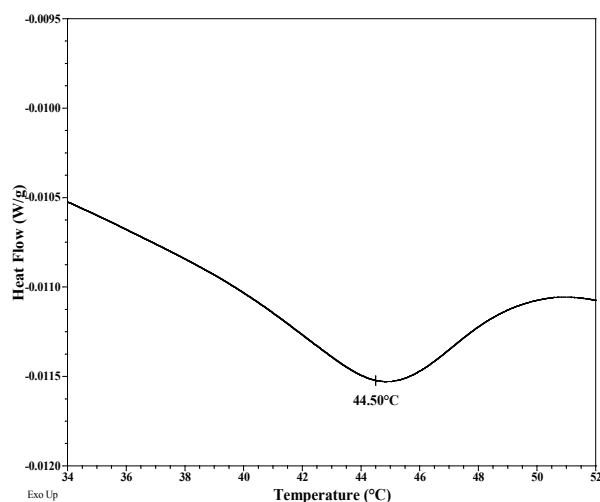
Thermal analysis of the sample# P9608-LAGLEOLAGA (LA:GA 3:1 ratio) LA (dl form)

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).

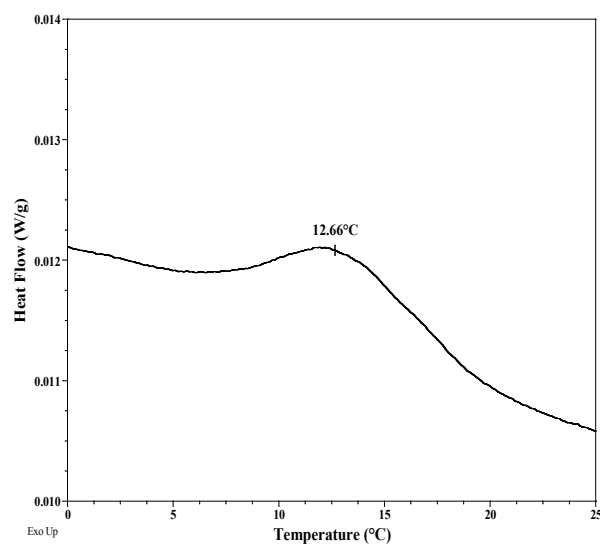
Melting and crystallization curve for the sample

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.

For PEO block



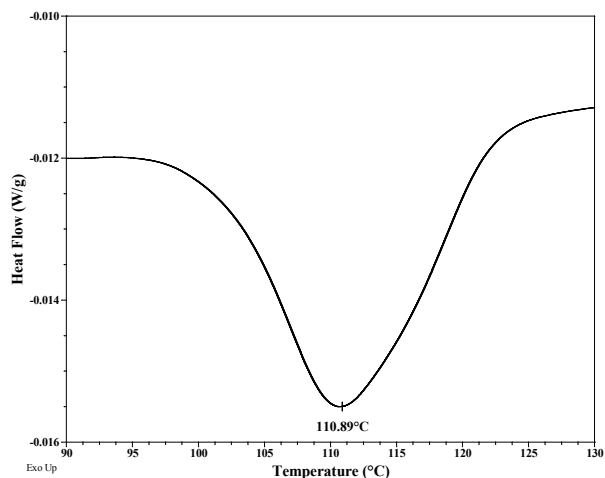
Crystallization curve:



Thermal analysis results at a glance

For PLA block		
T_g : Not distinct	T_m : 111°C	T_c : 108°C
For PEO block		
T_g : -61°C	T_m : 44 °C	T_c : 13 °C

Melting curve for PLA block



Crystallization curve For PLA block

