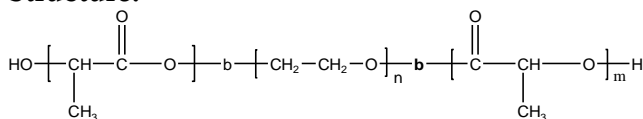


Sample Name:

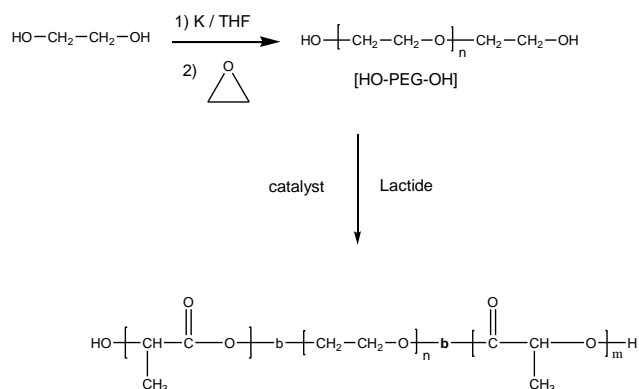
Poly(lactide -b- ethylene oxide -b- lactide) (DL form)

Sample #: P8462-LAEOLA (DL form)**Structure:****Composition:**

Mn x 10 ³	PDI
1.0-b-8.0-b-1.0	1.09

Synthesis Procedure:

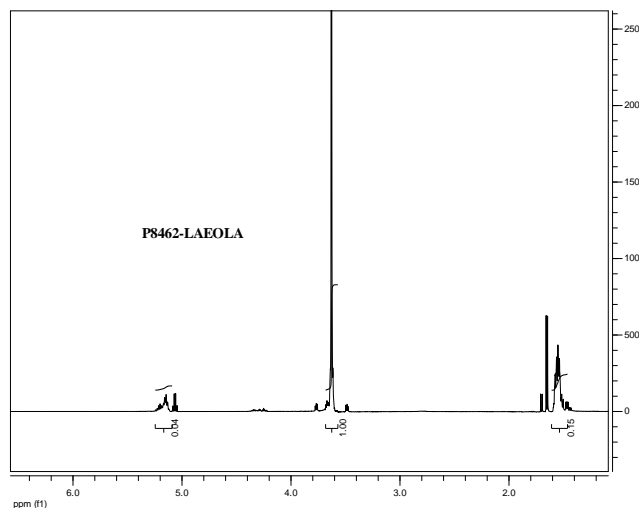
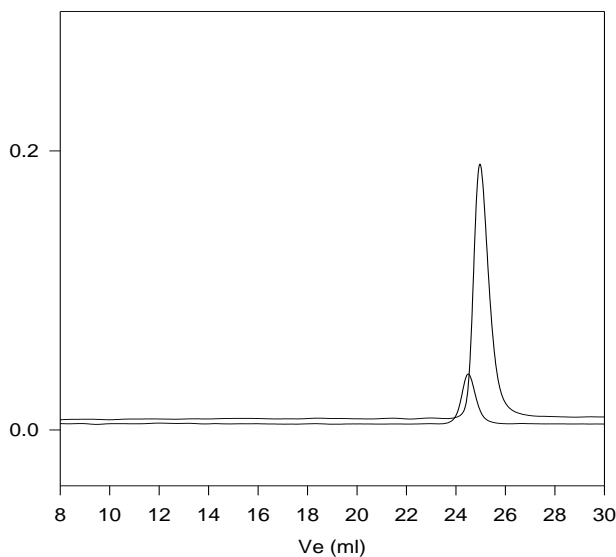
Poly(lactide-b-ethylene oxide-b-lactide) was prepared by of living anionic polymerization of ethylene oxide (EO) followed by living coordination polymerization of D,L-lactide(LA) using tin catalyst. The scheme of the reaction is illustrated below:

**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).

Solubility:

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

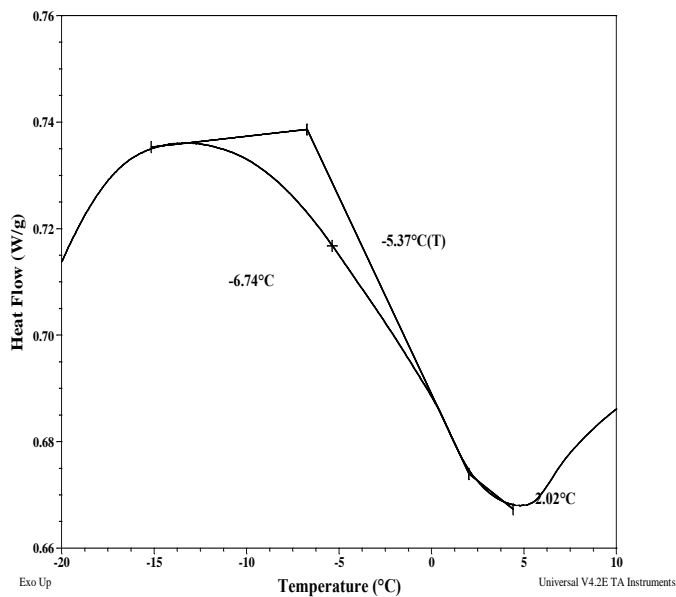
NMR of Sample:**SEC of Sample:****P8462- LAEOLA (DL form)****Size exclusion chromatography:**

- Poly(ethylene glycol) diol, M_n=8000, M_w=8400, PI=1.05
 - Block Copolymer PLA(1000)-PEO(8000)-b-PLA(1000), PI=1.09
- Composition from ¹H NMR
Dp: LA(14)-EO(182)-b-LA(14)

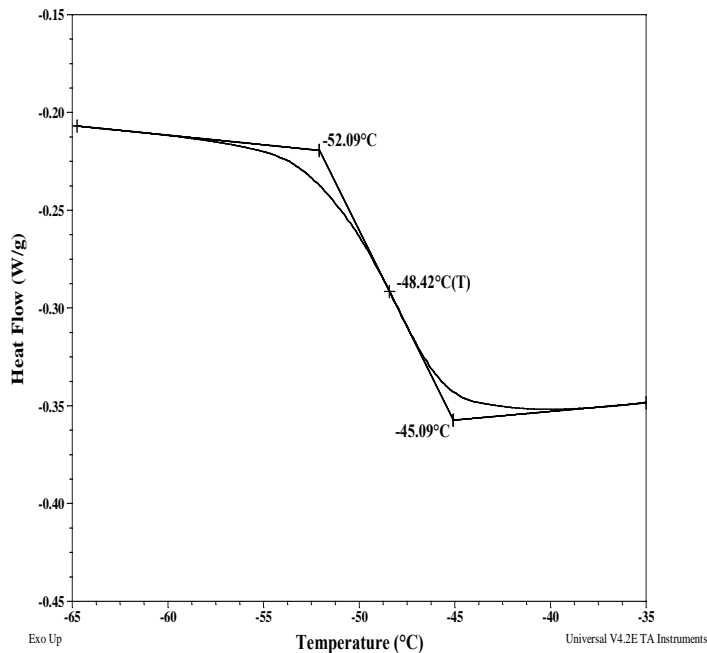
Thermal analysis of the sample# P8462-LAEOLA

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).

Thermogram for PLA block:



For PEO block



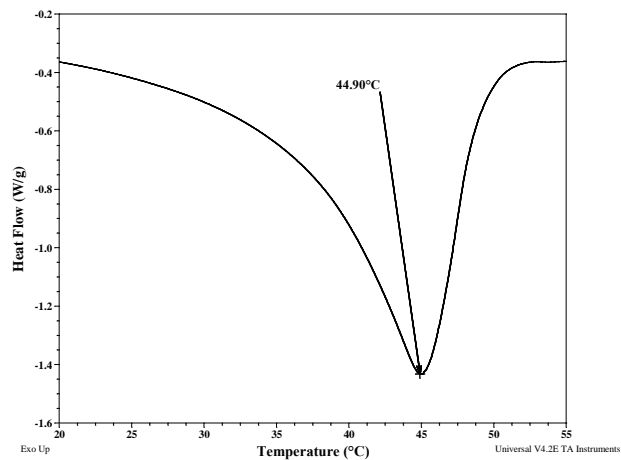
Thermal analysis results at a glance

For PLA block (DL)		
T_g : -05°C	T_m : -	T_c : -27°C
For PEO block		
T_g : -48°C	T_m : 45°C	T_c : -09°C

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 PEOblock



Crystallization curve For PEO block

