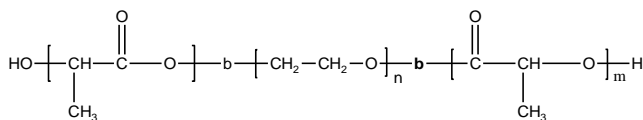


Sample Name:

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

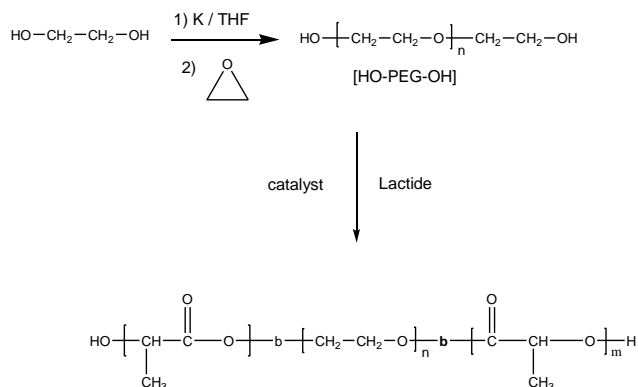
Sample #: P7325-LAEOLA (DL form)

Structure:**Composition:**

$M_n \times 10^3$	PDI
2.5-10-2.5	1.06

Synthesis Procedure:

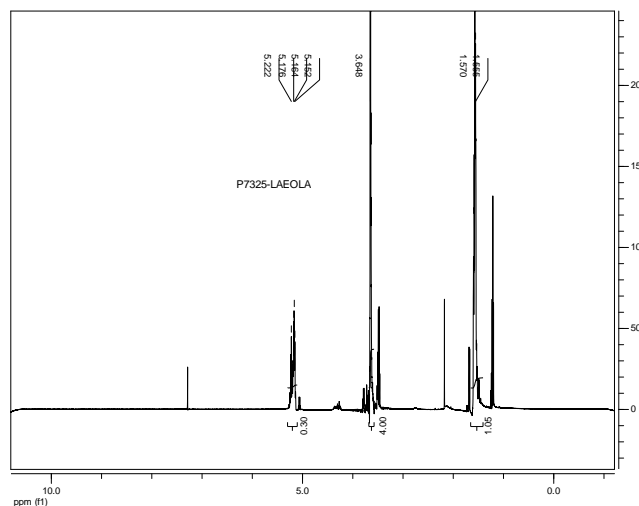
Poly(lactide-b-ethylene oxide-b-lactide) was prepared by living anionic polymerization of ethylene oxide (EO) followed by living coordination polymerization of D, L-lactide (LA) using tin catalyst. The scheme of the reaction is illustrated below:

**Characterization:**

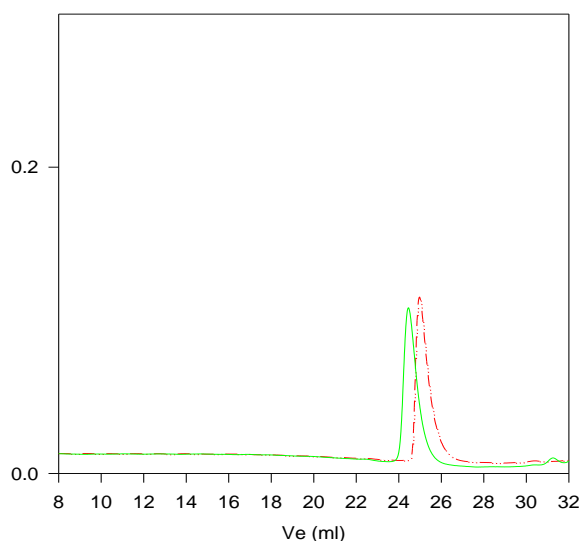
The molecular weight and polydispersity index of the poly(ethylene oxide) block was determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. The composition of the lactide ABA triblock copolymer was determined using ^1H -NMR spectroscopy by comparing the integration of the lactide peaks (5.2+1.55ppm) 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:**

P7325- LAEOLA (DL form)



Size exclusion chromatography:

--- Poly(ethylene glycol) diol, $M_n=10000$, $M_w=10600$, $PI=1.05$

— Block Copolymer PLA(2500)-PEO(10000)-b-PLA(2500), $PI=1.06$

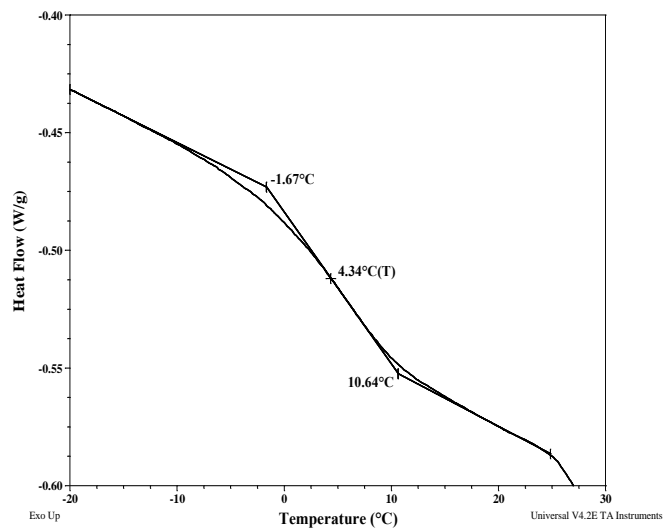
Composition from ^1H NMR

Dp: LA(35 units)-EO(228 units)-b-LA (35 units)

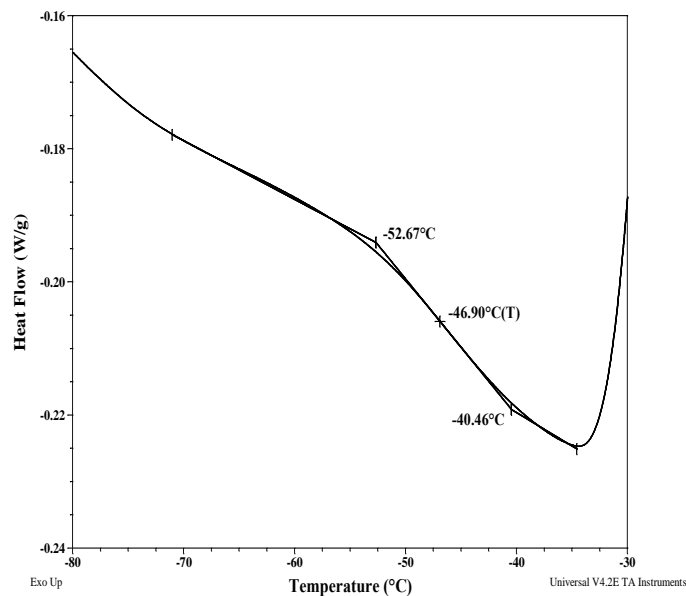
Thermal analysis of the sample# P7325-LAEOLA

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 20°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).

Thermograms for PLA block:



Thermograms for PEO block



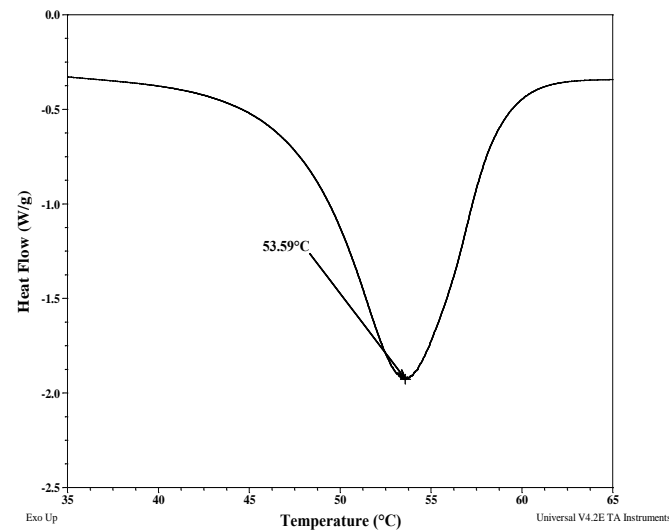
Melting and crystallization curve for the sample

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.

Thermal analysis results at a glance

For PLA block (DL)		
T_g : 04°C	T_m : -	T_c : -
For PEO block		
T_g : -47°C	T_m : 54°C	T_c : 22°C

Melting curve for PEO block



Crystallization curve For PEO block

