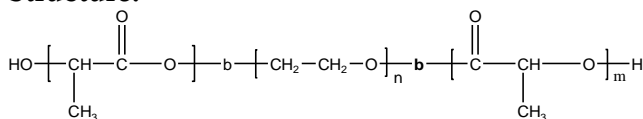


### Sample Name:

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

### Sample #: P7201-LAEOLA (DL form)

### Structure:

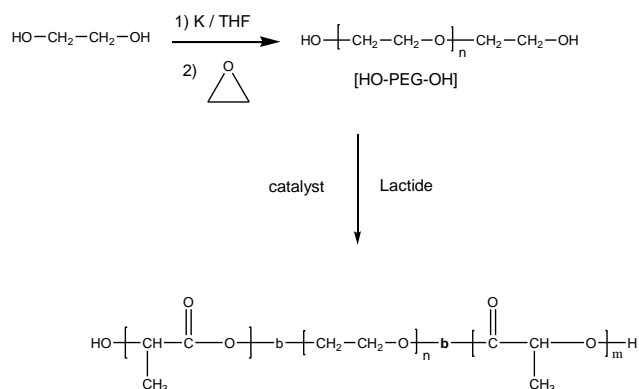


### Composition:

$M_n \times 10^3$	PDI
4.8-5.0-4.8	1.06

### 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:



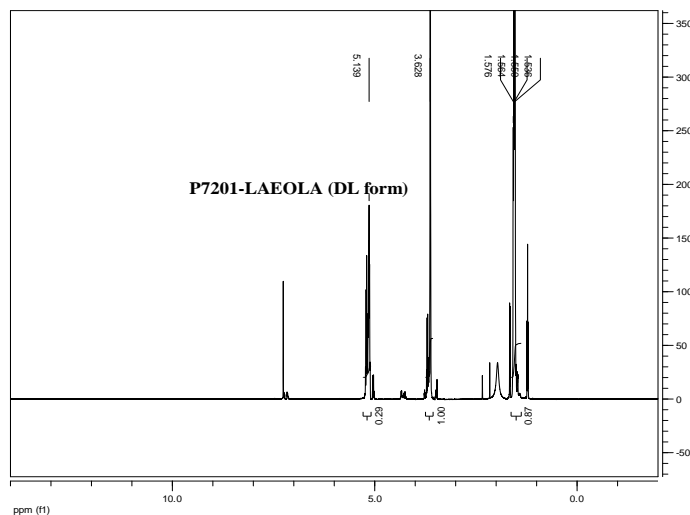
### Characterization:

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 <sup>1</sup>H-NMR spectroscopy by comparing the integration of the lactide peaks (5.2ppm) with that of the ethylene oxide peaks (3.6ppm).

### Solubility:

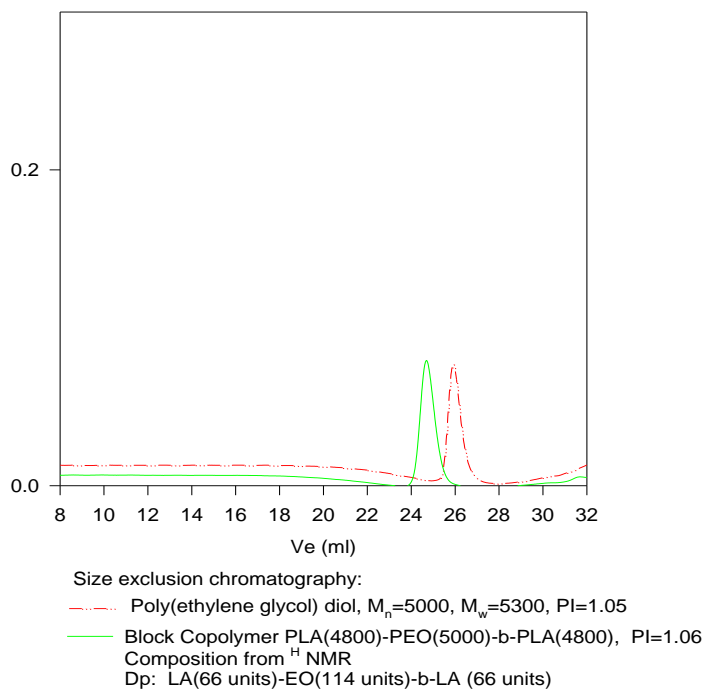
The polymer is soluble in THF, chloroform, DMF and toluene, but not soluble in hexane.

### NMR of Sample:



### SEC of Sample:

#### **P7201- LAEOLA (DL form)**



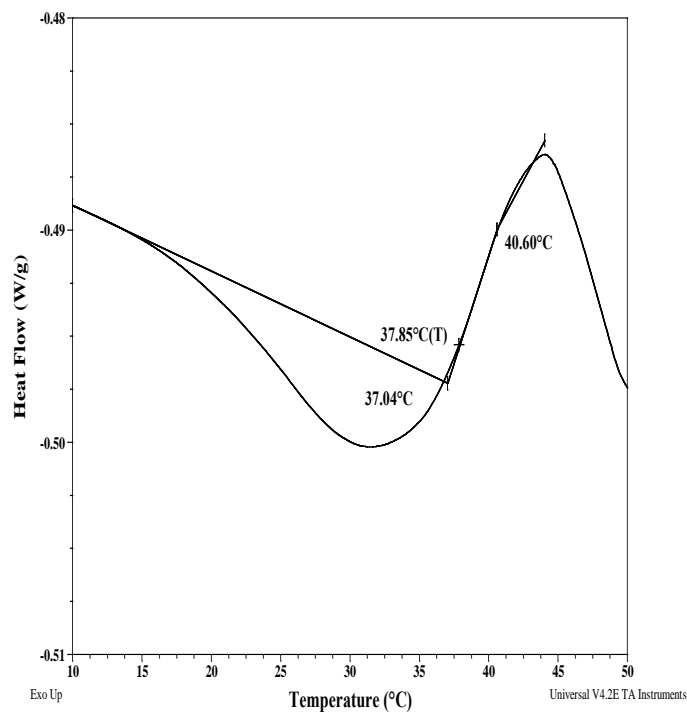
Thermal analysis of the sample# P7201-LAEOLA

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 ( $T_g$ ).

Thermal analysis results at a glance

For PLA block (DL)		
$T_g$ : 38°C	$T_m$ : -	$T_c$ : -
For PEO block		
$T_g$ : -41°C	$T_m$ : 43°C	$T_c$ : 11°C

Thermogram for PLA block:



For PEO block

