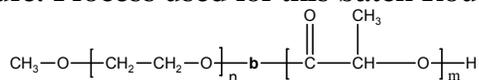


Sample Name:

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

Sample #: P11485-EOLA (DL form)

Structure: Process used for this batch Route # 3



Composition:

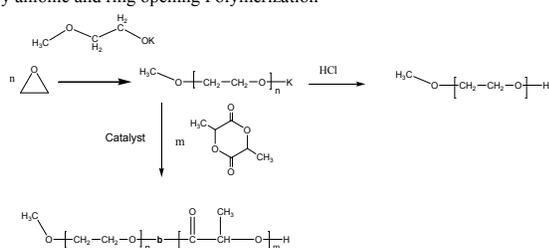
Mn x 10 ³ PEO-b-PLA	PDI
2.4-b-2.0	1.18

Synthesis Procedure:

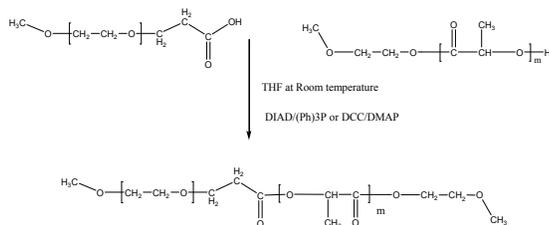
Poly(ethylene oxide -b- lactide) Can be synthesized by following routes:

Synthetic Routes

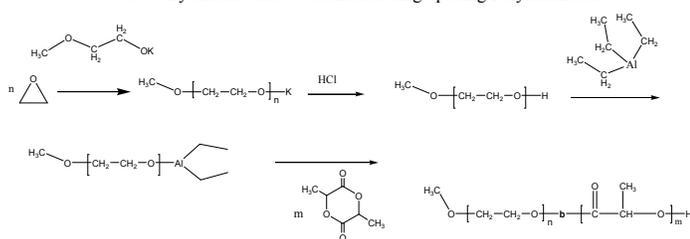
1. By anionic and ring opening Polymerization



2. By Modification of End groups and Condensation reaction



3. By anionic and Co-ordination ring opening Polymerization



Characterization:

Polymer analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the methoxyl protons of poly(ethylene oxide) at about a 3.6 ppm with the polylactide protons at about 5.1 and 1.55 ppm.

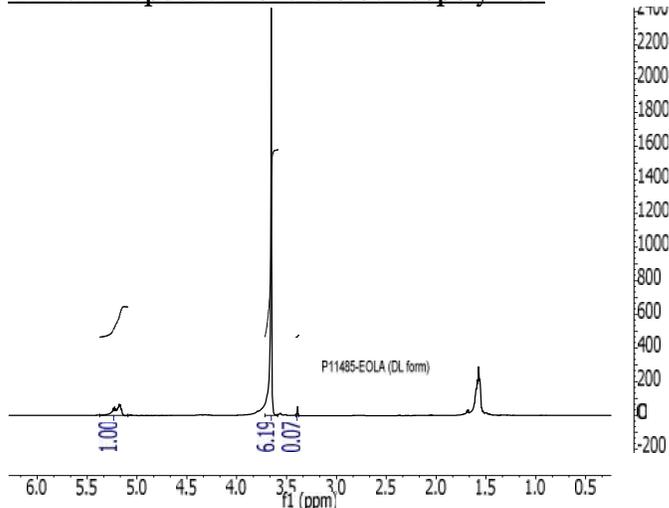
Thermal analysis

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).

Solubility:

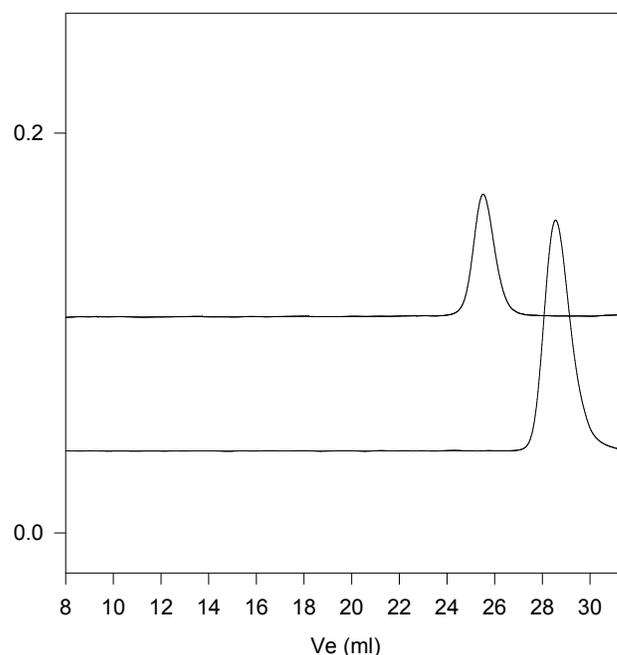
The polymer is soluble in chloroform, THF, DMF, toluene and precipitates from ethanol, ether and hexane.

¹H-NMR Spectrum of the block copolymer:



SEC profile of the Polymer:

P11485- EOLA (DL form)



Size exclusion chromatography:

- Poly(ethylene glycol) monomethoxy ether, M_n=2400, M_w=2500, PI=1.05
- Block Copolymer PEO(2400)-b-PLA(2,000), PI=1.18
Composition from ¹H NMR
Dp: EO(54- units)-b-LA(35- units)