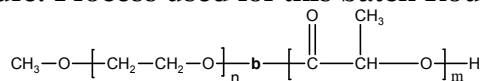


**Sample Name:**

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

**Sample #:** P11484-EOLA (DL form)**Structure:** Process used for this batch Route # 3**Composition:**

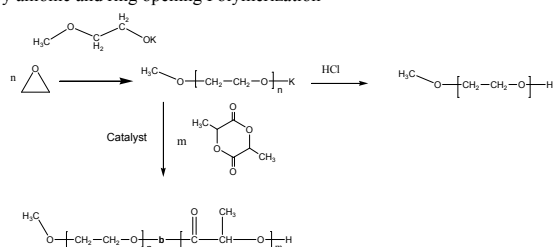
Mn x 10 <sup>3</sup> PEO-b-PLA	PDI
4.0-b-4.0	1.18

**Synthesis Procedure:**

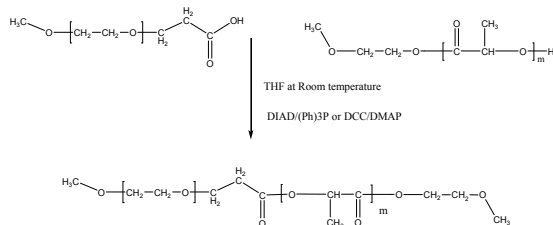
Poly(ethylene oxide -b- lactide) Can be synthesized by following routes:

**Synthetic Routes**

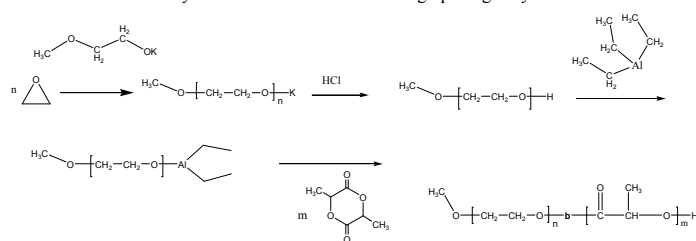
## # 1. By anionic and ring opening Polymerization



## # 2. By Modification of End groups and Condensation reaction



## # 3. By anionic and Co-ordination ring opening Polymerization

**Characterization:**

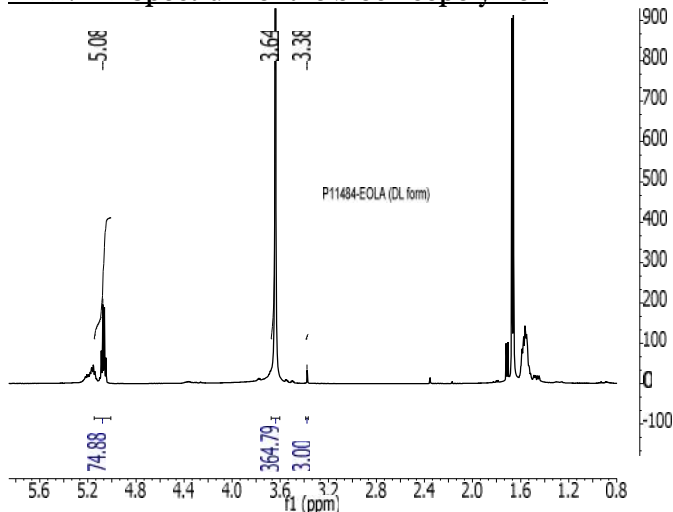
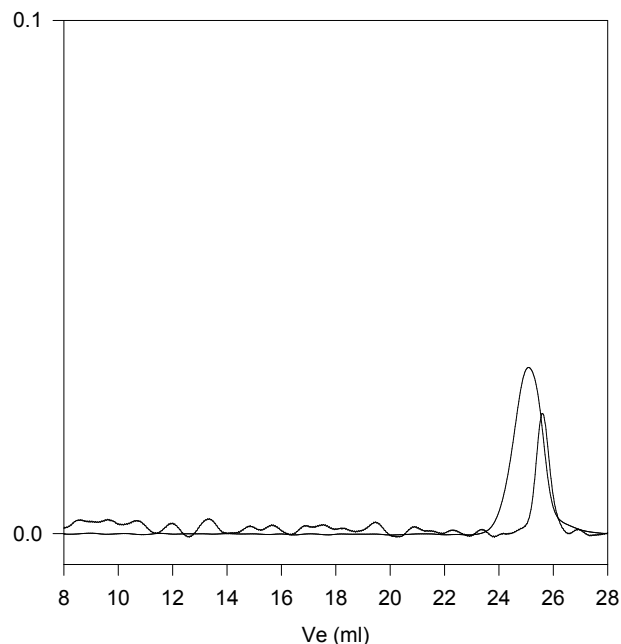
Polymer analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the methoxyl protons of poly(ethylene oxide) at about 3.6 ppm with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

**Solubility:**

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

**<sup>1</sup>H-NMR Spectrum of the block copolymer:****SEC profile of the Polymer:****P11484- EOLA (DL -lactide)****Size exclusion chromatography:**

— Poly(ethylene oxide), M<sub>n</sub>=4000, M<sub>w</sub>=4500, PI=1.08

— Block Copolymer PEO(4000)-b-PLA(4,000), PI=1.18