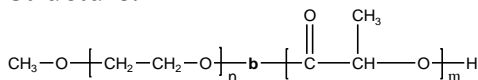


**Sample Name:**

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

**Sample #: P8914-EOLA (DL form)****Structure:****Composition:**

M <sub>n</sub> x 10 <sup>3</sup> PEO-b-PLA	PDI
5.0-b-2.2	1.2
T <sub>g</sub> for PLA block	36°C

**Synthesis Procedure:**

Poly(ethylene oxide -b- lactide) is prepared by living anionic polymerization of ethylene oxide and coordination polymerization of lactide.

**Characterization:**

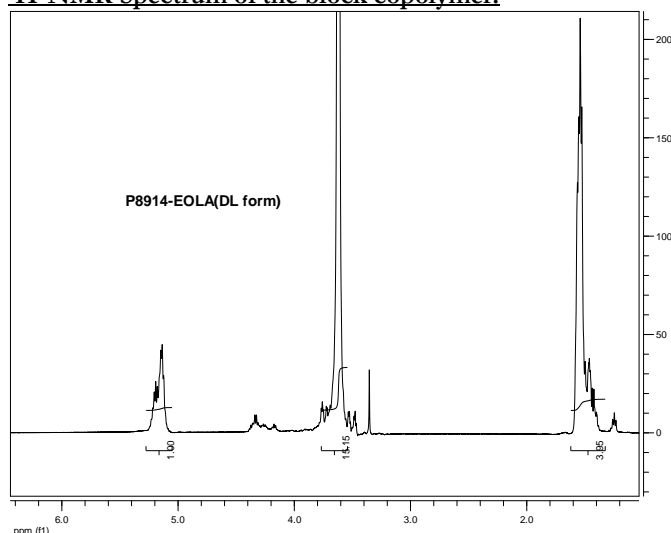
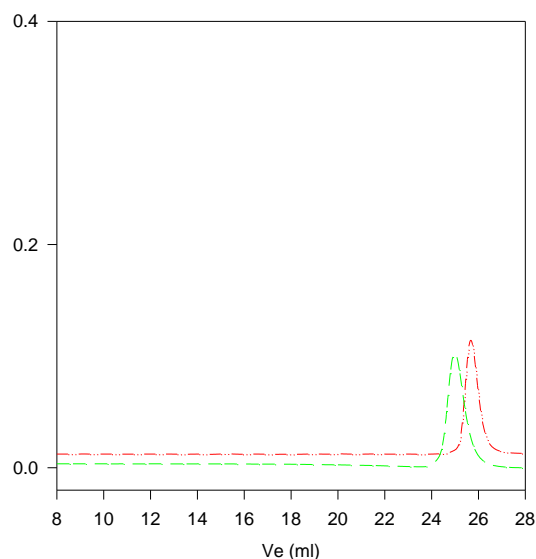
An aliquot of the anionic poly(ethylene oxide) block was terminated before addition of lactide and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the methoxyl protons of poly(ethylene oxide) at about 3.36 ppm with the lactide protons at about 5.1 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:**

Poly(ethylene oxide -b- lactide) 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 of the block copolymer:****P8914- EOLA (DL form)**

Size exclusion chromatography:

--- Poly(ethylene glycol) monomethoxyl ether,  
M<sub>n</sub>=5000, M<sub>w</sub>=5300, PI=1.06

--- Block Copolymer PEO(5000)-b-PLA(2200), PI=1.2  
Composition from <sup>1</sup>H NMR  
Dp: EO( 114 units)-b-LA ( 30units)

**Thermogram for PLA block:**