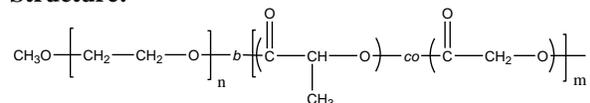


Sample Name: Poly(ethylene oxide)-b-poly(DL-lactide-co-glycolide)

Sample #: P44544-EO-b-LAGAran
(DL form LA)

Structure:

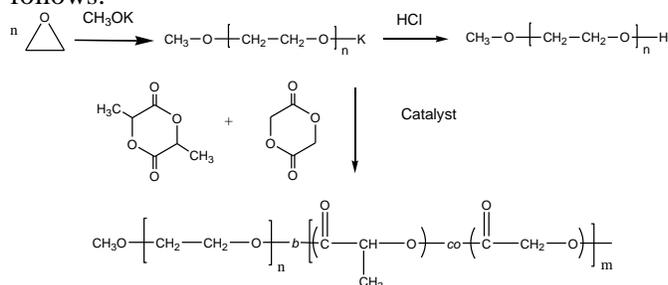


Composition:

$M_n \times 10^3$ (g/mol) [PEO-b-PLA-co-GA]	M_w/M_n
1.0-b-1.7	1.05
LA:GL ratio= 91:9	
Glass transition temperature, Tg:-14.3 °C	

Synthesis procedure:

The synthesis of poly(ethylene oxide)-b-poly[(D,L-lactide)-co-glycolide]ran is shown as follows:



Characterization:

The molecular weight of the first block PEO was determined by ¹H NMR and size exclusion chromatography (SEC). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the methoxy-protons of poly(ethylene oxide) at around 3.6 ppm and the poly(lactide) protons at around 5.1 and 1.55 ppm and the poly(glycolide) protons at around 4.7 ppm. The polydispersity index (M_w/M_n) of the block copolymer was obtained by SEC.

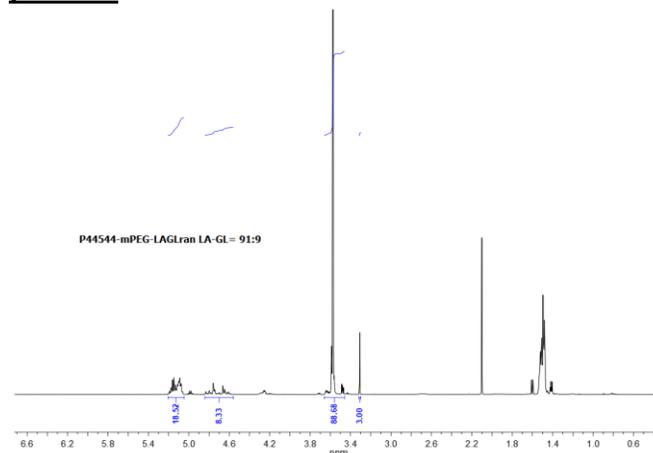
Thermal analysis:

Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere. The glass transition temperature (Tg) of the polymer was measured at a scan rate of 10°C/min shortly after creating thermal history of the sample.

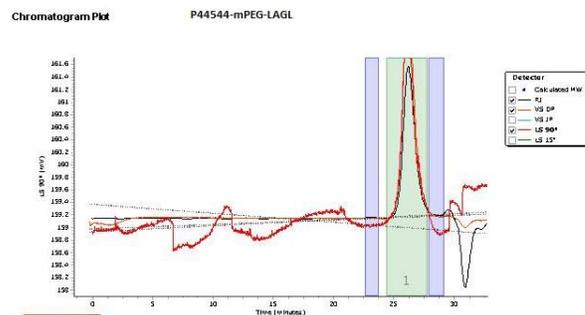
Solubility:

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

¹H-NMR (500 Mhz, CDCl₃) spectrum of product:



SEC elugram of the PEO-PLAGAran block copolymer:



Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PDI
Peak 1	2936	2730	2886	3000	3131	2965	1.05

DSC thermograms of the polymer (10°C/min):

