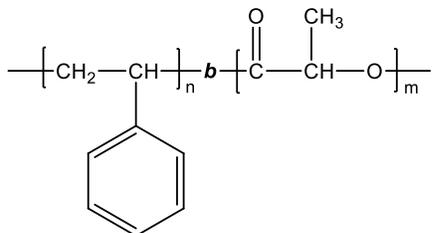


Sample Name: Poly(styrene-b-lactide)

Sample#: P42640-SLA (LA is D form)

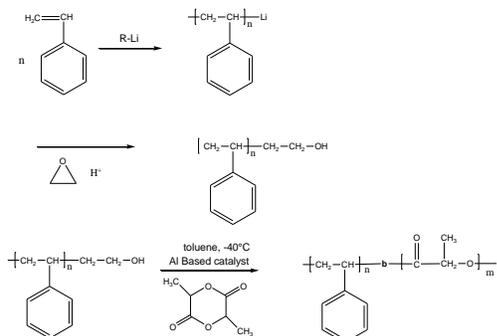
Structure:



Mn x 10 ³ S-b-LA	Mw/Mn (PDI)
24.0-b-18.5	1.01

Synthesis Procedure:

Poly(styrene-b-lactide) is prepared by living anionic polymerization in sequential addition of styrene followed by lactide monomer or by taking the OH end functionalized polystyrene and using co-ordination polymerization process. The scheme of the reaction is illustrated below:



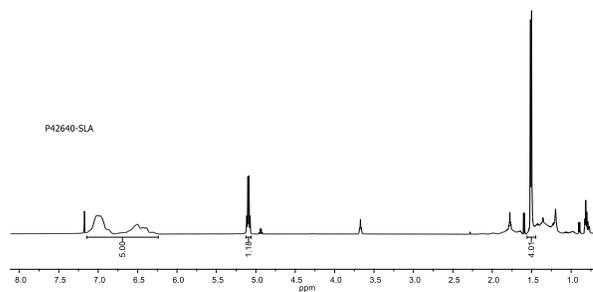
Characterization:

The product was characterized by size exclusion chromatography (SEC) and ¹H-NMR data analysis.

Solubility:

Poly(styrene-b-lactide) is soluble in chloroform, THF, and toluene.

¹H-NMR Spectrum of the block copolymer:

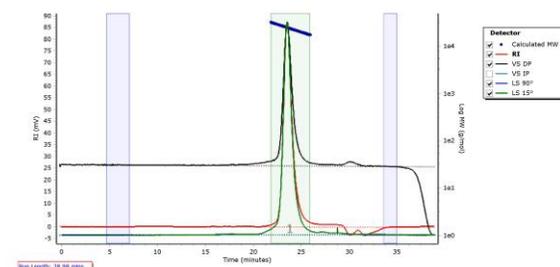


SEC elugram of P42640-SOH:

Agilent GPC/SEC Software

P42640-SOH

Chromatogram Plot



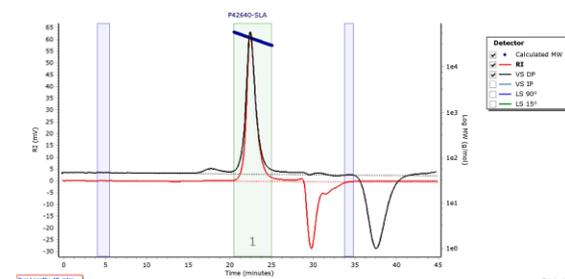
Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	24777	24067	24247	24417	24579	24409	1.007

SEC elugram of P42640-SLA:

Agilent GPC/SEC Software

P42640-SLA

Chromatogram Plot



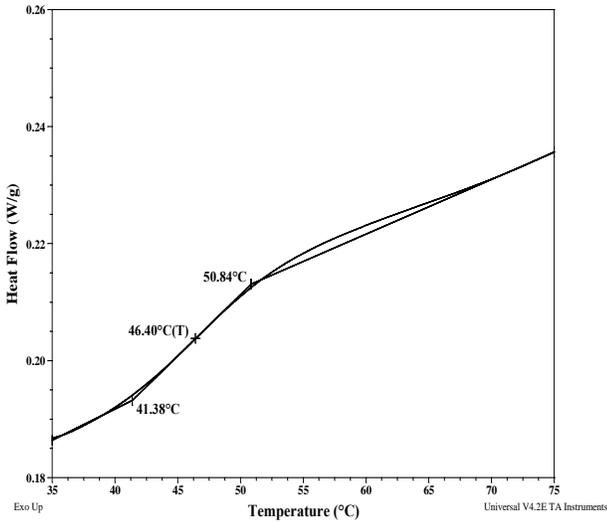
Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	44142	42955	43028	43443	43842	43035	1.01

Processing Parameters
 Method: RI
 Concentration Detector Used in Analysis: 100.00
 Injection volume (μL): 1.00
 Flow rate (mL/min): Calculate Sample Concentration from Entered Sample Properties
 Concentration options: 0.109
 Entered divloc (mL/g):

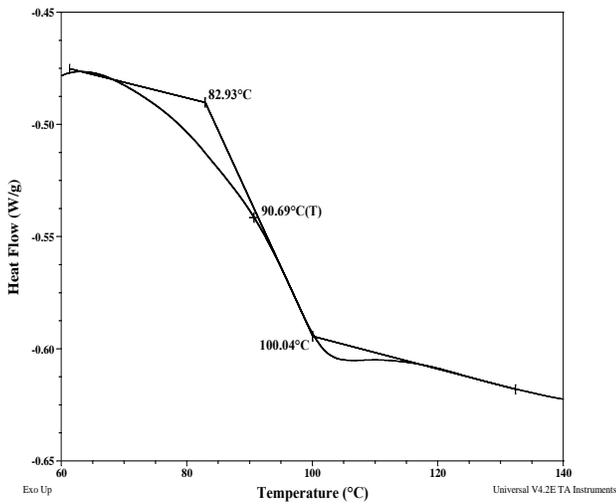
Thermal analysis of the sample# P42640-SLA:

Thermal analysis of the block polymer 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).

Thermogram for PLA block:



Thermogram For PS block:



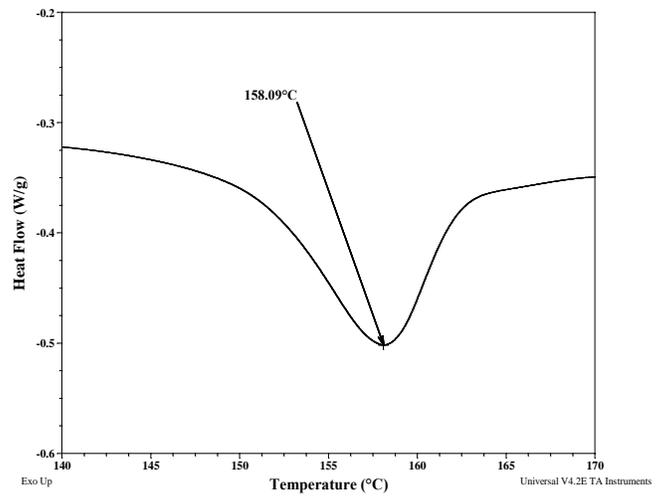
Thermal analysis results at a glance:

For PLA block		
T_g : 46°C	T_m : 158°C	T_c : 21°C
For PS block		
	T_g : 91°C	

Melting curve for the sample:

The melting temperature (T_m) was taken as the maximum of the endothermic peak during heating of the sample from 20°C to 200°C at heating rate of 10°C/min.

Melting curve for PLA block:



Crystallization curve:

