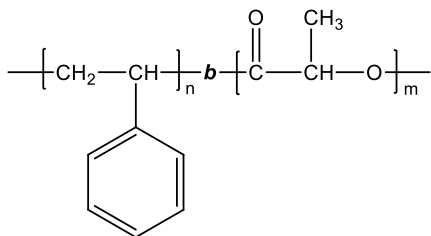


**Sample Name: Poly(styrene-b-lactide)**

**Sample#: P42636B-SLA (LA is D form)**

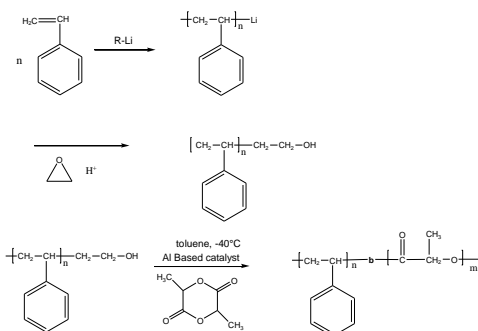
**Structure:**



Mn x 10 <sup>3</sup> S-b-LA	Mw/Mn (PDI)
18.5-b-13.0	1.07

### 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:



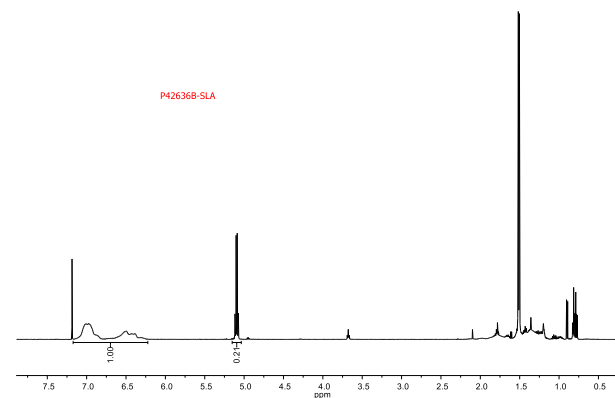
### Characterization:

The product was characterized by size exclusion chromatography (SEC) and <sup>1</sup>H NMR data analysis.

### Solubility:

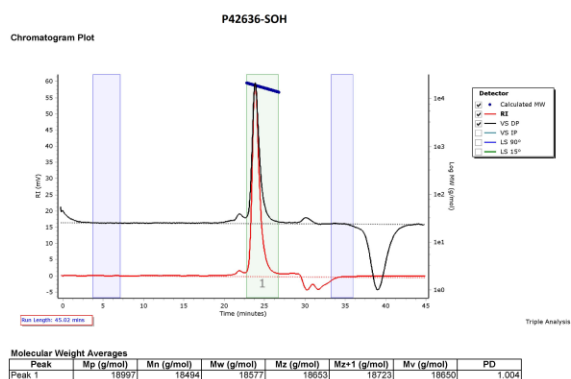
Poly(styrene-b-lactide) is soluble in chloroform, THF, and toluene.

### <sup>1</sup>H-NMR Spectrum of the block copolymer:

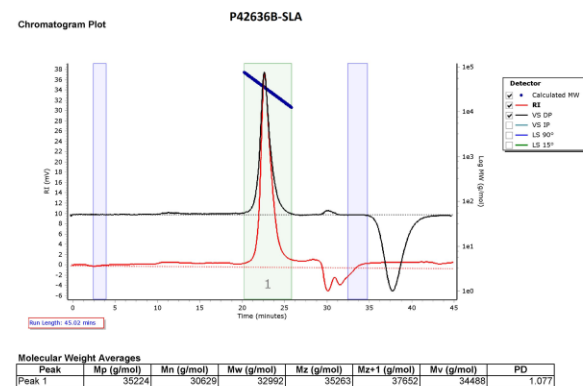


### SEC elugram of P42636-SOH:

Agilent GPC/SEC Software



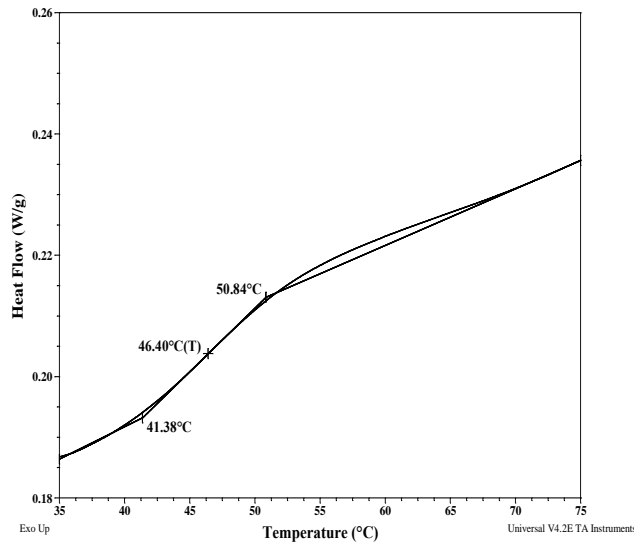
### SEC elugram of P42636B-SLA:



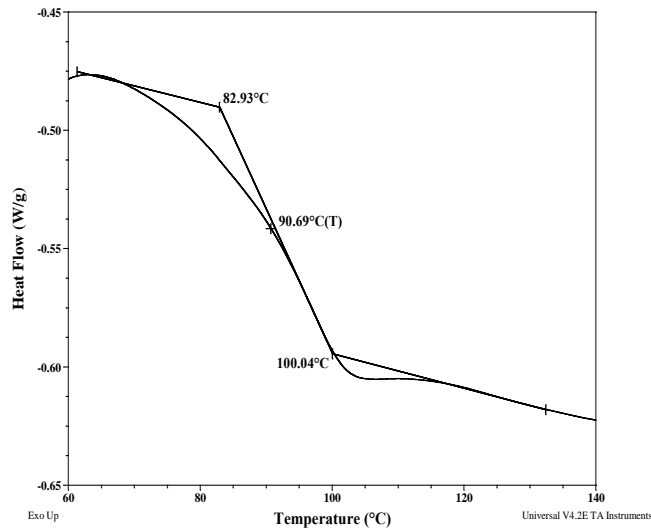
**Thermal analysis of the sample# P42636B-SLA:**

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:**



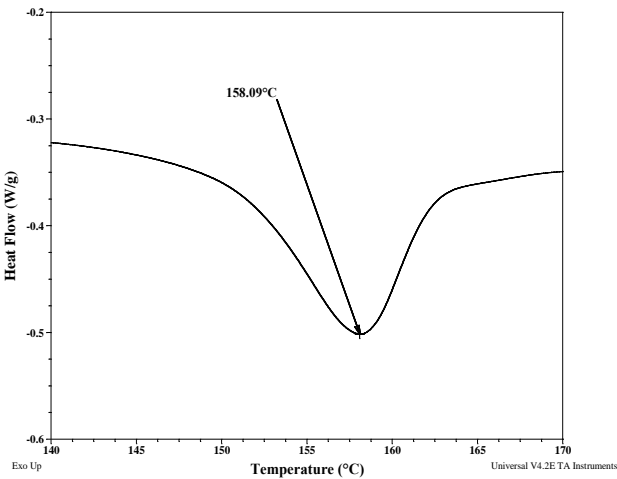
**Thermal analysis results at a glance:**

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:**

