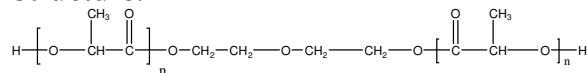


**Sample Name:** Polylactide dihydroxy end functionalized

**Sample #:** P8988A-LA (D-Form)

**Structure:**

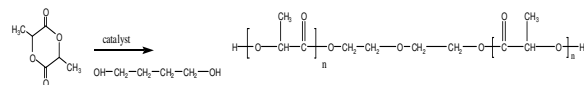


**Composition:**

Mn x 10 <sup>3</sup>	PDI
105.0	1.10

**Synthesis Procedure:**

The polymerization of (D+) 3, 6-dimethyl-1,4-dioxane-2,5-dione was initiated with tin octoate catalyst and the reaction was carried out in apolar solvent.



**Purification:**

Polymer was precipitated employing a large excess of hexane. The polymer was further dissolved in chloroform; filtered and precipitated in ethanol/hexane mixture.

**Characterization:**

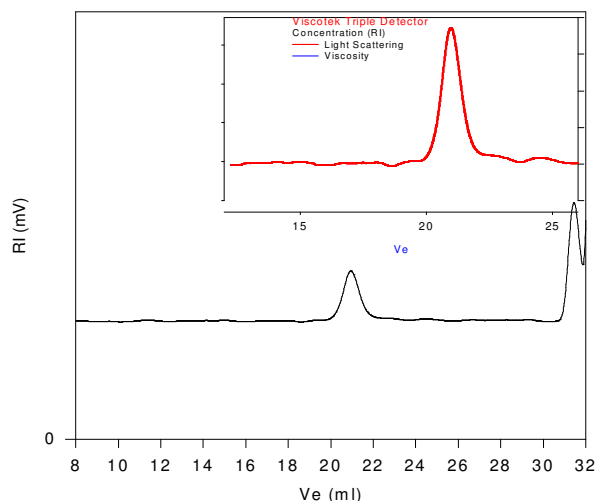
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

**Solubility:**

Polymer is soluble in CHCl<sub>3</sub> and CH<sub>2</sub>Cl<sub>2</sub>. The polymer is insoluble in methanol, hexane and ether.

**SEC of Homopolymer:**

**P8988A-LA(D form)**



Size Exclusion Chromatography of Polymer;

— M<sub>n</sub> = 105,000, M<sub>w</sub> = 115,500, M<sub>w</sub>/M<sub>n</sub> = 1.10  
Solution Viscosity in THF at 35 °C: 1.610/g  
dn/dc in THF at 35 °C: 0.046 ml/g  
R<sub>g</sub>: 19.55 nm

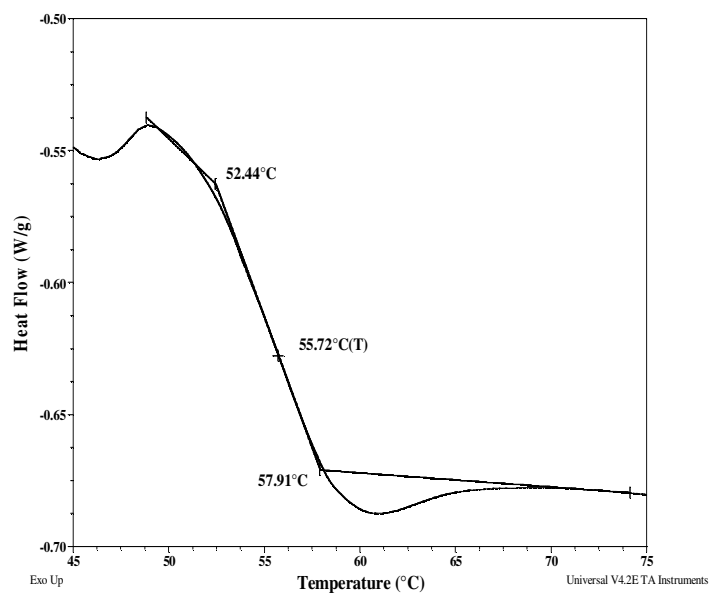
## Thermal analysis of the sample P8988A-LA

Thermal analysis of the 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 ( $T_g$ ).

### Thermal analysis results at a glance

For PLA (D-form)		
$T_g$ : 56°C	$T_m$ : 175°C	$T_c$ : 98°C

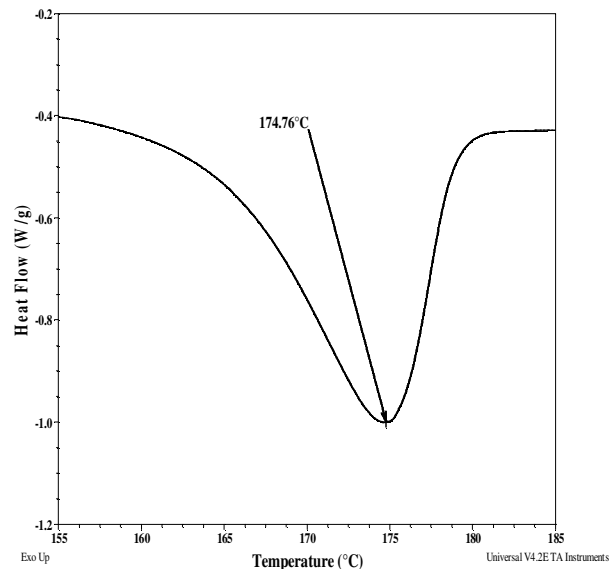
### Thermogram for PLA block:



### Melting and crystallization curve:

The melting temperature ( $T_m$ ) was taken as the maximum of the endothermic peak where as the crystallization temperature ( $T_c$ ) was considered as the minimum of the exothermic peak.

### Melting curve for PLA block:



### Crystallization curve:

