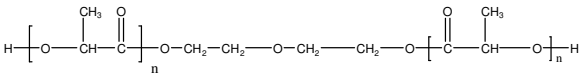
**<u>Sample Name</u>: Polylactide dihydroxy end functionalized**

**<u>Sample #:</u> P8986-LA2OH (D-Form)**

**Structure:**

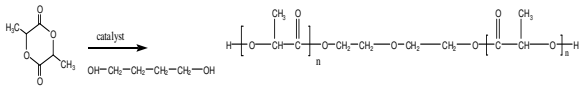


**Composition:**

| Mn x $10^3$ | PDI |
|---|---|
| 20.0 | 1.09 |

**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.

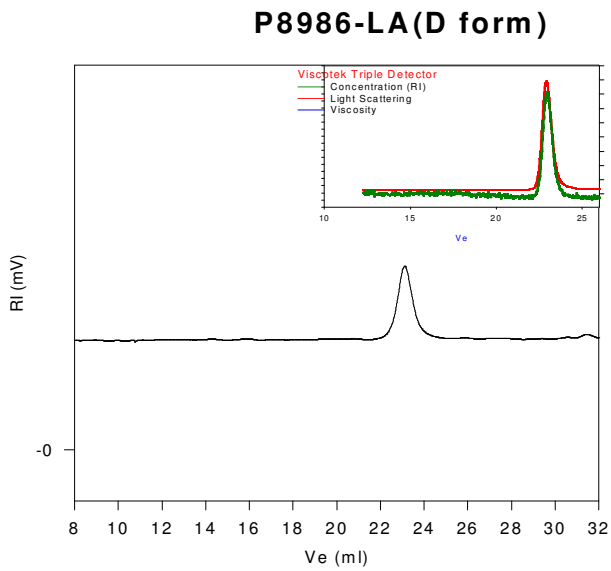
**Characterization:**

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 $CHCl_3$ and $CH_2Cl_2$. The polymer is insoluble in methanol, hexane and ether.

**<u>SEC of Homopolymer:</u>**




Size Exclusion Chromatography of Polymer;

—— $M_n$ = 20000, $M_w$ = 21800, $M_w/M_n$ = 1.09
Solution Viscosity in THF at 35 oC: 0.541l/g
dn/dcin THF at 35 oC: 0.046 ml/g
Rgw: 7.45nm

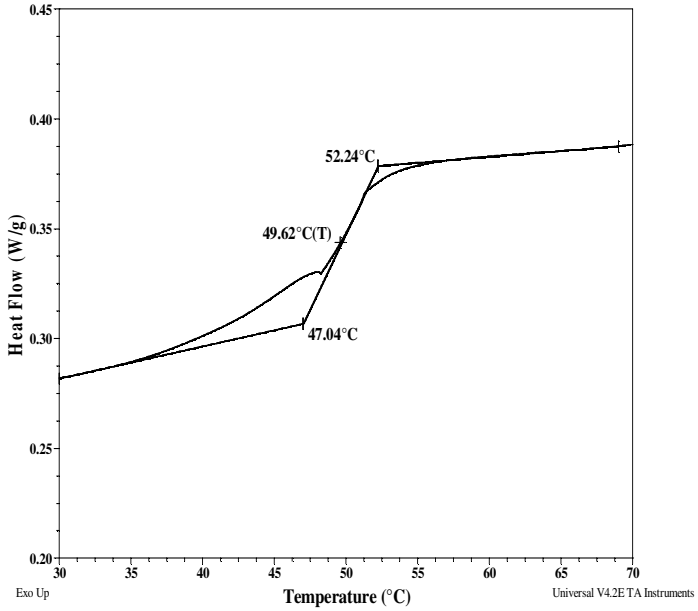
## Thermal analysis of the sample P8986-LA

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) | | |
|---|---|---|
| $T_g$: 50°C | $T_m$: 165°C | $T_c$: 100°C |

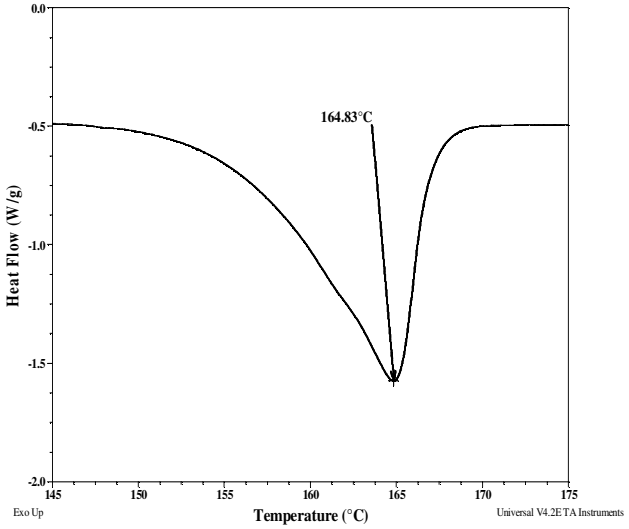
## Thermogram for PLA block:




## Melting and crystallization curve for the sample

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: