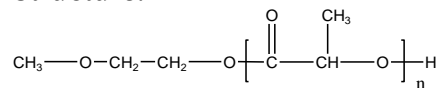


### Sample Name: Polylactide (L form)

### Sample #: P7151A-LA (L-form)

#### Structure:

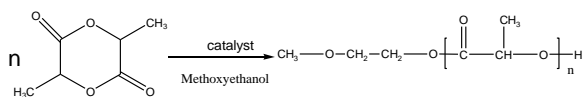


#### Composition:

$M_n \times 10^3$	PDI
6.0	1.18

#### Synthesis Procedure:

The polymerization of 3, 6-dimethyl-1,4-dioxane-2,5-dione was initiated with an catalyst and the reaction was carried out in THF.



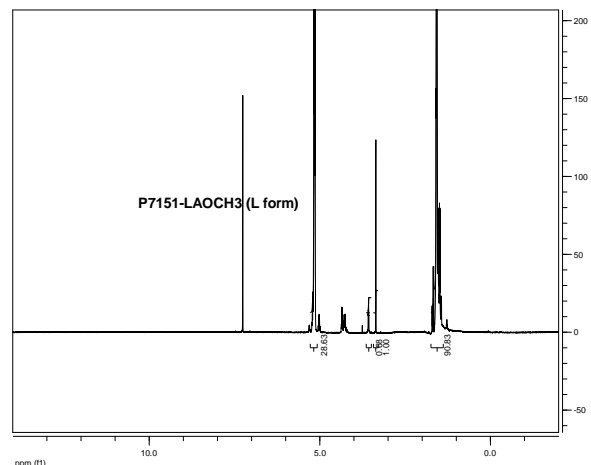
#### Characterization:

The molecular weight is calculated from NMR by comparing methane proton of lactide at 5.1ppm and methoxyethanol proton at 3.4 and polydispersity index (PDI) is obtained by size exclusion chromatography.

#### Solubility:

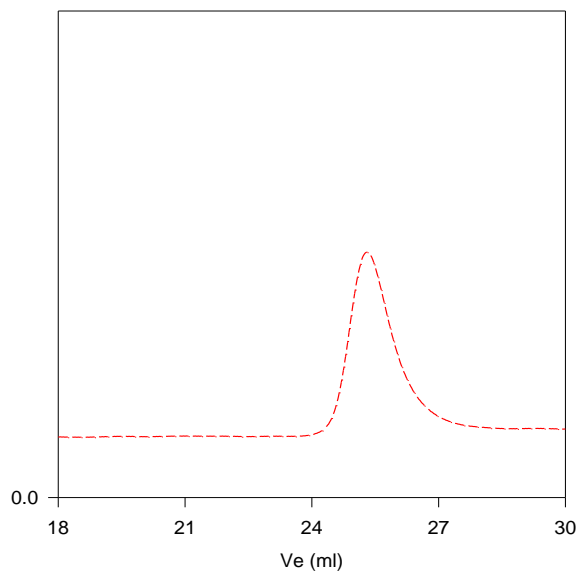
Polylactide is soluble in toluene, THF,  $\text{CHCl}_3$  and  $\text{CH}_2\text{Cl}_2$ . The polymer is insoluble in methanol, hexane and ether.

### $^1\text{H}$ NMR of the homopolymer:



### SEC of Homopolymer:

#### P7151A-LAOCH3 (L form)



Size exclusion chromatography result:

---  $M_n=6000$ ,  $M_w=7100$   $PI=1.18$  ( $M_n$  calculated from NMR)

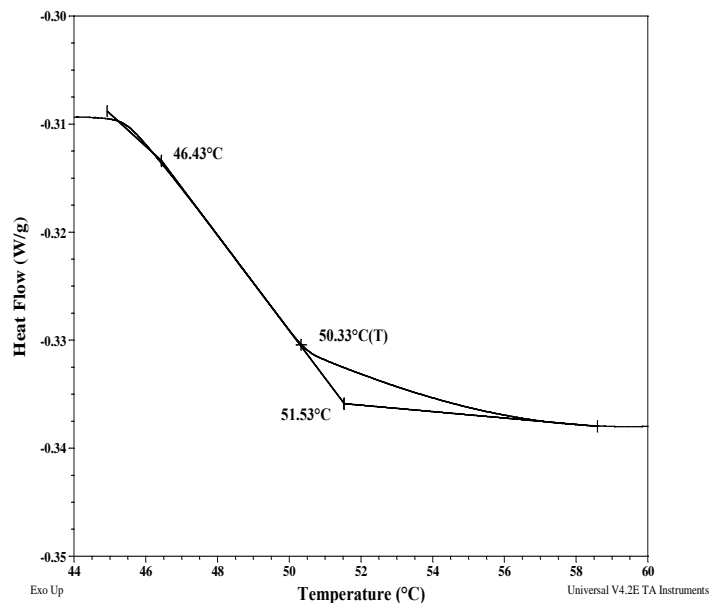
## Thermal analysis of the sample P7151A-LA

Thermal analysis of the samples 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

$T_m$ (°C)	$T_c$ (°C)	$T_g$ (°C)
155	98 & 121	50

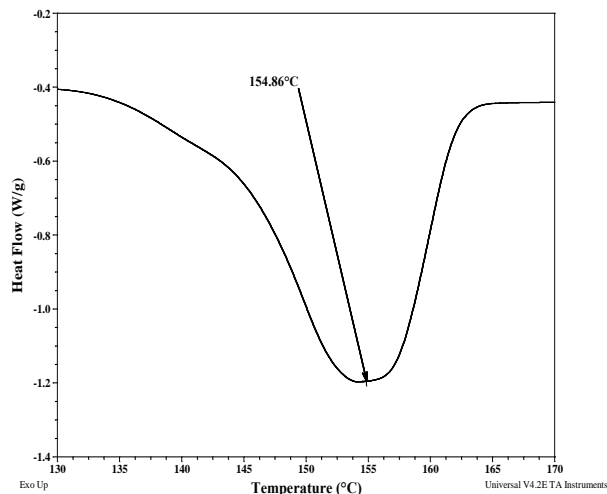
### Thermogram for the sample



## Melting and crystallization curves

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 the LA sample:



### Crystallization curve:

