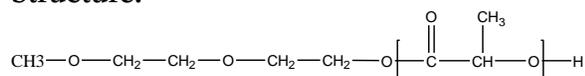


## Sample Name: Polylactide (D form)

### Sample #: P6687-LA (D-Form)

#### Structure:

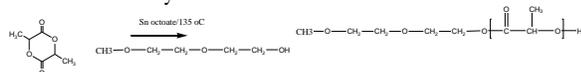


#### Composition:

$M_n \times 10^3$	PDI
16.0	1.25

#### Synthesis Procedure:

The polymerization of (D+) 3, 6-dimethyl-1,4-dioxane-2,5-dione was initiated with tin octoate catalyst.



#### Purification:

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

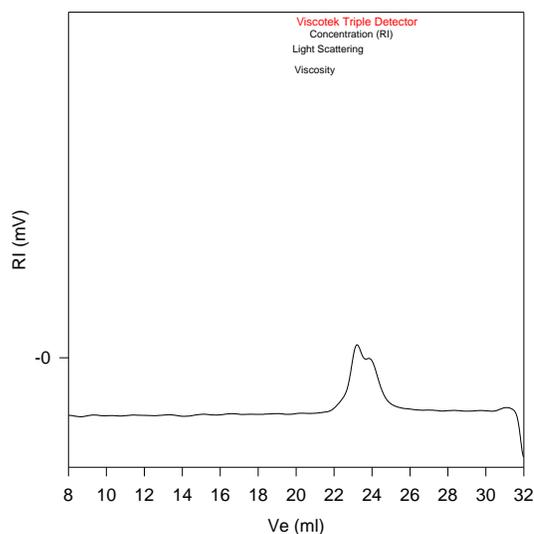
#### Characterization:

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

## SEC of Homopolymer: P6687-LA(D form)



Size Exclusion Chromatography of Polymer;

—  $M_n = 16,000$ ,  $M_w = 20,000$ ,  $M_w/M_n = 1.25$   
Solution Viscosity in THF at 35 °C: 0.32 dl/g  
 $dn/dc$  in THF at 35 °C: 0.046 ml/g  
R<sub>g</sub>: 5.40 nm

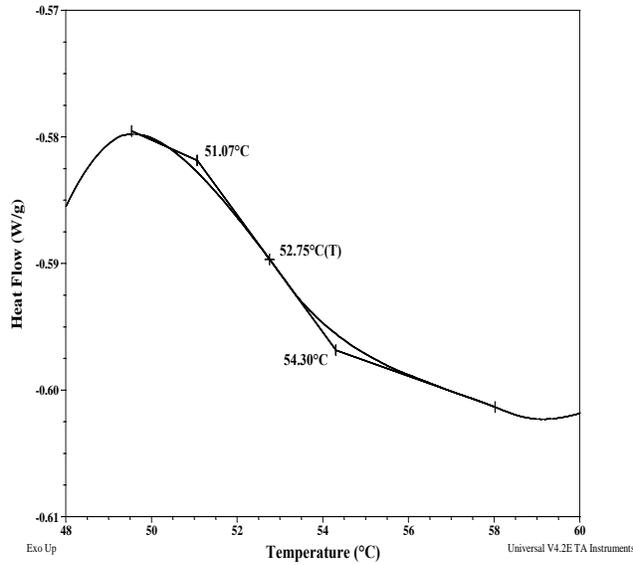
#### Reference for further details:

1. Ahmed, J., Zhang, J-X., Song, Z., Varshney, S.K. J. Thermal Analysis and Calorimetry, 95, 3, 957-964, 2009

### Thermal analysis of the sample:

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 ( $T_g$ ).

### Thermogram for PLA block:



### Thermal analysis results at a glance

For PLA (D-form)		
$T_g$ : 53°C	$T_m$ : 167°C	$T_c$ : 90°C

### Melting curve for the sample

The melting temperature ( $T_m$ ) was taken as the maximum of the endothermic peak.

### Melting curve for PLA block:

