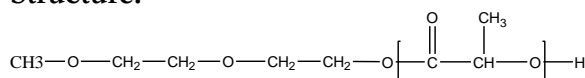


Sample Name: Polylactide (D form)

Sample #: P6687-LA (D-Form)

Structure:

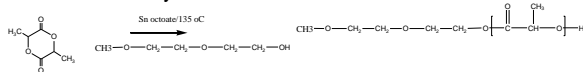


Composition:

$M_n \times 10^3$	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.

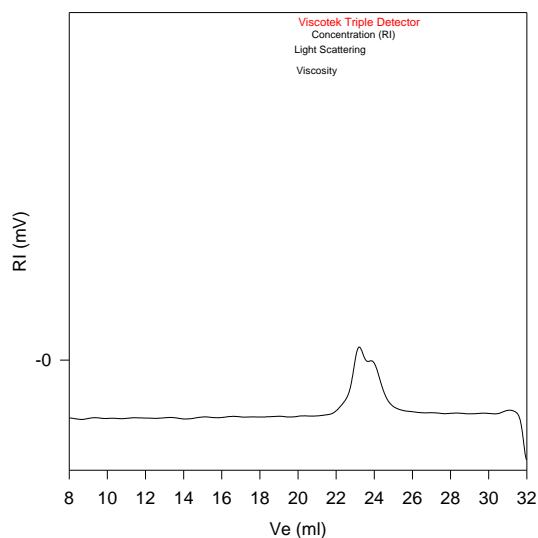
Characterization:

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 CHCl_3 and CH_2Cl_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_{90} : 5.40 nm

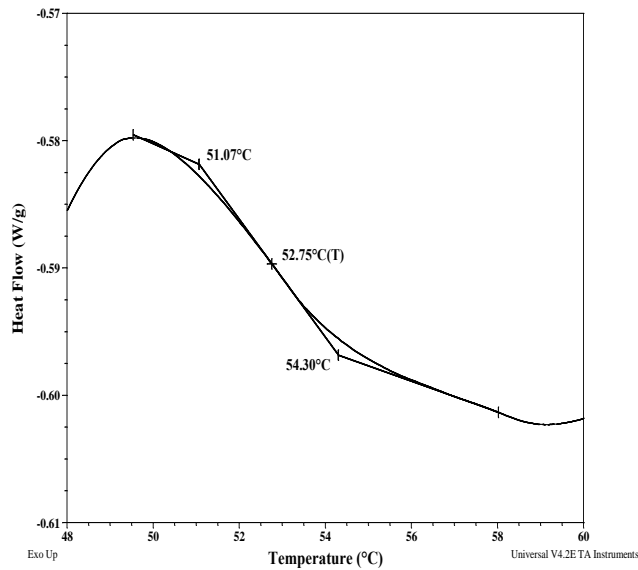
Reference for further details:

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:

