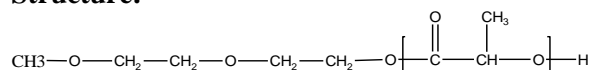


Sample Name: Polylactide monomethoxy terminated (D form)

Sample #: P7000-LA (D-Form)

Structure:

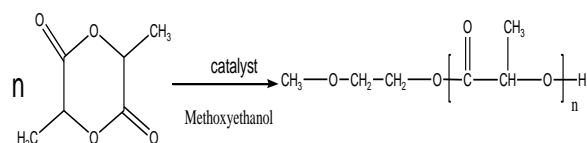


Composition:

$\text{Mn} \times 10^3$	PDI
2.5	1.14

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.



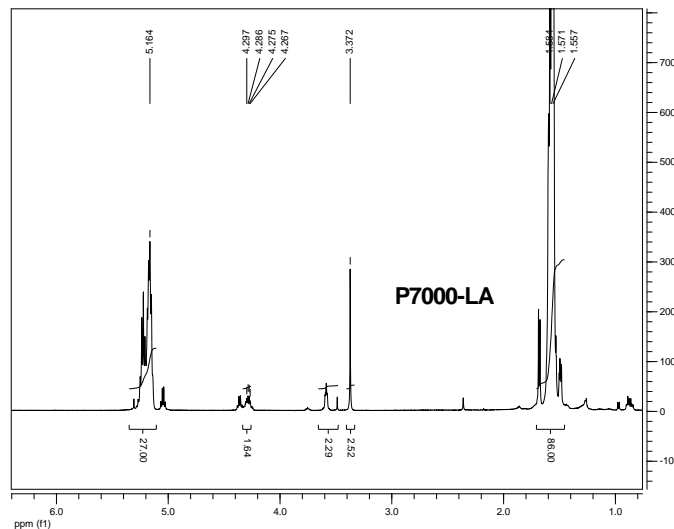
Characterization:

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

Solubility:

Polylactide is soluble in toluene, THF, CHCl_3 and CH_2Cl_2 . The polymer is insoluble in methanol, hexane and ether.

H NMR spectrum of the Sample:



Sample # P7000-LA

Reference: for further reading:

1. Ahmed, J., Zhang, J-X., Song, Z., Varshney, S.K. J. Thermal Analysis and Calorimetry, 95, 3, 957-964, 2009.
2. Ahmed, J., Varshney, S.K. & Zhang, J-X., J. Food Engg., 93, 308-312, 2009.

Contd. in the next page

Thermal analysis of the sample# P7000-LA (D-form)

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).

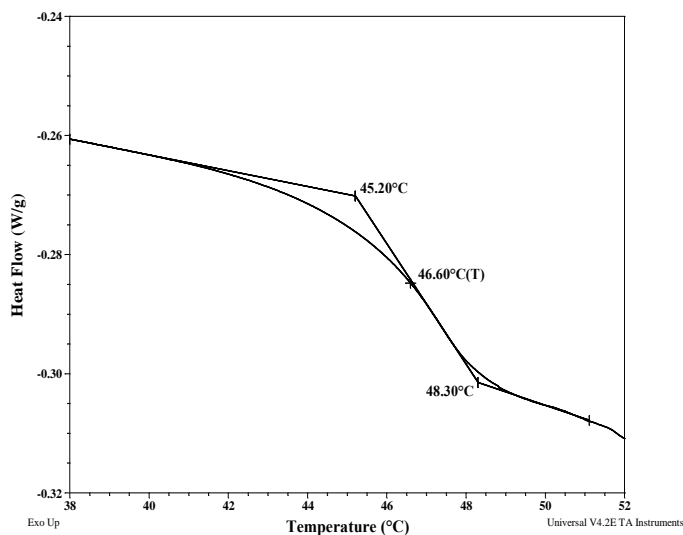
Melting and crystallization curve for the sample

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.

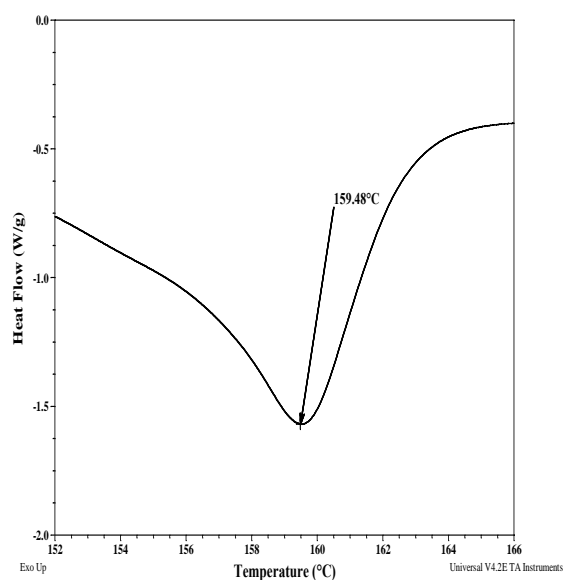
Thermal analysis results at a glance:

Thermal parameter	Value
Glass transition temp. (T_g)	47 °C
Melting temp. (T_m)	159 °C
Crystallization temp. (T_c)	102 °C

Thermogram for PLA block:



Melting curve for PLA block



Crystallization curve For PLA block

