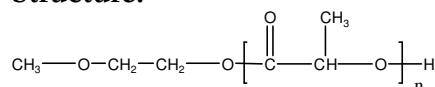


**Sample Name:** Polylactide

**Sample #:** P5348-LA (DL-Form)

**Structure:**

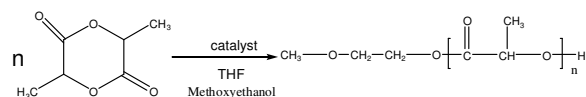


**Composition:**

$M_n \times 10^3$	PDI
6.5 (from HNMR)	1.25
$T_g$ (°C)	42°C

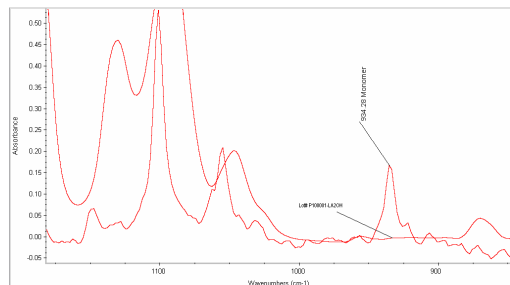
#### Synthesis Procedure:

The polymerization of 3, 6-dimethyl-1,4-dioxane-2,5-dione was carried out by ring opening polymerization using a catalyst.



#### Purification:

The polymeric solution was washed with cold ethanol to ensure the removal of un-reacted monomer (by FTIR absence of characteristic absorbance at 934 cm<sup>-1</sup>) and then polymer was precipitated in ethanol/ether.



**Characterization:** The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography.

#### Thermal analysis:

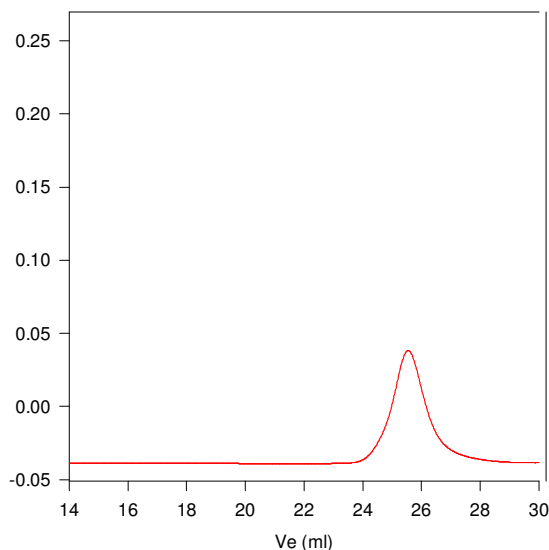
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ( $T_g$ ).

#### Solubility:

Poly(DL-lactide) is soluble in toluene, THF, CHCl<sub>3</sub> and CH<sub>2</sub>Cl<sub>2</sub>. The polymer is insoluble in methanol, hexane and ether.

#### SEC of Homopolymer:

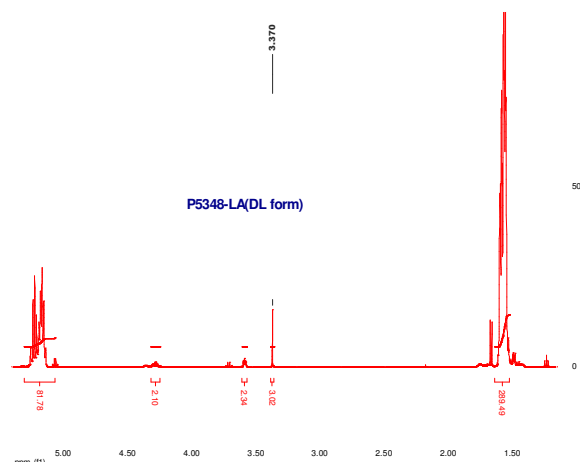
**P5348-LA(DL form)**



Size exclusion chromatograph of polymer

$M_n=6500$ ,  $M_w=8200$ ,  $PI=1.25$

#### <sup>1</sup>H NMR of the Polymer:



#### DSC thermogram for the sample:

