

Product Profile

Identification

Product Name: Methoxy-poly(D,L-lactide)

Synonym(s): PDLA, PLA, poly-DL-lactide

Linear Formula: $\text{CH}_3\text{O}(\text{C}_3\text{H}_4\text{O}_2)_n\text{H}$

Product Lot Number: P44557A-LA (dl)

Composition:

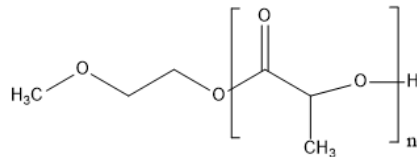
Mn x 10 ³	Mw x 10 ³	Mw/Mn (PDI)
4.5	4.5	1.01
Dp of (DL) LA= 63		

Appearance (Color) White to Faint ivory

Appearance (Form) Powder or honey like depends on its Mw.

Molecular Number determined by HNMR data analysis.

Product Chemical Architecture:



Method of Synthesis

3,6-Dimethyl-1,4-dioxane-2,5-dione(or DL Lactide rac-lactide), is the 50:50 racemic mixture of D- and L-Lactide. Rac-lactide can be readily polymerized via ring-opening polymerization, using a variety of metal or organocatalysts, yielding poly(D,L-lactide). While the resulting polymer is generally amorphous, the use of stereospecific catalysts can lead to heterotactic PLA, which exhibits some degree of crystallinity.

Solubility in different solvents

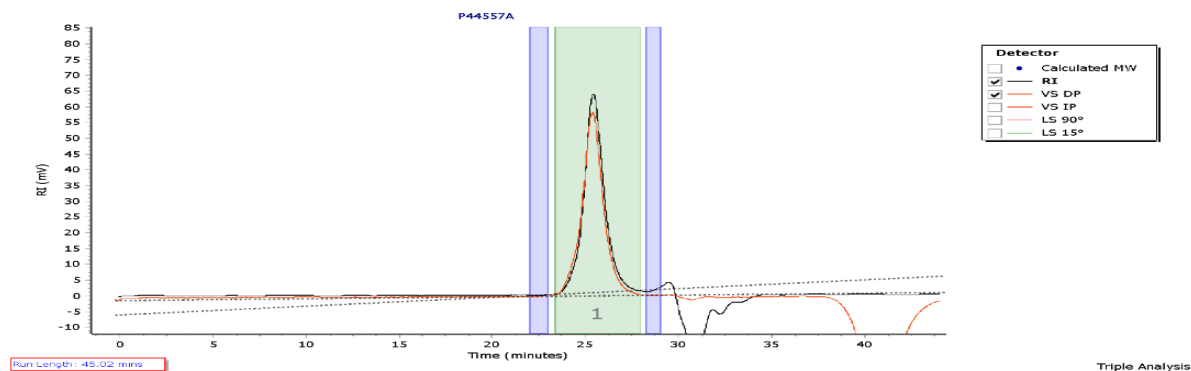
THF (warm)	√		
CHCl ₃	√		
Acetone	√		

Architecturally controlled well-defined materials with varying properties can be prepared by controlling dP of monomer units. OH, SH and NH₂ end terminated polymers allows for facile further chemical modification of these materials.

A. Gel Permeation Chromatography (GPC), SEC- Profile:

P44557A

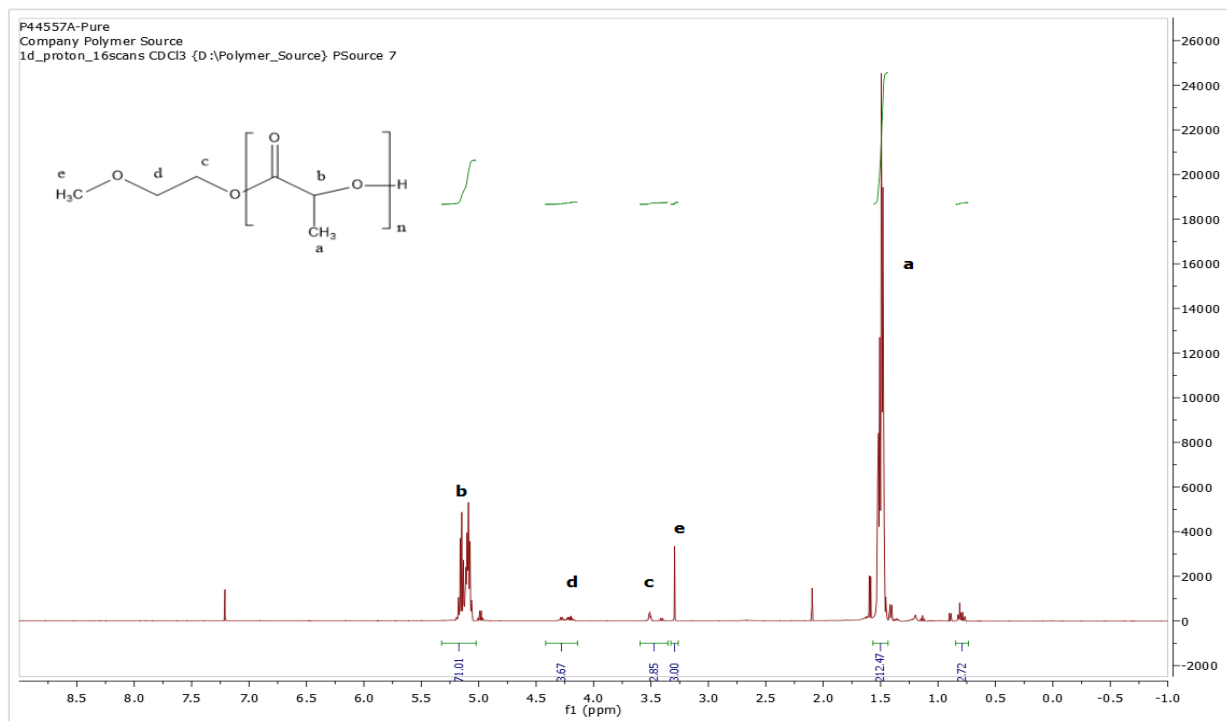
Chromatogram Plot



Molecular Weight Averages

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	4537	4485	4515	4544	4573	4538	1.007

B. ¹H NMR of the polymer:



C. Thermal properties based on different isomers of polylactide:

