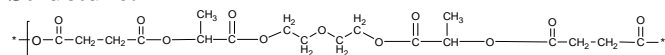


**Sample Name:**  
**Polyanhydride based on polylactide (L form)**

**Sample #:** P10013-LA(L)-Anh

**Structure:**

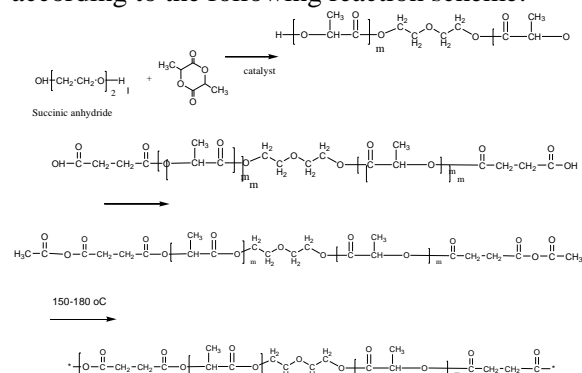


**Composition:**

|  |           |
|--|-----------|
| $M_n \times 10^3$ (g/mol) (total)                                  | 22.0      |
| $M_w/M_n$  | 2.3       |
| $M_n$ of L polylactide chain                                       | 5,500     |
| Number of repeating polylactide chain                              | 3 by GPC  |
| Number of repeating polylactide chain based on terminal end groups | 4 by HNMR |

**Synthesis Procedure: Center block Diethylene glycol**

The polyanhydride based on polylactide (L) is prepared according to the following reaction scheme:



**Characterization:**

The product was characterized by size exclusion chromatography (SEC) runs in DMF and  $^1\text{H}$  NMR solution viscosity in  $\text{CdCl}_2$ .

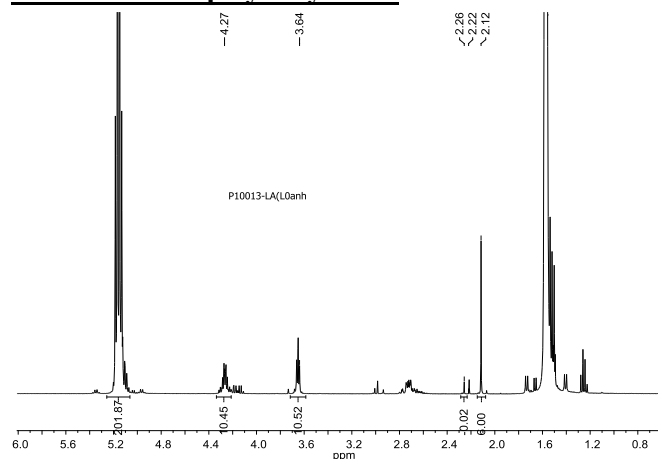
**Solubility:**

The polyanhydride is soluble in chloroform, DMF. And it precipitated out from ether and hexanes.

**Following Photo shows that Fiber can be drawn by melt process, Since LA is L form Crystalline, the obtained fiber is brittle:**



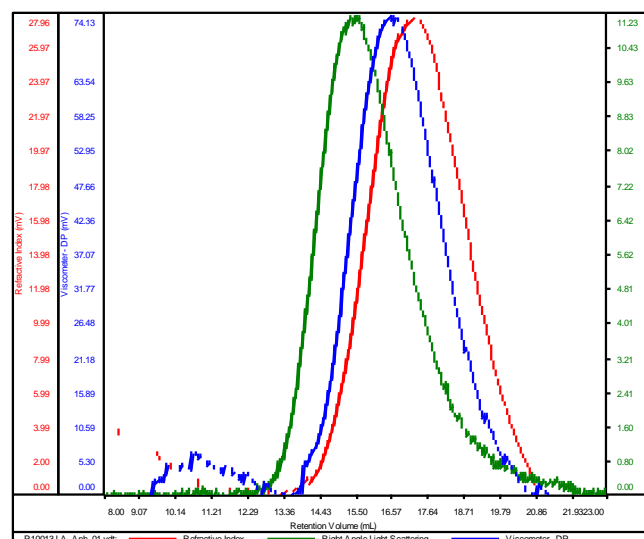
**$^1\text{H}$  NMR of the polyanhydride:**



**SEC elugram of the polyanhydride:**

P10013-LA(L)Anh

|           |                            |
|-----------|----------------------------|
| Conc      | 2.2178                     |
| dn/dc     | 0.1650                     |
| Solvent   | DMF w 0.023M LiBr          |
| Flow Rate | 0.7000                     |
| Method    | PS-80k_2018-04-02-0000.vcm |



| Sample                    | Mn     | Mw     | Mp     | Mw/Mn | IV     |
|---------------------------|--------|--------|--------|-------|--------|
| P10013-LA_An timer_01.vdt | 21,304 | 50,181 | 22,582 | 2.355 | 1.1959 |

**References:**

S. K. Varshney, Olexander Hnojewyl, J.X. Zhang, and Patrick Rivelli, US Pat 7,674,285 B2 2010 Poly anhydride Polymers and Their Uses inn Biomedical Devices And 2009/0253806A1