

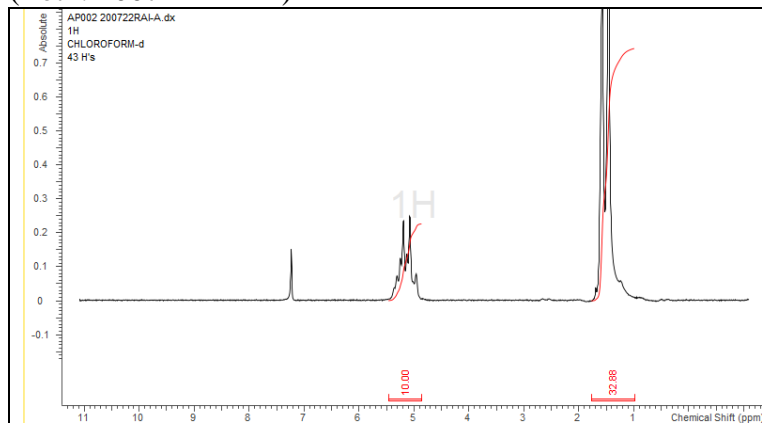
No. AP002

Certificate of Analysis

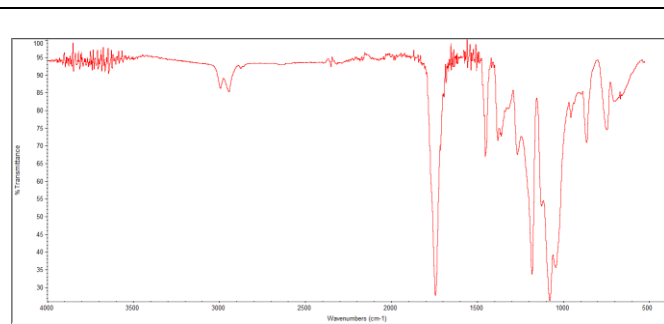


Product Name: Poly(DL-lactic acid) ester endcapped (Mn: 25,000-35,000 Da)

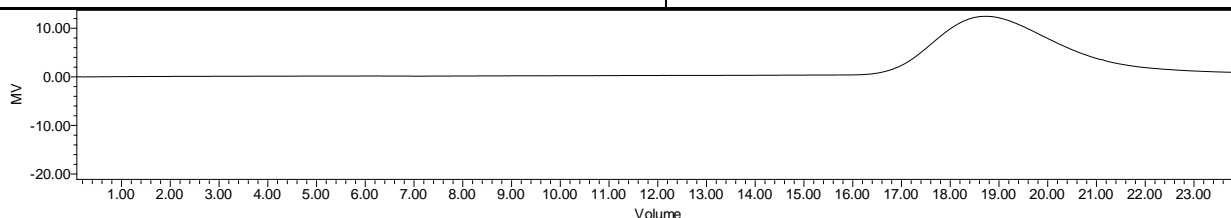
(Lot#: 200722RAI-A)



H-NMR Spectrum of copolymers in CDCl₃ (NMReady-60e, Nanalysis 60 MHz) NMR of PDLLA polymers in CDCl₃

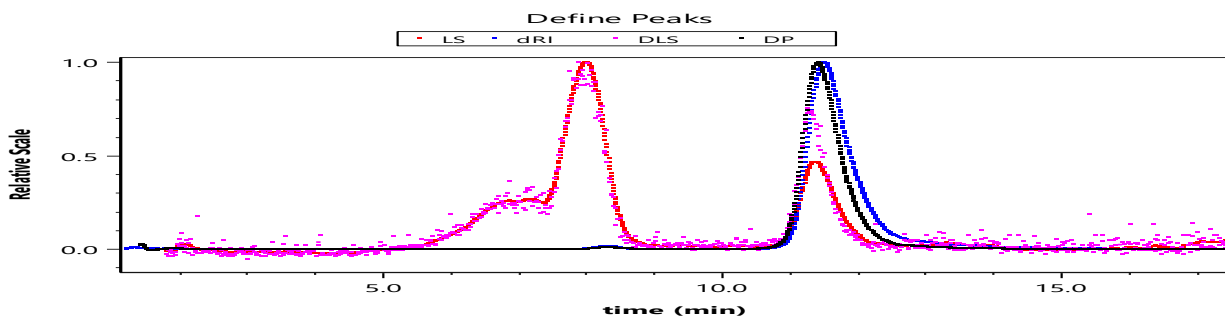


FTIR Analysis: Collected from Nicolet Avatar 380 spectrometer with ATR Smart Orbit and analyzed in transmission mode.



GPC-ES Analysis Method: Waters Breeze 2 system with 1 ml/min THF flow across three GPC columns. Detection via refractive index, calibrated against polystyrene standards.

Polymer	M _n (from GPC)	M _w (from GPC)	PDI
PDLLA	34,866	62,722	1.80



GPC-4D Analysis Method: Agilent 1260 Infinity II system 0.6 ml/min Acetone flow across TSKgel GMHHR-L, 7.8 mm x 30 cm. Detection Dawn Heleos II (MALLS), Optilab T-rex (RI), Dynapro nanostar (DLS), and Viscostar III (viscosity), universal calibration (Wyatt).

Polymer	M _n (from GPC-4D)	M _p (from GPC-4D)	M _w (from GPC-4D)	Radius (r(avg), nm)	Intrinsic viscosity ([η](avg), mL/g)
PDLLA	37,449	47,773	48,336	43.9	35.622

* - Due to differences in methodology, Results from GPC-4D universal calibration will be different from those obtained from GPC-ES. The data from GPC-4D analysis is provided for customer information only.

Structure of PDLLA polymers

