

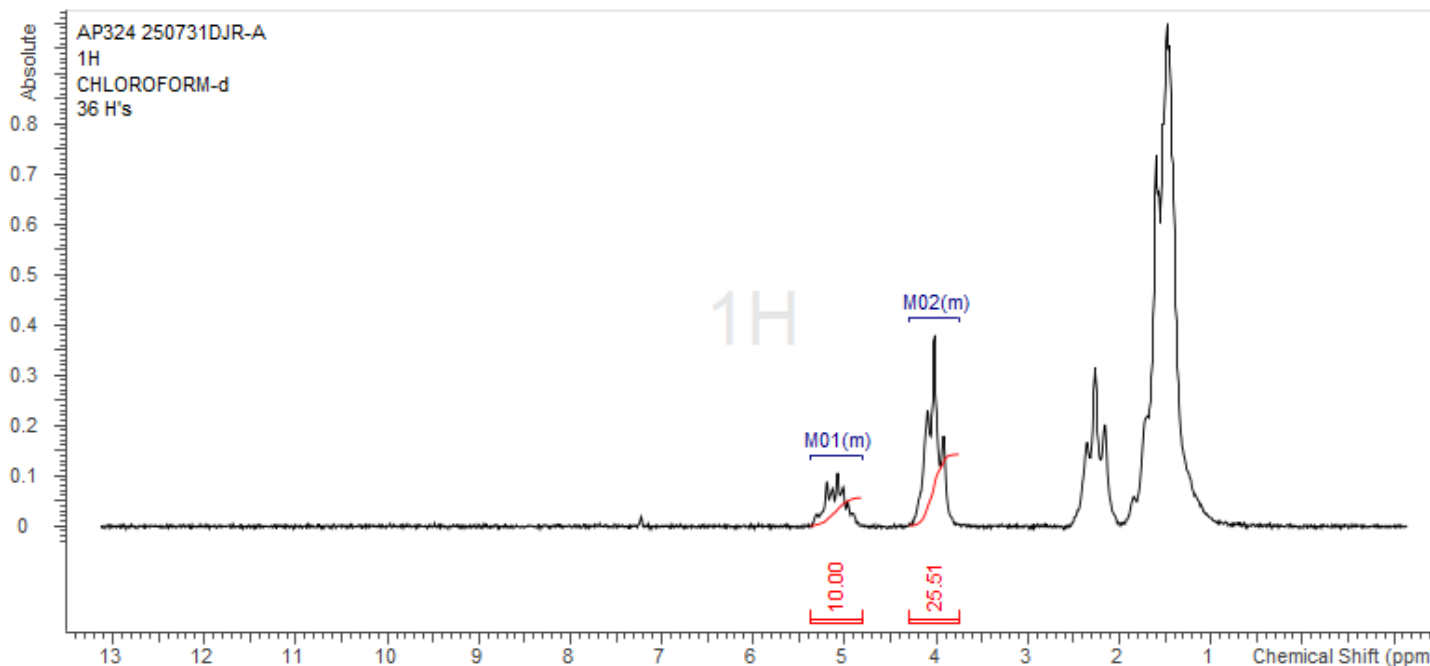
No. AP324

Certificate of Analysis



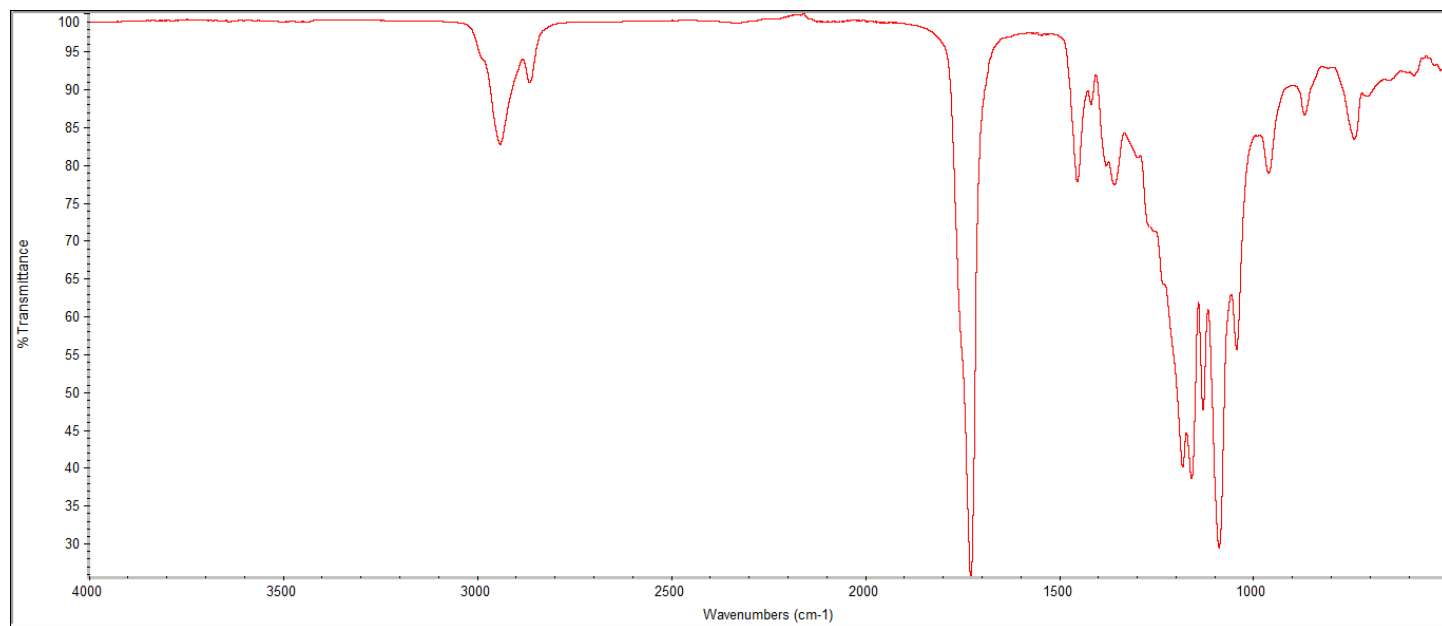
Product Name: Poly(L-Lactic-co-caprolactone) copolymer ester endcap (40:60 LA:CL, Mn: 55,000-65,000 Da) (Lot#: 250731DJR-A)

H-NMR



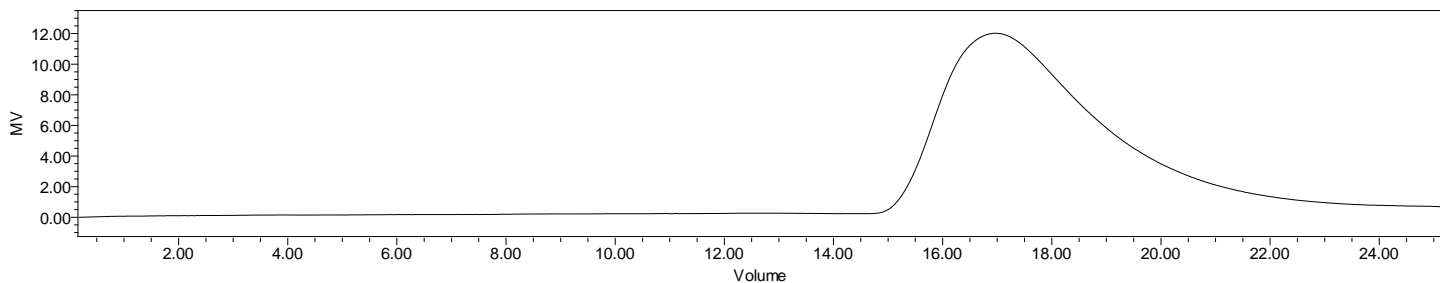
H-NMR Spectrum of copolymers in CDCl₃ (NMReady-60e, Nanalysis 60 MHz) NMR of PLLCL copolymer: LA-CL =44%-56% molar ratio (LA:CL 33%:67% w:w)

FTIR



FTIR Analysis: Collected from IS5 ID7-ATR spectrometer (Thermo Scientific) and analyzed in transmission mode.

GPC-ES



Polymer	M _n (from GPC)	M _w (from GPC)	PDI
PLLCL	59,468	84,317	1.42

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.

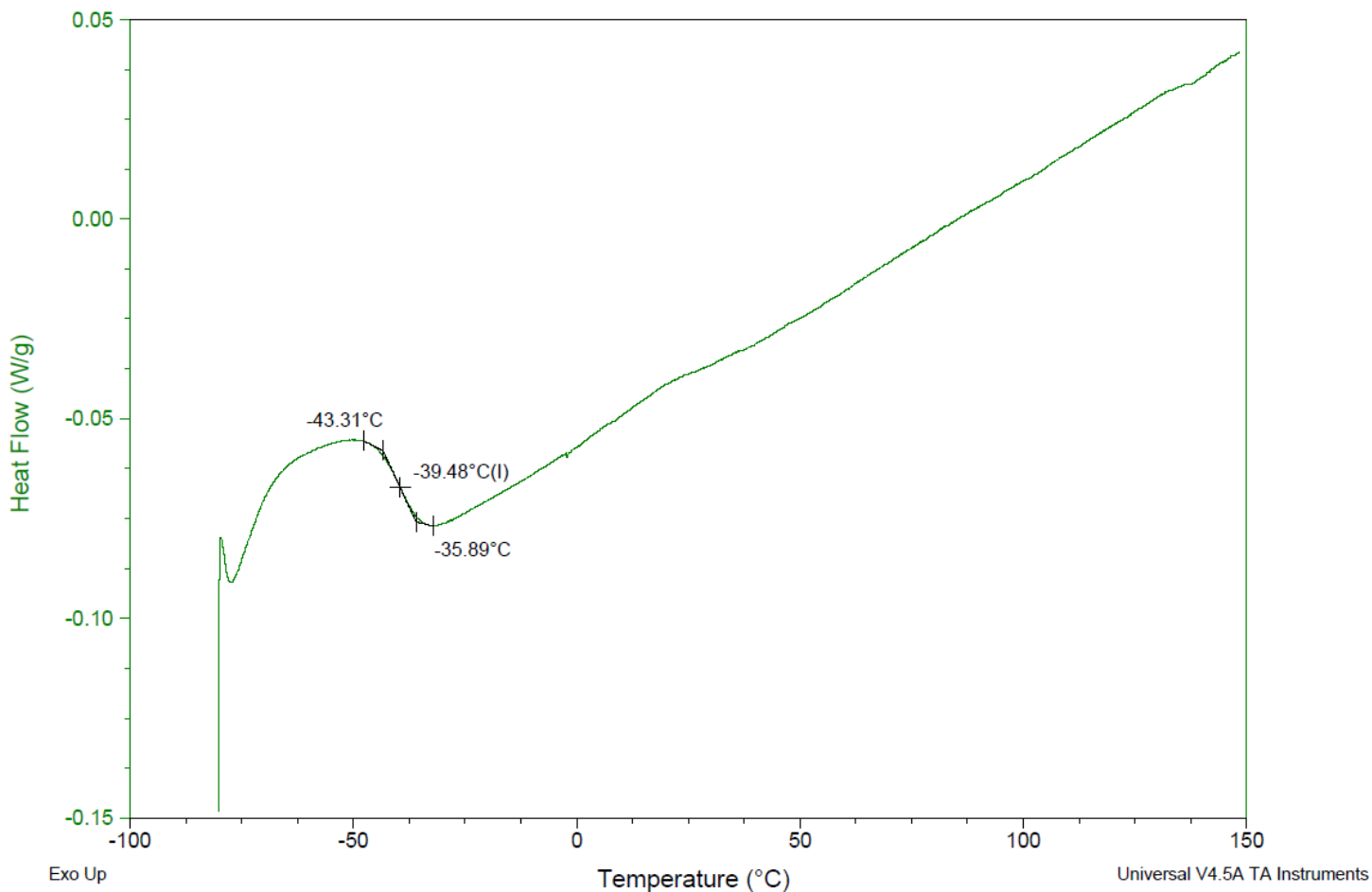
DSC

Sample: AP324 250731DJR-A
Size: 6.2000 mg
Method: Modulate-no-eqb

DSC

File: C:\...\COA\AP324 250731DJR-A DSC.003

Run Date: 06-Aug-2025 10:40
Instrument: DSC Q2000 V24.11 Build 124

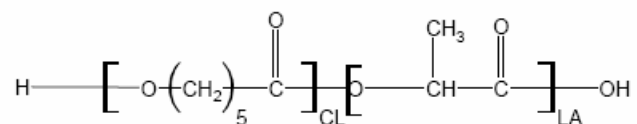


DSC Testing: 1-5 mg sample tested in crimped aluminum pan on a TA Instruments Model Q2000 with procedure equilibraion 100 °C, isothermal 5 minutes, equilibrate -80 °C, data on, ramp 10 °C/min to 150 °C. T_g = -39.48 °C

IV

Inherent Viscosity: 0.363 ± 0.036 dL/g (calculated from kinematic viscosity at 2% w/v Acetone on Rheosense microVISC, n=3) at 25°C.

Structure of copolymers



Approved By:
Amie Tyler
Quality Manager