

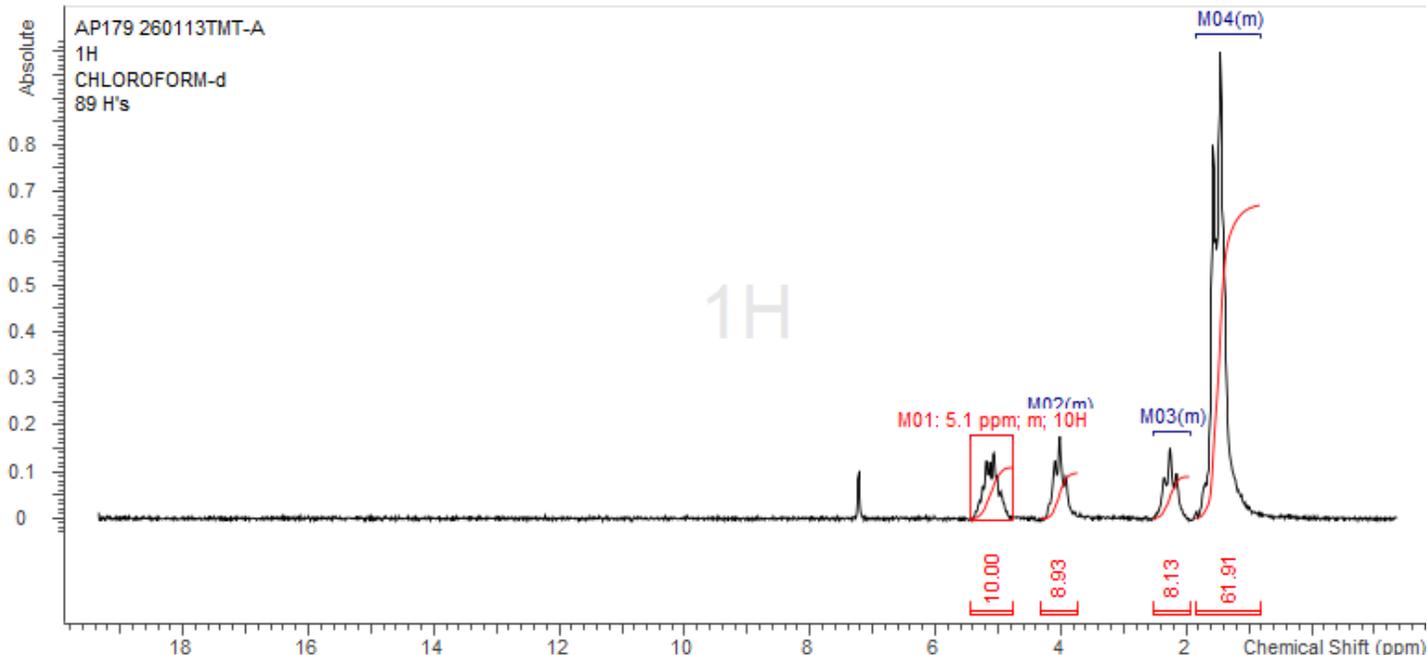
No. AP179

# Certificate of Analysis



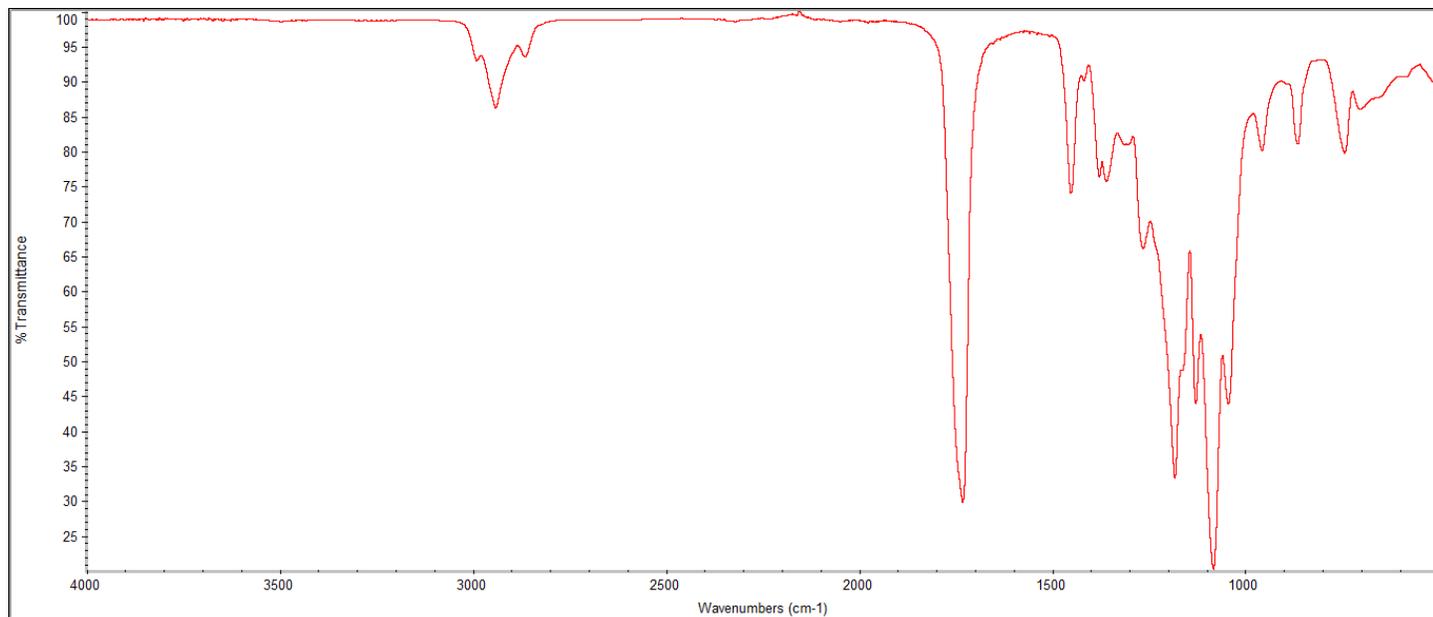
Product Name: Poly(DL-lactide-co-caprolactone) copolymer LA:CL 70:30 acid endcap ( $M_n$  35,000-45,000 Da) (Lot#: 260113TMT-A)

## H-NMR



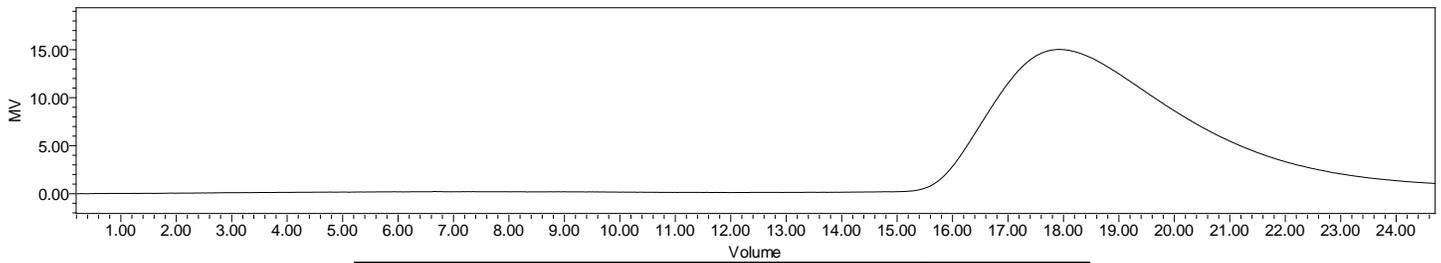
H-NMR Spectrum of copolymers in  $CDCl_3$  (NMReady-60e, Nanalysis 60 MHz) NMR of PLCL copolymer: LA-CL =69%-31% molar ratio (LA:CL 59%:41% w:w)

## FTIR



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

## GPC-ES



Polymer	M <sub>n</sub> (from GPC)	M <sub>w</sub> (from GPC)	PDI
PLCL	39,560	53,320	1.35

**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

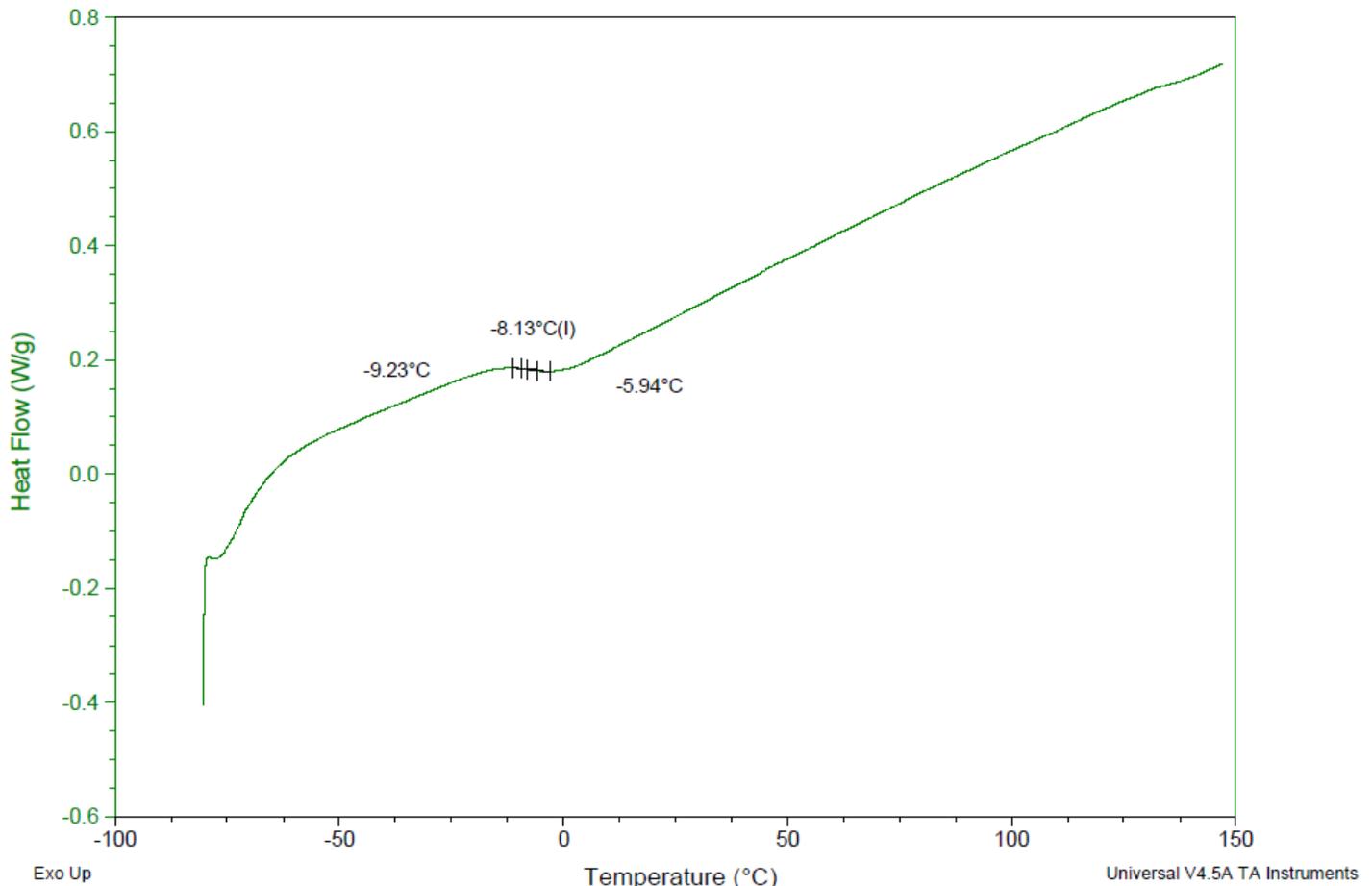
Sample: AP179 260113TMT-A  
 Size: 4.2000 mg  
 Method: Ramp

DSC

File: C:\...\COA\AP179 260113TMT-A.001

Run Date: 05-Feb-2026 09:03

Instrument: DSC Q2000 V24.11 Build 124

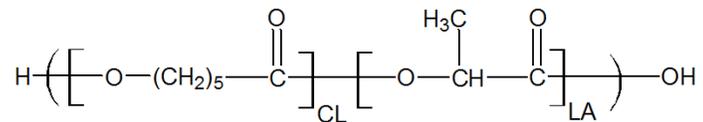


**DSC Testing:** 1-5 mg sample tested in crimped aluminum pan on a TA Instruments Model Q2000 with procedure equilibraion 100 °C, isothermal 5 minutes, equilibrate -80 °C, data on, ramp 10 °C/min to 150 °C. T<sub>g</sub> = -8.13 °C

## IV

**Inherent Viscosity:**  $0.287 \pm 0.011$  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