

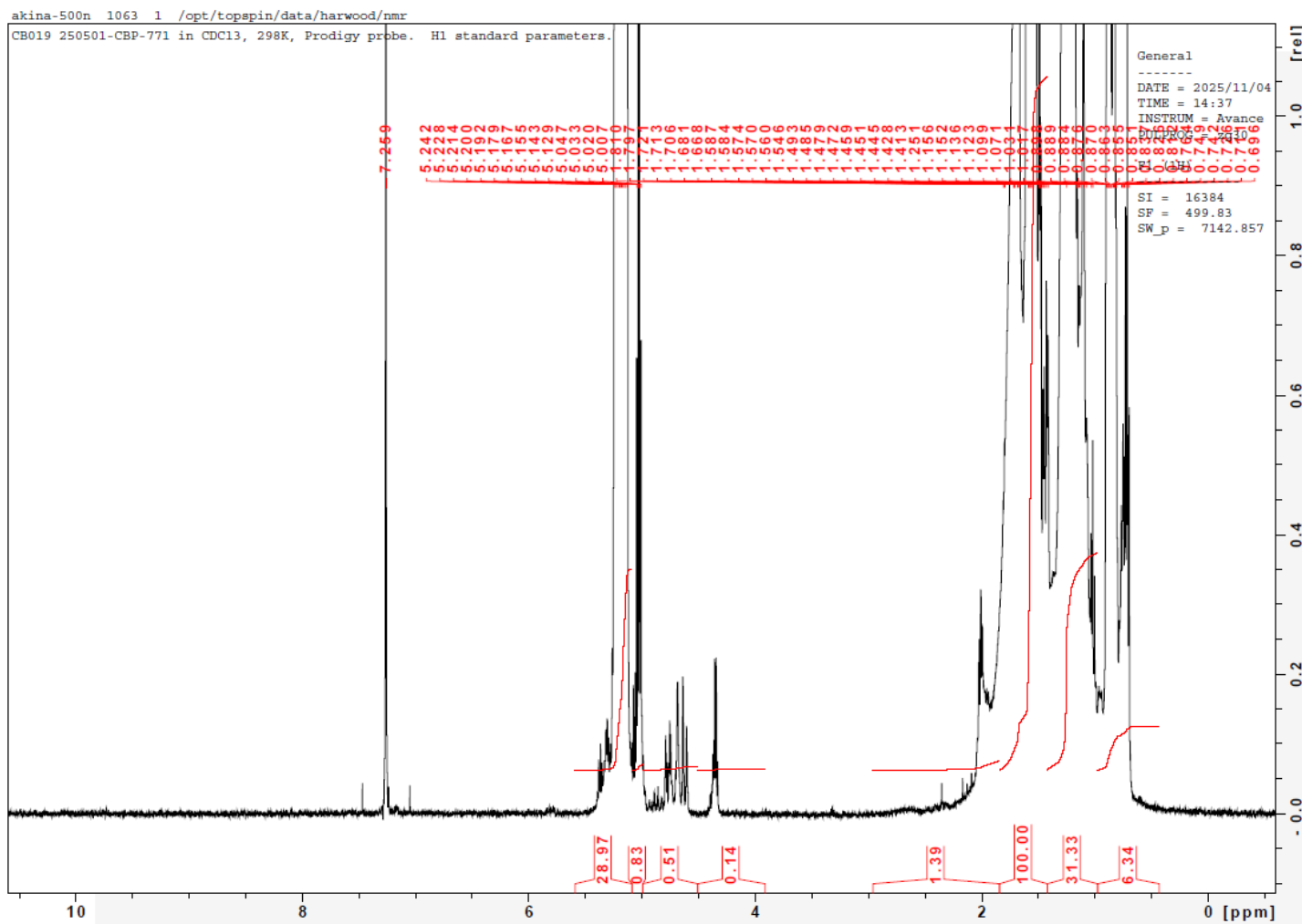
No. CB019

Certificate of Analysis



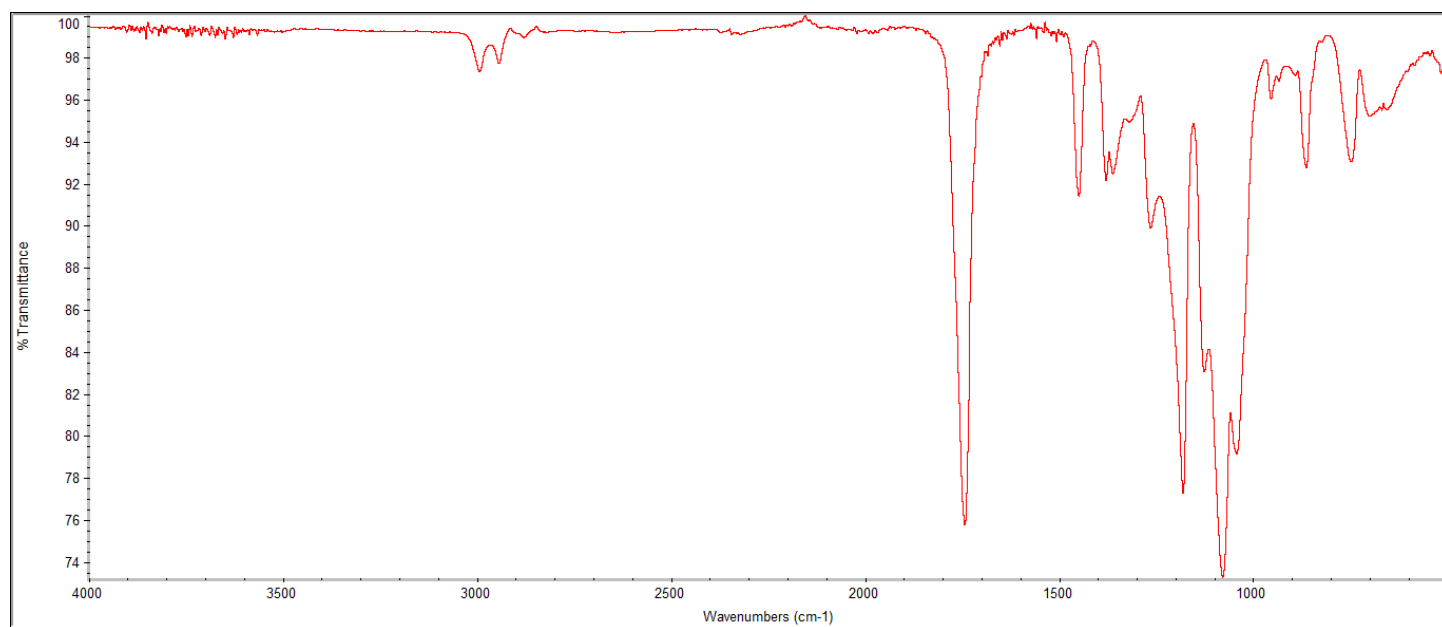
Product Name: Poly(D,L-Lactide) I.V. 0.32 – 0.48 dl/g, acid endcap (PDL 04A)
(Lot # 250501CPB-771)

H-NMR



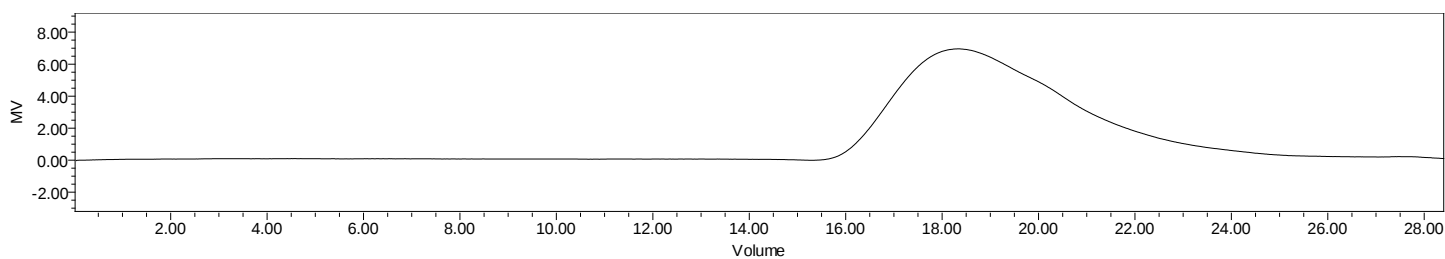
H-NMR Spectrum of copolymers in CDCl₃ (NMReady-60e, Nanalysis 60 MHz) NMR of P(DL)LA copolymer.

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
P(DL)LA	35,154	46,730	1.33

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.

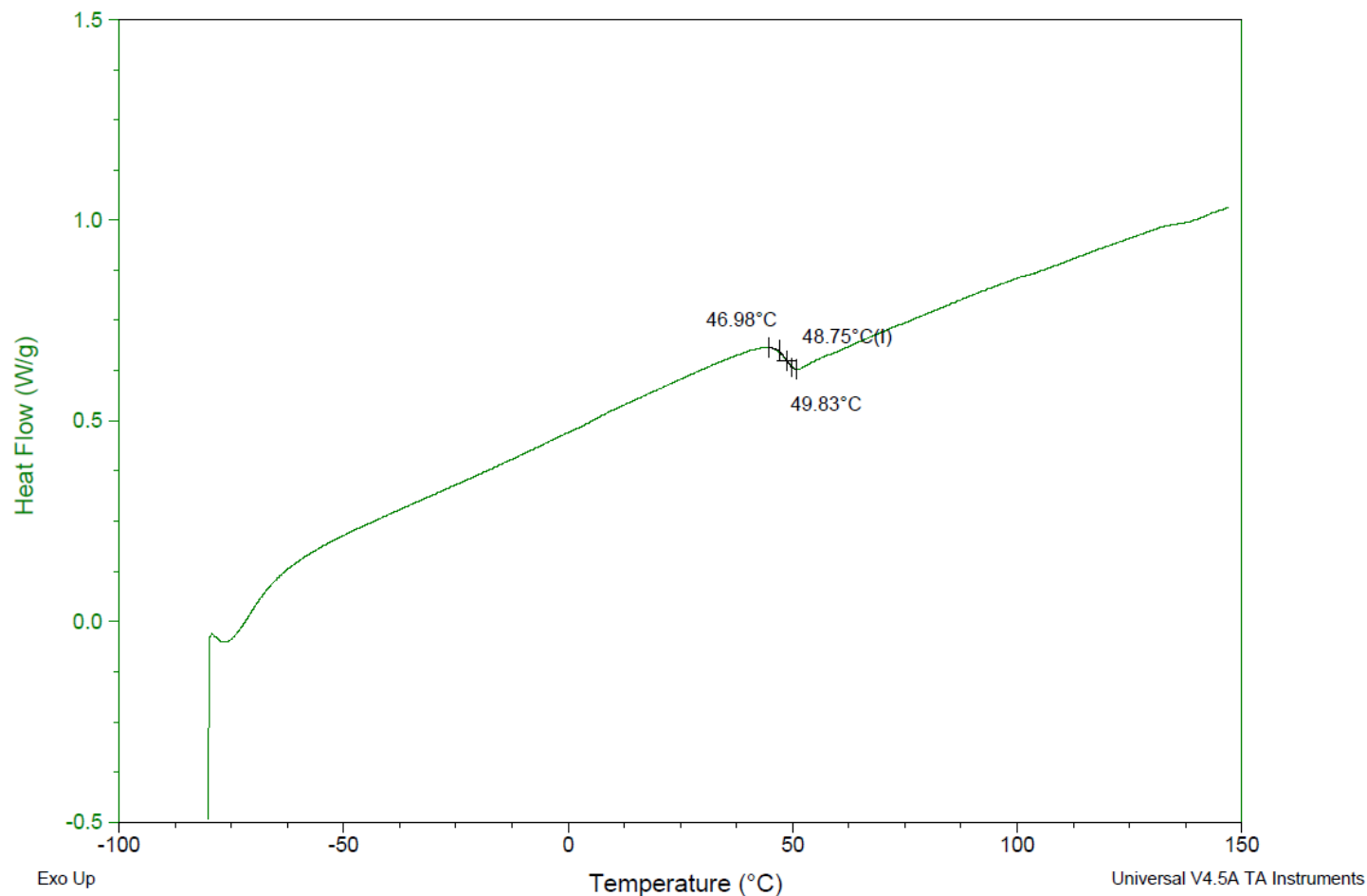
DSC

Sample: CB019 250501CBP-771
Size: 1.9000 mg
Method: Ramp

DSC

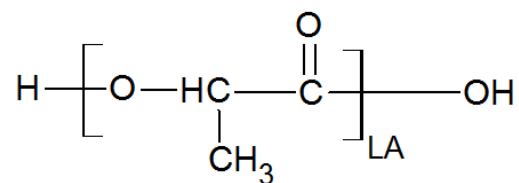
File: C:\...\COA\CB019 250501CBP-771.001

Run Date: 06-Nov-2025 12:39
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. Tg = 48.75 °C

Structure of copolymers



Manufacturer Provided Data

Assay	Specification	Result
Tg, DSC, 10 °C/min	45-55 °C	49.6 °C
Tin content	<50ppm	22 ppm
Water content ¹	<0.50%	0.04%
Residual monomer, DL Lactide	<2.4%	2.2%
Inherent Viscosity ²	0.35-0.45 dL/g	0.41 dL/g
Endotoxin	<6 EU/g	<0.25 EU/g
Residual solvent, total	<0.10%	0.01 %
Residual solvent, Toluene	<890 ppm	78 ppm
Residual solvent, Ethyl Acetate	<5000 ppm	1 ppm
Acid Number ¹	>3.0	4.0
Mw kg/mol		40
Mn kg/mol		17
Mw/Mn		2.3

1 – Measured by titration

2 – Measured at 25 °C in Chloroform c=0.5 g/dL

Approved By:
Amie Tyler
 Quality Manager