

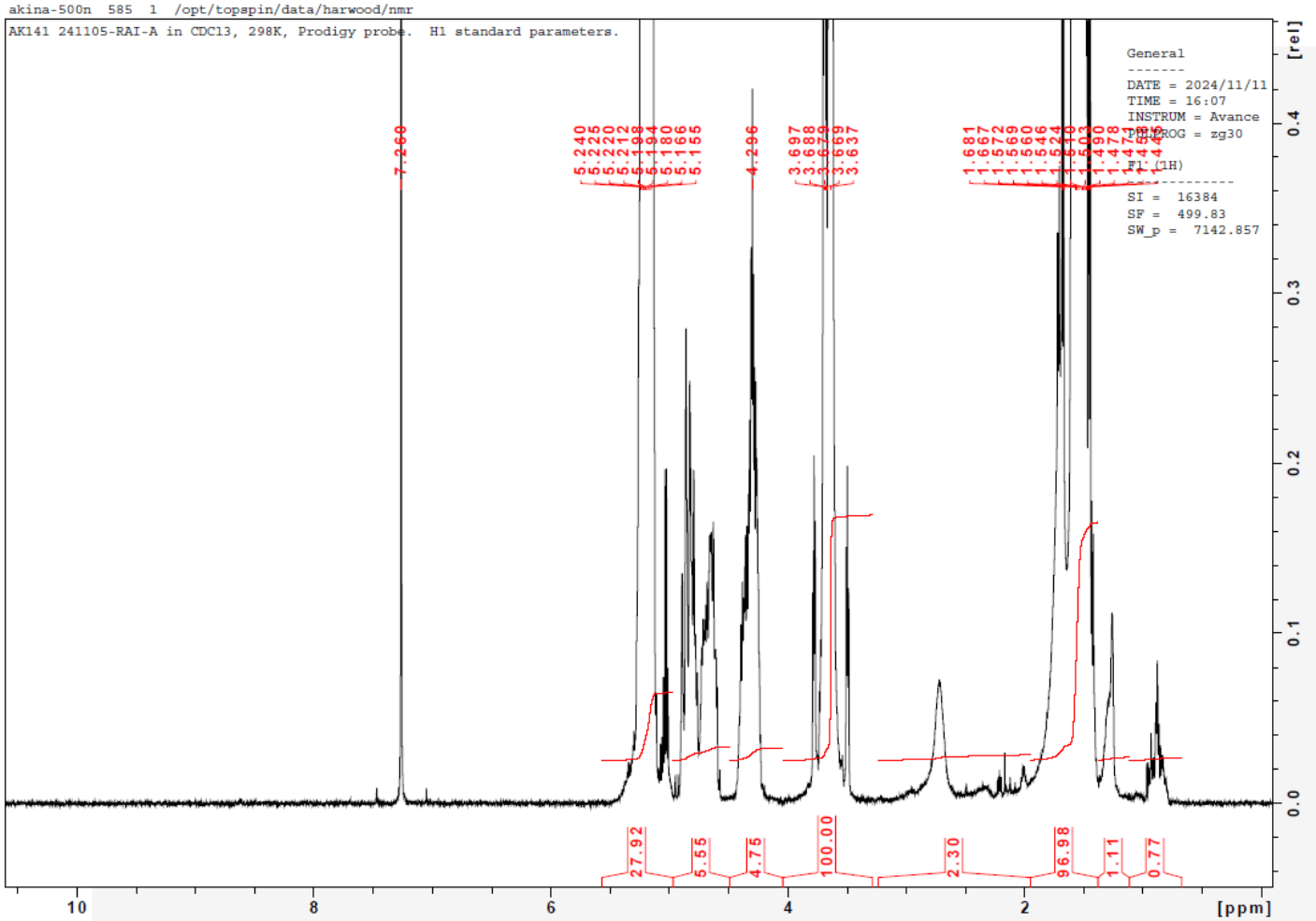
No. AK141

Certificate of Analysis



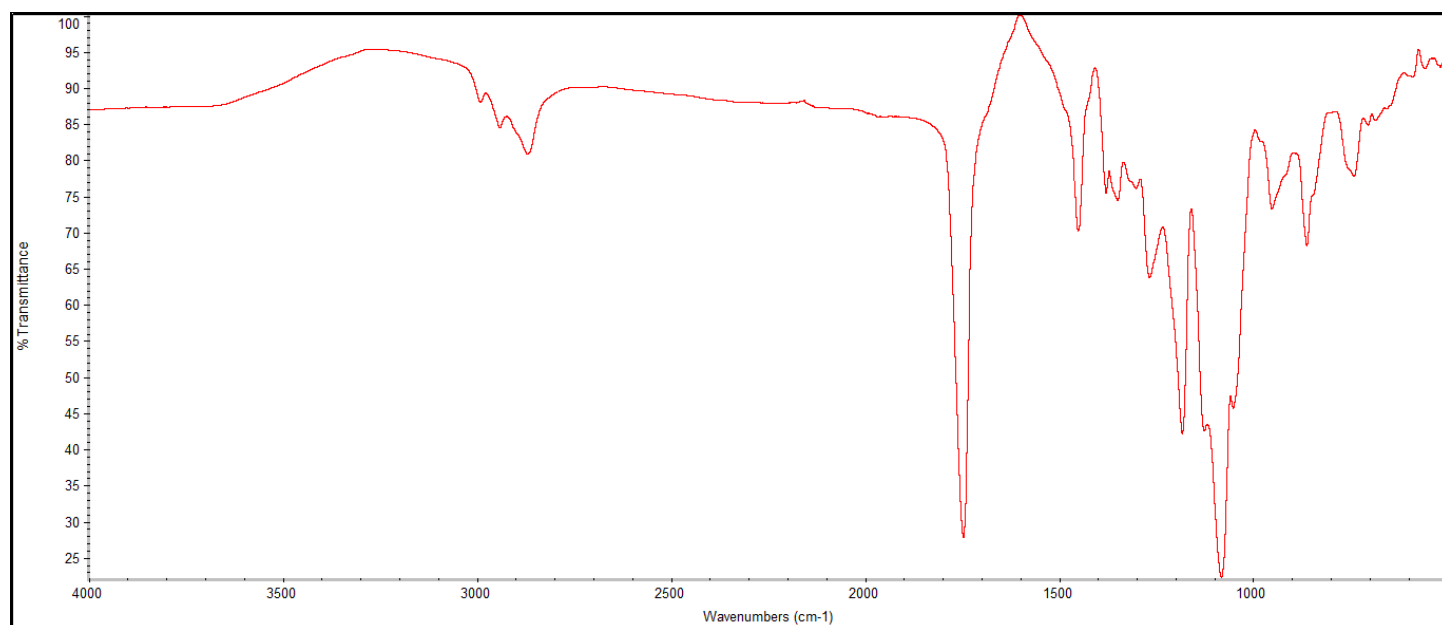
Product Name: Poly(lactic-co-glycolic acid)-*b*-Poly(ethylene glycol)-*b*-Poly(lactic-co-glycolic acid) copolymers (15:1 LA:GA, 1,750-1,500-1,750 Da)
(Lot#: 241105RAI-A)

H-NMR



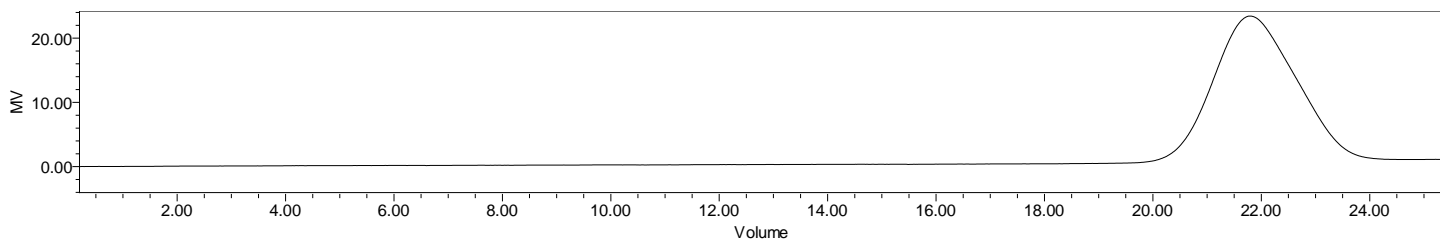
H-NMR Spectrum of copolymers in CDCl₃ (Bruker ≥300 MHz, PINMRF) NMR of PLGA-PEG-PLGA copolymer: EG*/LA-GA =33*/37-4 (Mn EG*/LA:GA 1454*/2654-213 Da) LA:GA 93%:7% *-from MFG data

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
PLGA-PEG-PLGA	5468	6981	1.28
PEG-Precursor*	1472*		

*- from MFG data

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.

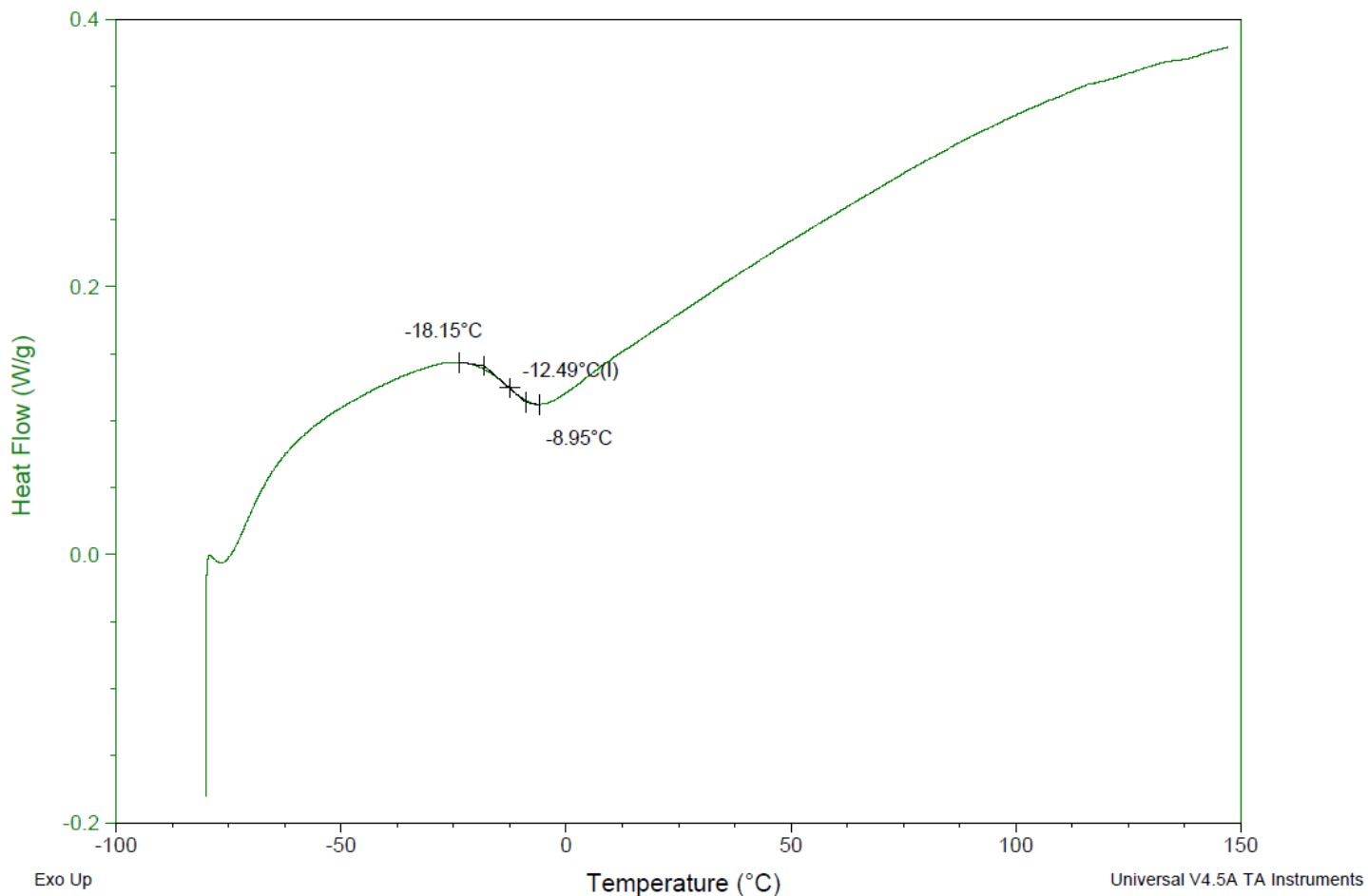
DSC

Sample: AK141 241105RAI-A
Size: 5.6000 mg
Method: Glass Transition-simple

DSC

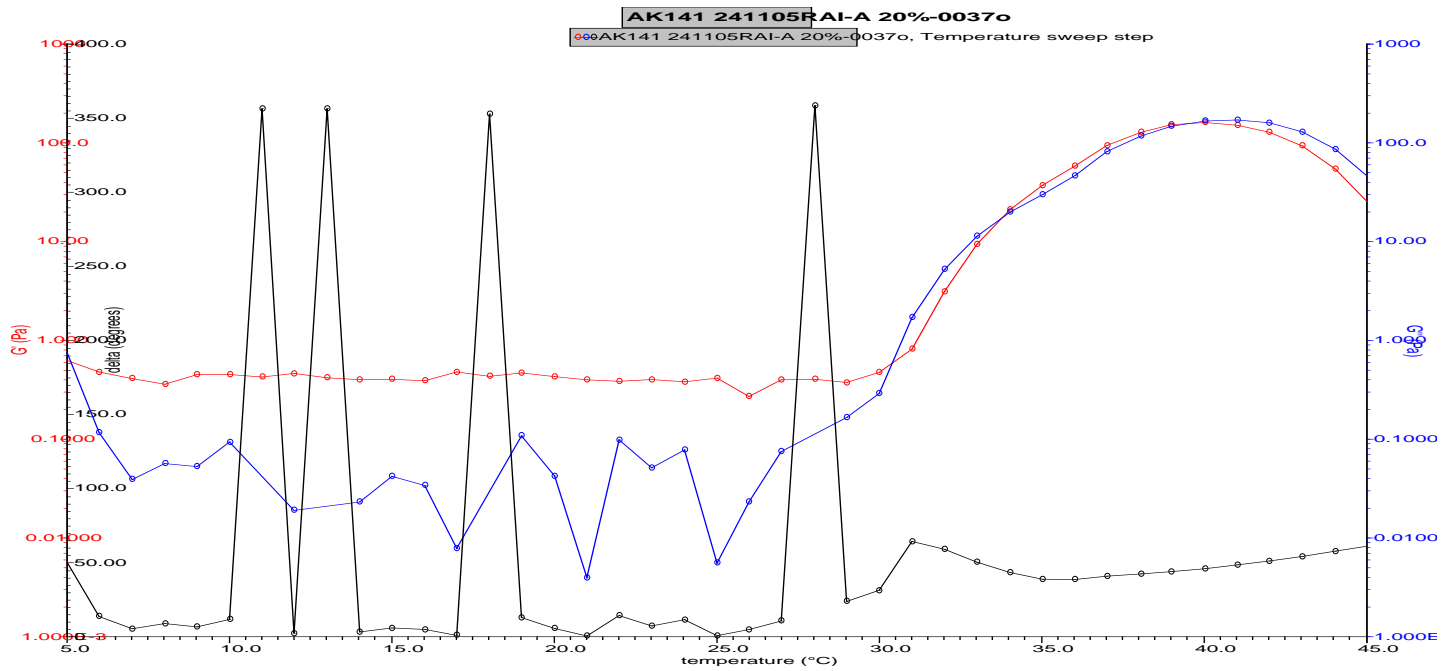
File: \\...COA\AK141 241105RAI-A DSC.001

Run Date: 13-Nov-2024 13:46
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 = -12.49 °C

RHEOLOGY



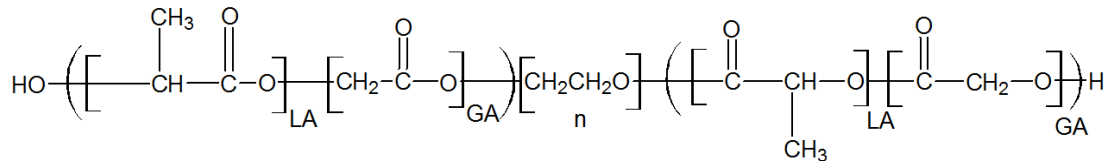
Rheology performed on AR2000 (TA instruments) with 60mm 2degree cone on 20% w/v polymer in water dissolved over 3 days with stirring at 20°C. Viscosity of solution at 0.1 (sec⁻¹) and 5°C was measured (1 minute peak hold 5 second test intervals). Rheology performed by oscillating at constant 6.283 rad/s, 0.1% strain, in increments of 1°C ranging from 5-45°C with 1 minutes of temperature equilibration at each point.

Viscosity 20% w/v solution at 5°C	0.05519 Pa/s
-----------------------------------	---------------------

IV

Inherent Viscosity: 0.077 dL/g (calculated from kinematic viscosity at 2% w/v Acetone on Rheosense microVISC, n=3) at 25°C.

Structure of PLGA-PEG-PLGA copolymers



Approved By:
Amie Tyler
Quality Manager