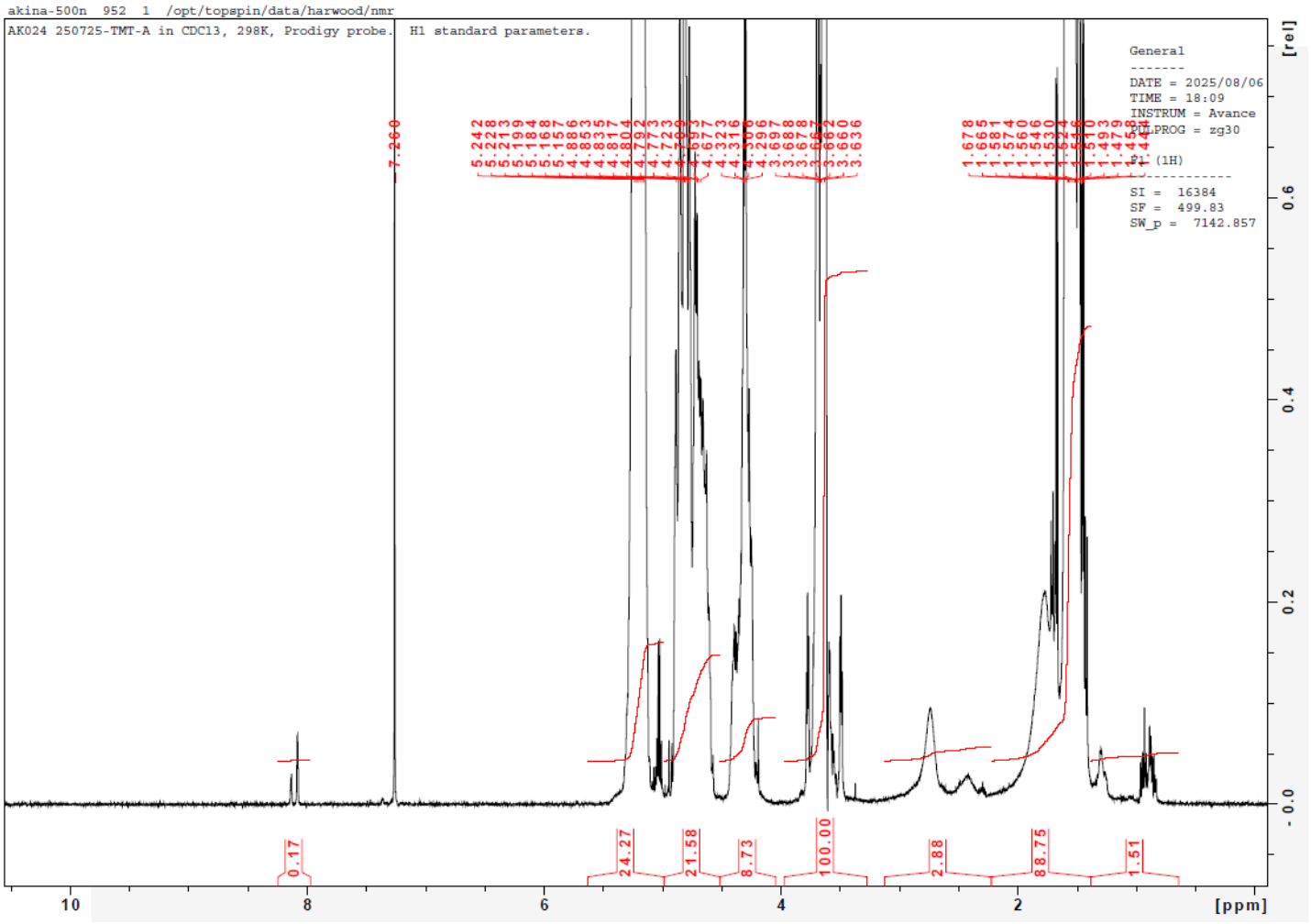
# No. AK024 Certificate of Analysis

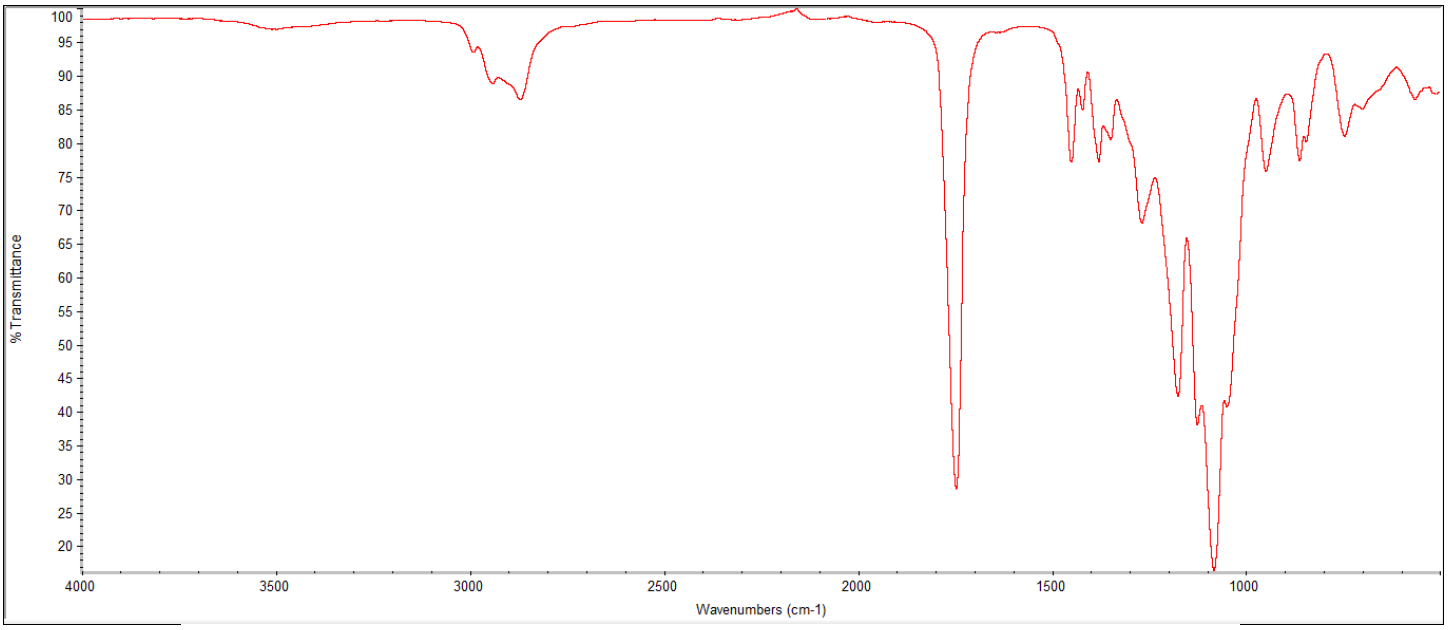
Product Name: Poly(lactide-co-glycolide)-*b*-Poly(ethylene glycol)-*b*-Poly(lactide-co-glycolide) (Mw ~ 1,100:1,000:1,100 Da, 75:25 LA:GA) (Lot#: 250725TMT-A)

## H-NMR



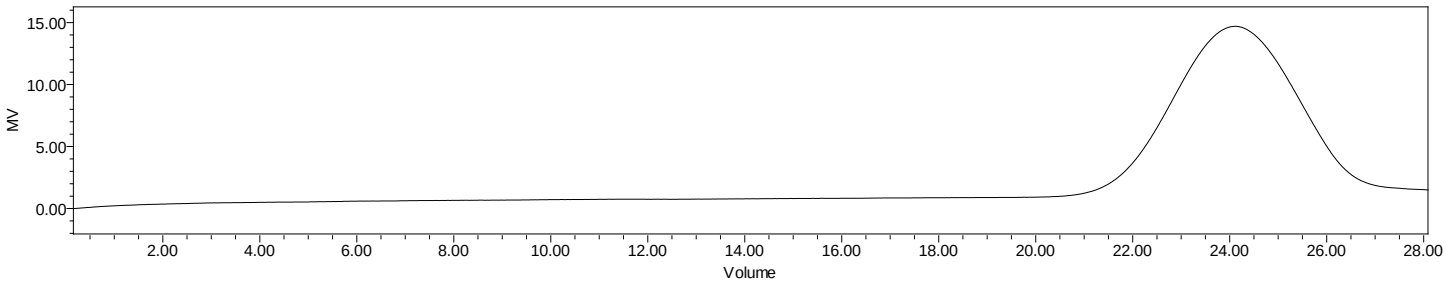

**H-NMR** Spectrum of copolymers in CDCl3 (Bruker ≥300 MHz, PINMRF) NMR of PLGA-PEG-PLGA copolymer: EG/LA-GA =23*//22-10 (Mn EG/LA:GA 1013*/1608-576 Da) LA:GA 74%:26% *- from MFG data

## FTIR




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

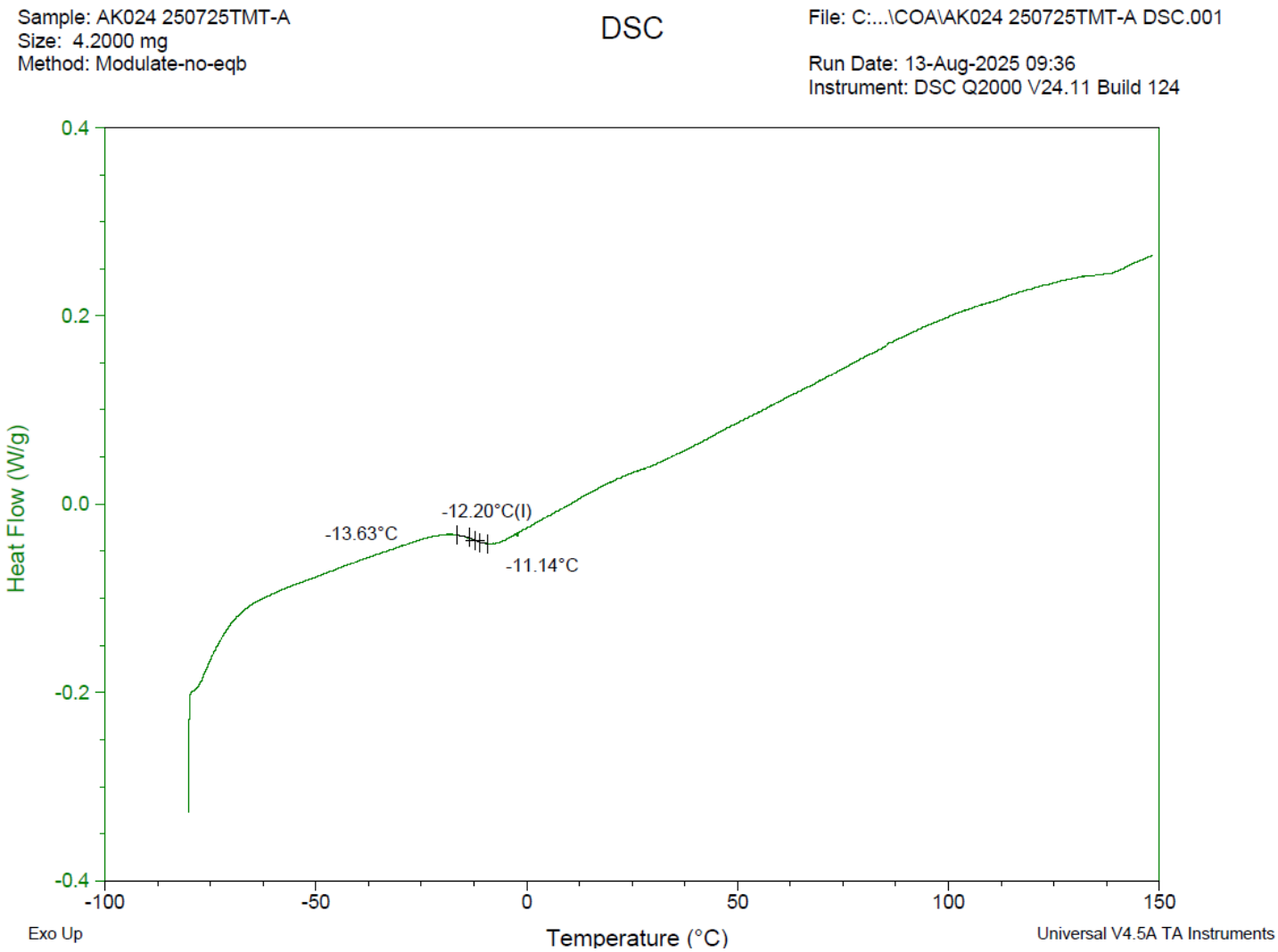
## GPC-ES




| Polymer | $M_n$ (from GPC) | $M_w$ (from GPC) | PDI |
|---|---|---|---|
| PLGA-PEG-PLGA | 3783 | 4656 | 123 |
| PEG-Precursor* | 1013* | | |

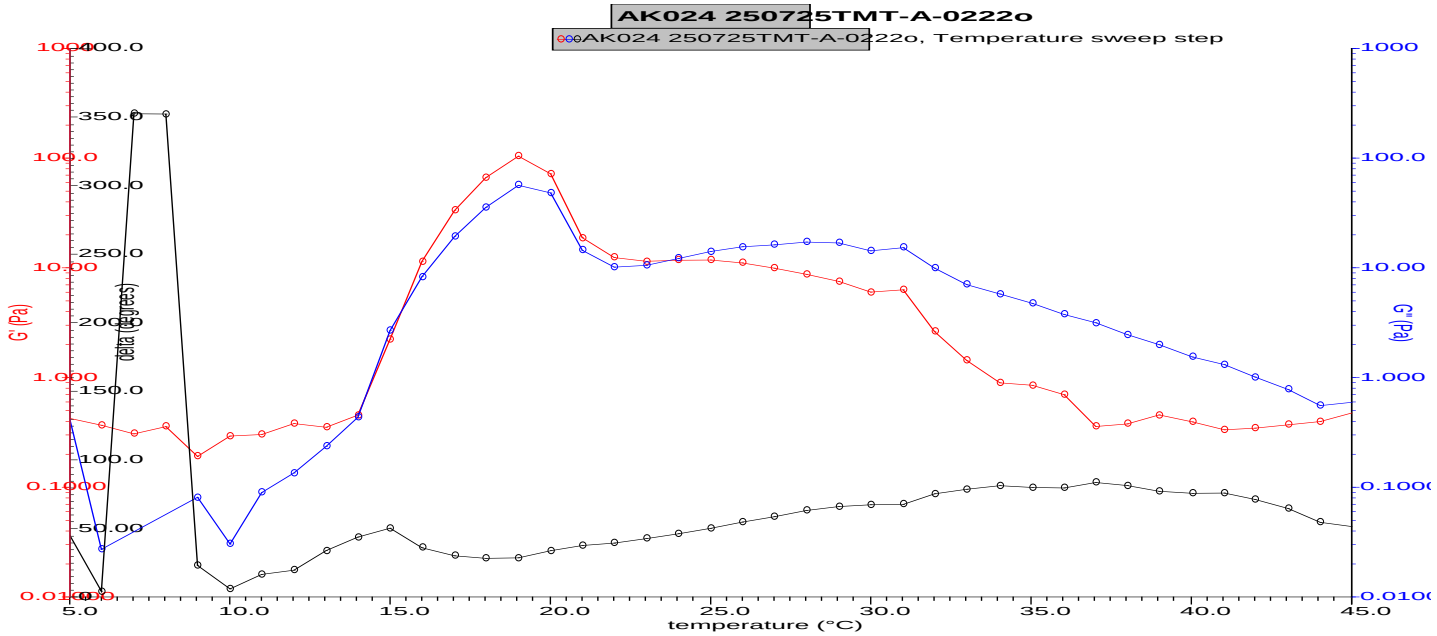
**GPC-ES** Analysis Method: Waters Breeze 2 system with 1 ml/min THF flow across three GPC columns. Detection via refractive index, calibrated against polystyrene standards. *- from MFG data

## DSC




**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 = -12.2 °C

# RHEOLOGY



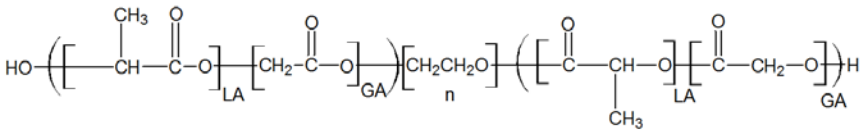

**Rheology** performed on AR2000 (TA instruments) with 60mm 2degree cone on 20% w/v polymer in water dissolved over 3 days with stirring at 4°C. Viscosity of solution at 0.1 ($sec^{-1}$) and 5°C was measured (1 minute peak hold 5 second test intervals). Rheology performed by oscillating at constant 6.283 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 | **0.02617 Pa/s** |

# IV

**Inherent Viscosity:** 0.078 ± 0.007 dL/g (calculated from kinematic viscosity at 2% w/v Acetone on Rheosense microVISC, n=3) at 25ºC.

## Structure of copolymers




Approved By:
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