

PLGA 50L-H-E Standard Data Sheet



Product Name: Poly (D,L Lactide-co-Glycolide) 50:50 LA:GA high molecular weight (ester endcap)
(Lot #240202RAI-A)

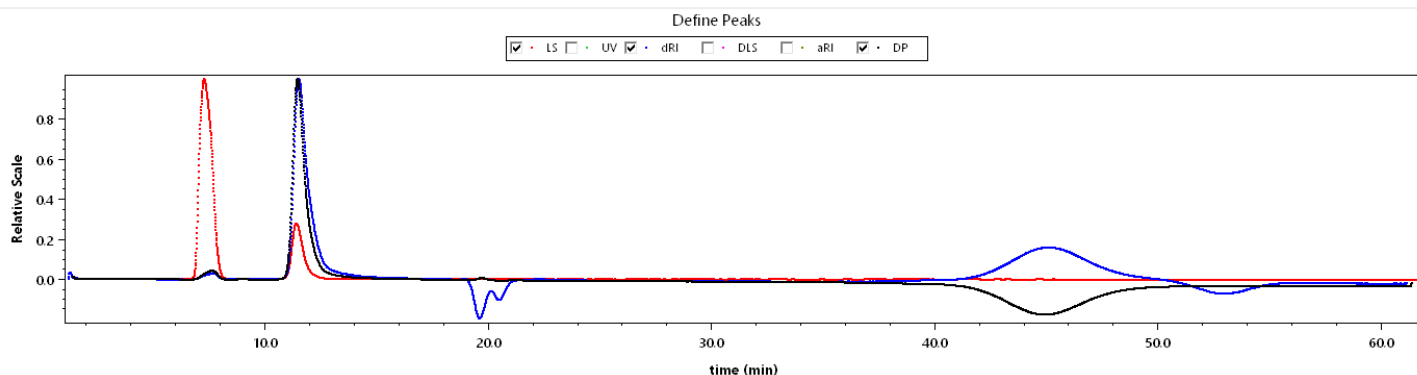
GPC-Quadruple Detector Analysis

Instrument: Agilent 1260 Infinity II system connected to Dawn Heleos II (MALS) coupled to Dynapro Nanostar DLS by optical cable, Optilab tRex (RI detector) and Viscostar III viscometer operated by Astra 7 software used for GPC analysis.

Method: 50 μ l of 2.711 mg/ml solution injected in triplicate. Mobile phase consists of Acetone at 0.6 ml/min flow across a linear gradient column (cat# TSKgel GMHhr-L, Tosoh Bioscience LLC).

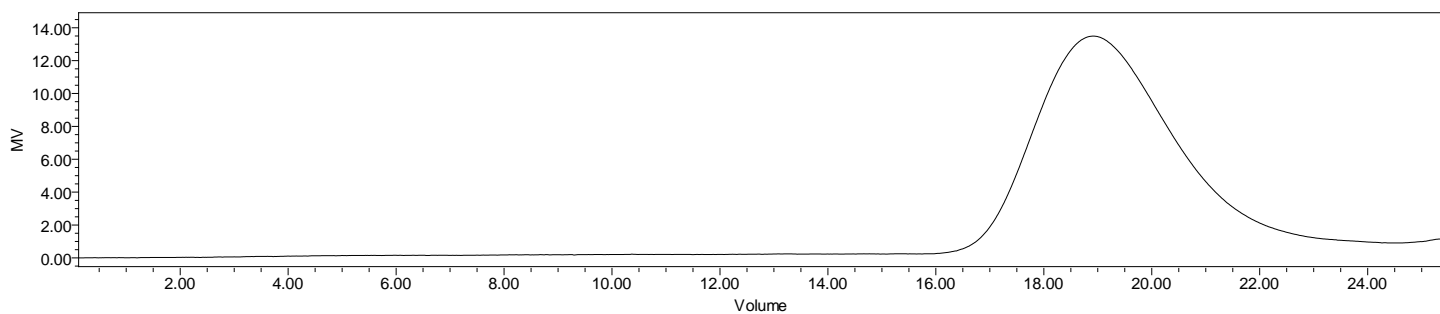
GPC-Quadruple Detector Results Table

Value	Description	Average	Uncertainty
Mn (Da)	Number average Molecular weight	34,880	0.98%
Mp (Da)	Peak molecular weight	49,310	0.59%
Mv (Da)	Viscosity average molecular weight	42,950	0.06%
Mw (Da)	Weight average molecular weight	45,730	0.74%
Mz (Da)	Z-average molecular weight	58,560	1.725
Polydispersity (Mw/Mn)	Distribution of molecular mass	1.295	2.05%
rn (nm)	Number-average mean square radius	n/a	n/a
rw (nm)	Weight-average mean square radius	n/a	n/a
r(avg) (nm)	Average mean square radius	9.8	14.0%
rh(v)n (nm)	Number-average hydrodynamic radius	5.57	72.17%
rh(v)w (nm)	Weight-avg mean hydrodynamic radius	6.34	0.39%
rh(v)z (nm)	Z-average hydrodynamic radius	7.21	0.34%
Rh(v)(avg)	Average hydrodynamic radius	6.35	0.03%
$[\eta]$ n (mL/g)	Number-average intrinsic viscosity	32.49	0.04%
$[\eta]$ w (mL/g)	Weight-average intrinsic viscosity	37.25	0.035%
$[\eta]$ z (mL/g)	Z-average intrinsic viscosity	42.47	0.002%
dn/dc	Refractive index increment	0.0977	n/a
MHS Intercept (K)	Mark-Houwink constant "K"	0.1356	0.054%
MHS slope(a)	Mark-Houwink constant alpha	0.526	0.009%



Approved By:
Amie Tyler
Quality Manager

GPC-External Standard

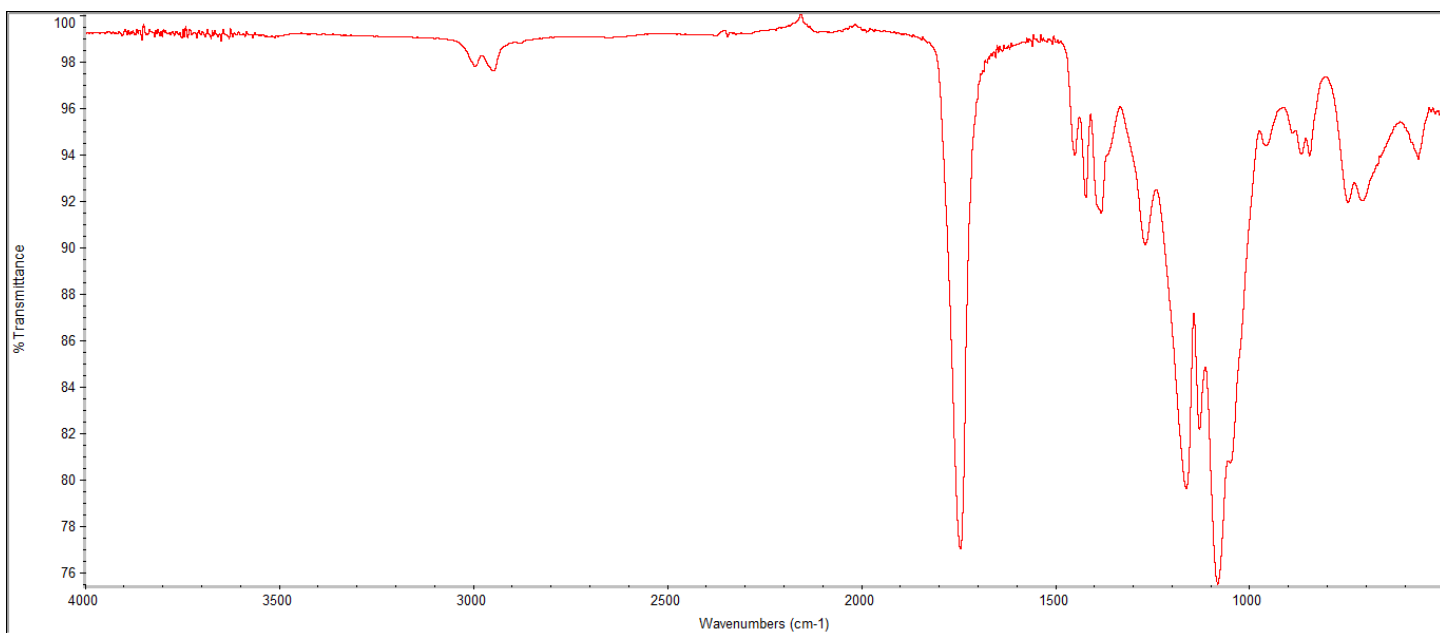


GPC-ES Analysis Method: Waters Breeze 2 system with 1 ml/min THF flow across three GPC columns. Detection via refractive index, calibrated against polystyrene standards (Agilent Polystyrene, PS2).

M_n (from GPC-ES)	M_w (from GPC-ES)	PDI
30,411	54,759	1.80

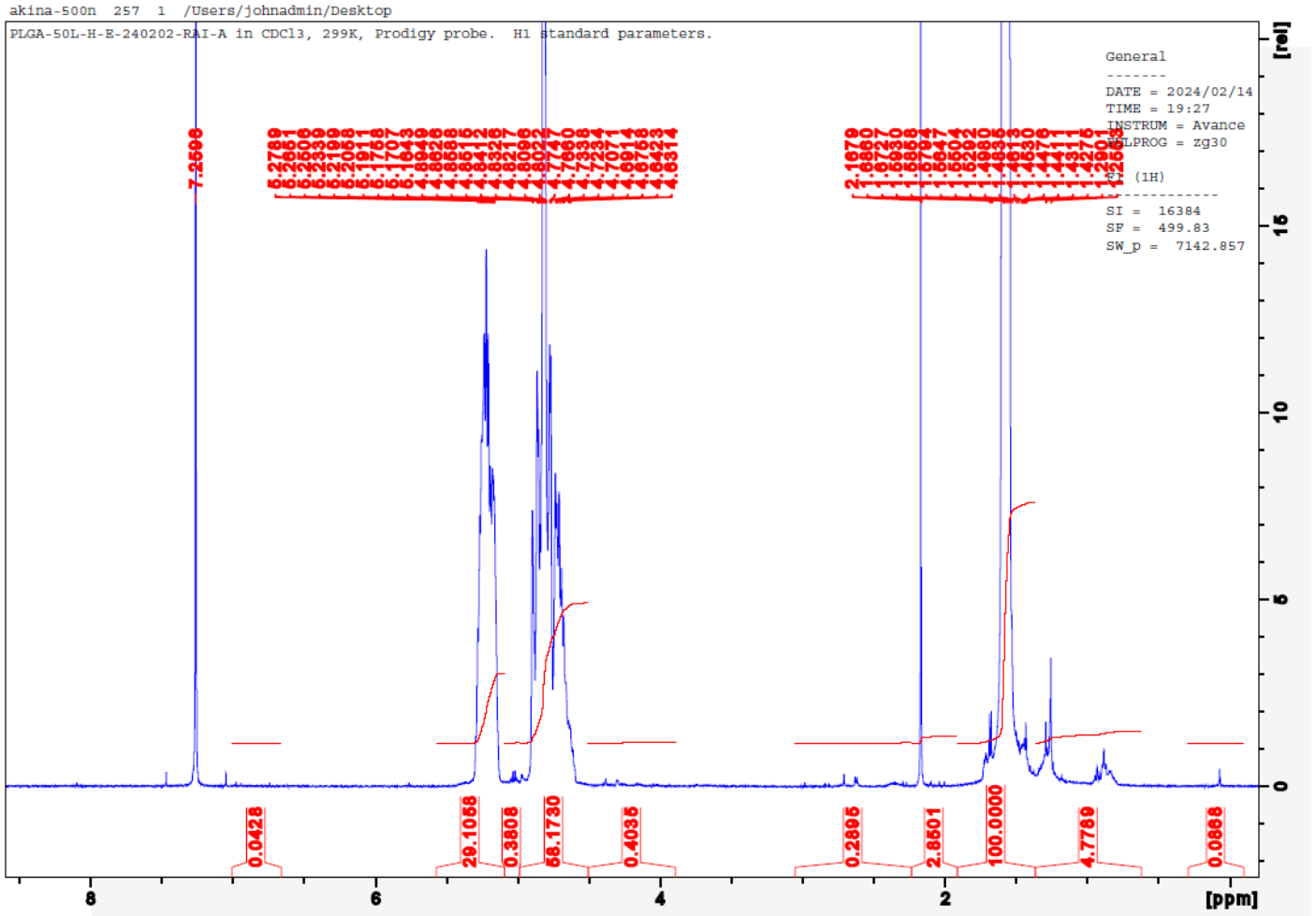
FTIR Analysis

Analysis Method: Collected from cast-film on KBr salt-plate placed in Nicolet Avatar 320 spectrometer and analyzed in transmission mode.



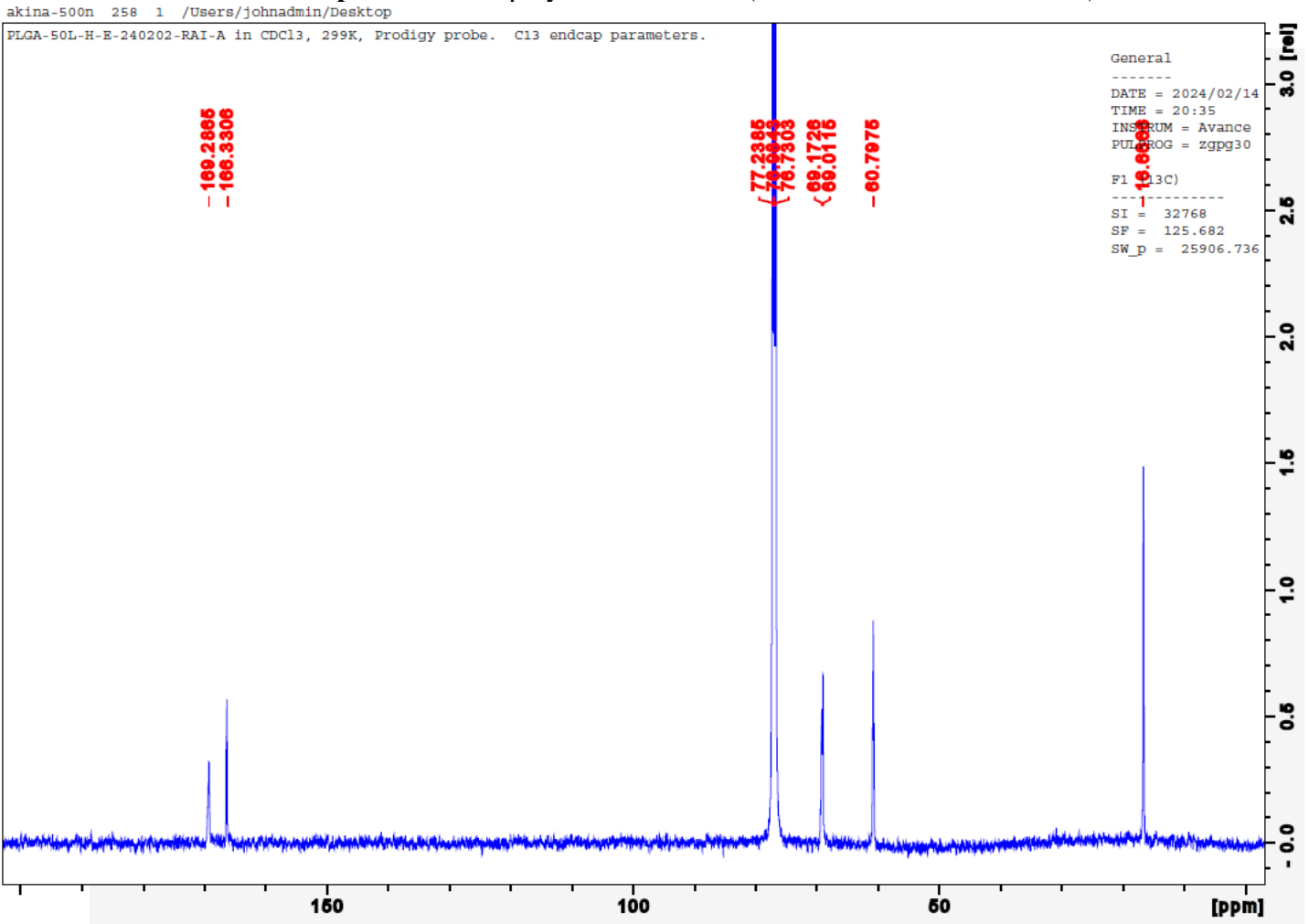
NMR Analysis

H-NMR Spectrum of copolymers in CDCl₃ (Bruker 800 MHz instrument) of PLGA copolymers



LA:GA molar ratio by HNMR: 50:50 molar (LA:GA weight ratio by HNMR 55:45 w:w)

C13NMR Spectrum of copolymers in CDCl3 (Bruker 800 MHz instrument)



C13NMR Rcms = 0.723

(Method: downfield carbonyl peak LA-GA divided by upfield carbonyl peak GA-GA in 166-167 ppm region)

