

PLGA 75L-H Standard Data Sheet

Product Name: Poly(lactide-co-glycolide) (75:25 LA:GA, high molecular weight (ester endcap) (Lot #180313RAI-B)



GPC-Quadruple Detector Analysis

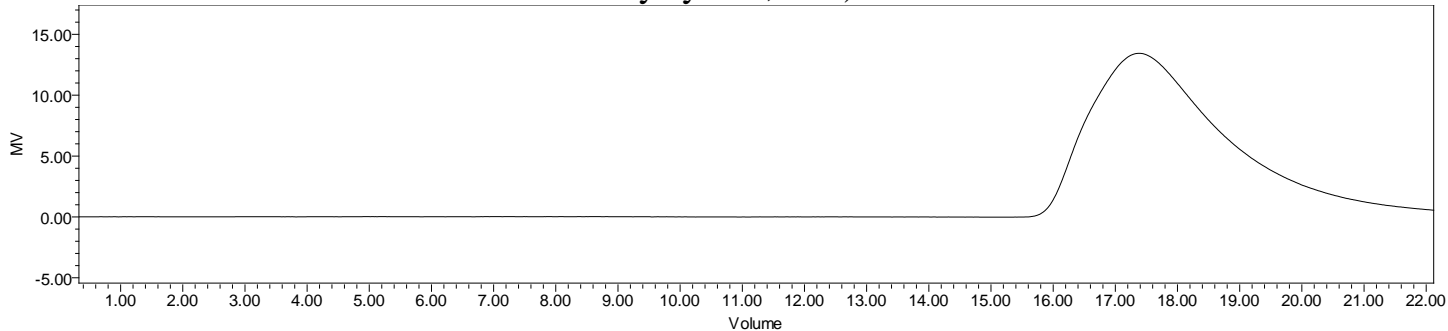
Instrument: Agilent 1260 Infinity II system connected to Dawn Heleos II (MALLS) coupled to Dynapro Nanostar DLS by optical cable, Optilab T-rEX (RI detector) and Viscostar III viscometer operated by Astra 7 software used for GPC analysis.

Method: 100 μ l of 2.0 mg/ml solution. Mobile phase consisted 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	76,170	$\pm 0.332\%$
Mp (Da)	Peak molecular weight	101,000	$\pm 0.039\%$
Mv (Da)	Viscosity average molecular weight	91,370	$\pm 0.007\%$
Mw (Da)	Weight average molecular weight	96,330	$\pm 0.091\%$
Mz (Da)	Z-average molecular weight	110,500	$\pm 0.194\%$
Polydispersity (Mw/Mn)	Distribution of molecular mass	1.265	$\pm 0.344\%$
rn (nm)	Number-average mean square radius	3.6	$\pm 102.0\%$
rw (nm)	Weight-average mean square radius	5.5	$\pm 17.3\%$
rz (nm)	Z average radius	8.2	$\pm 5.4\%$
r(avg) (nm)	Average mean square radius	8.5	$\pm 0.4\%$
rh(v)n (nm)	Number-average hydrodynamic radius	8.626	$\pm 0.070\%$
rh(v)w (nm)	Weight-avg mean hydrodynamic radius	9.844	$\pm 0.036\%$
rh(v)z (nm)	Z-average hydrodynamic radius	10.565	$\pm 0.030\%$
rh(v)(avg)	Average hydrodynamic radius	10.034	$\pm 0.002\%$
$[\eta]_n$ (mL/g)	Number-average intrinsic viscosity	57.630	$\pm 0.065\%$
$[\eta]_w$ (mL/g)	Weight-average intrinsic viscosity	65.14	$\pm 0.03\%$
$[\eta]_z$ (mL/g)	Z-average intrinsic viscosity	69.288	$\pm 0.022\%$
dn/dc	Refractive index increment	0.0950	
MHS Intercept (K)	Mark-Houwink constant "K"	8.542×10^{-1} mL/g	$\pm 0.051\%$
MHS slope(a)	Mark-Houwink constant alpha	0.380	$\pm 0.012\%$

GPC-External Standard Analysis

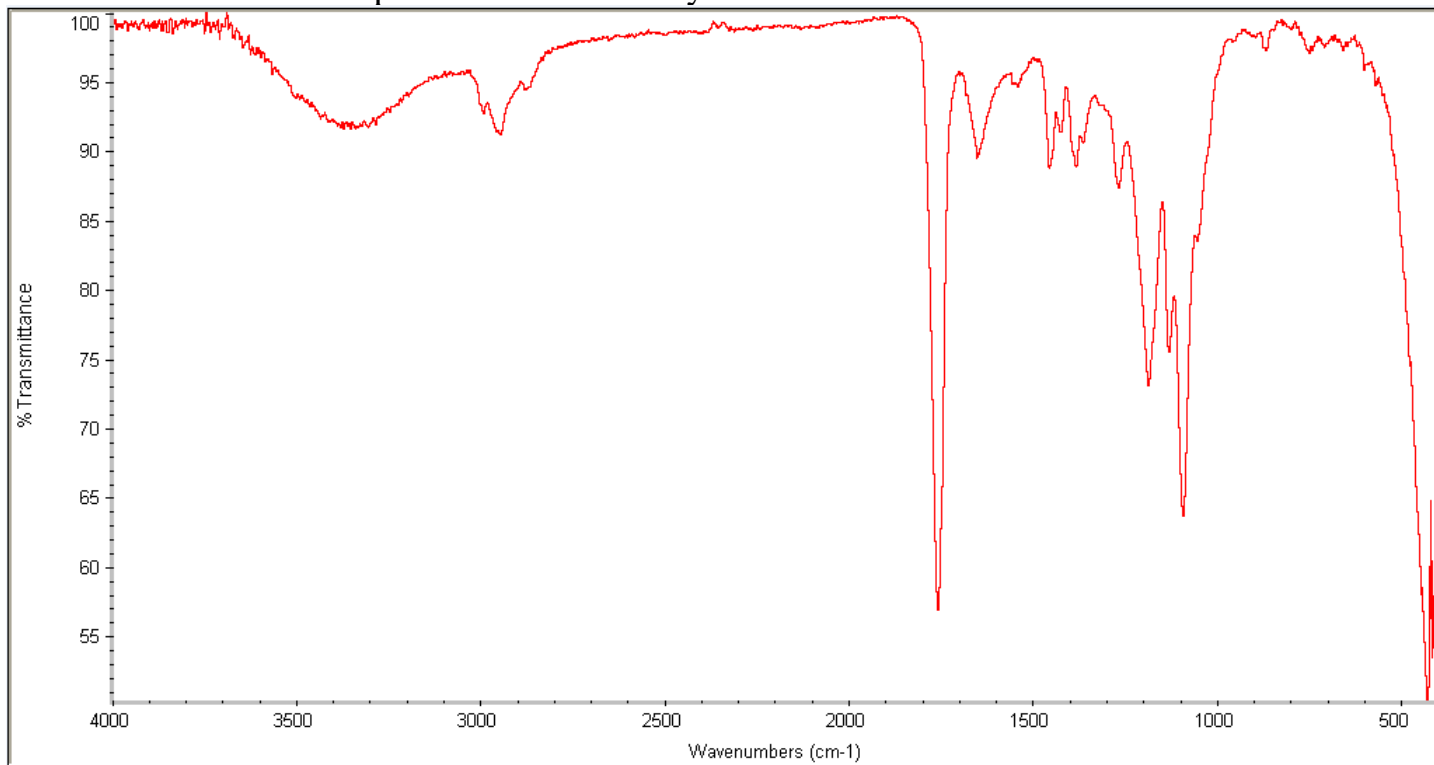
Analysis Method: Waters Breeze 2 system with 1 ml/min THF flow across three GPC columns. Detection via refractive index, calibrated against polystyrene standards (Agilent Polystyrene, PS2).



M_n (from GPC)	M_w (from GPC)	PDI
97,812	141,117	1.44

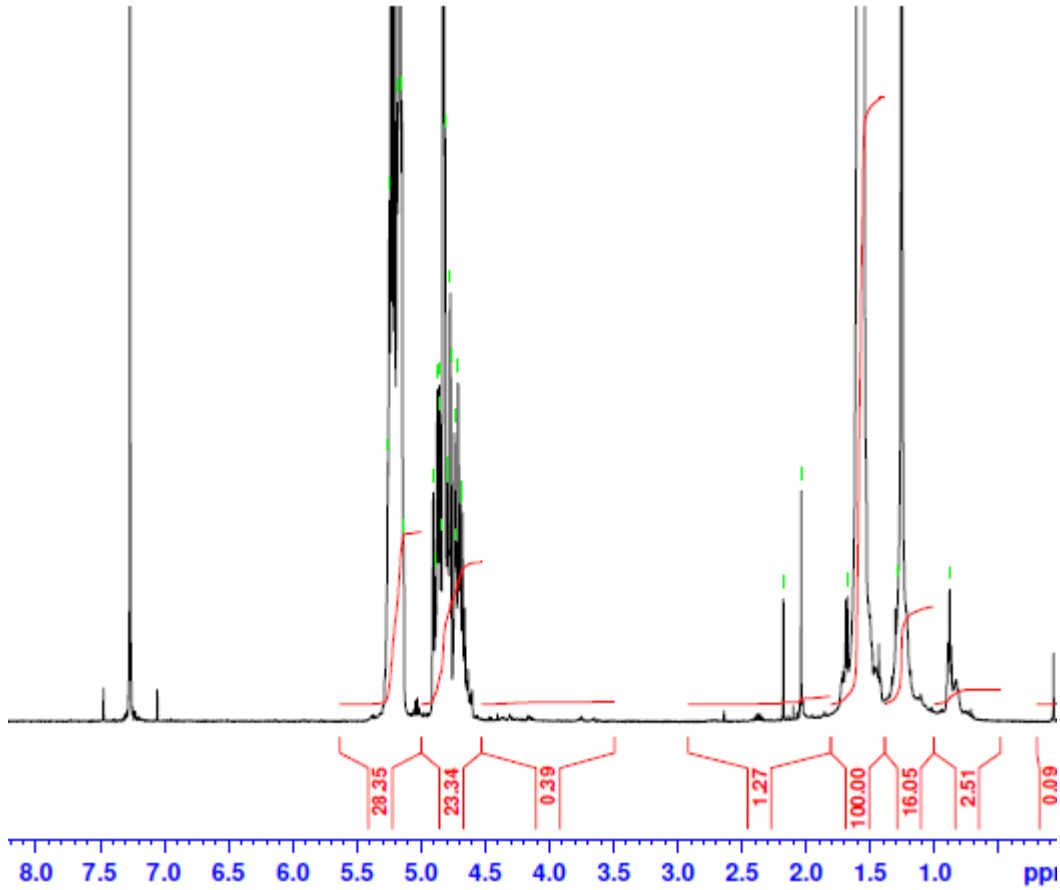
FTIR Analysis

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



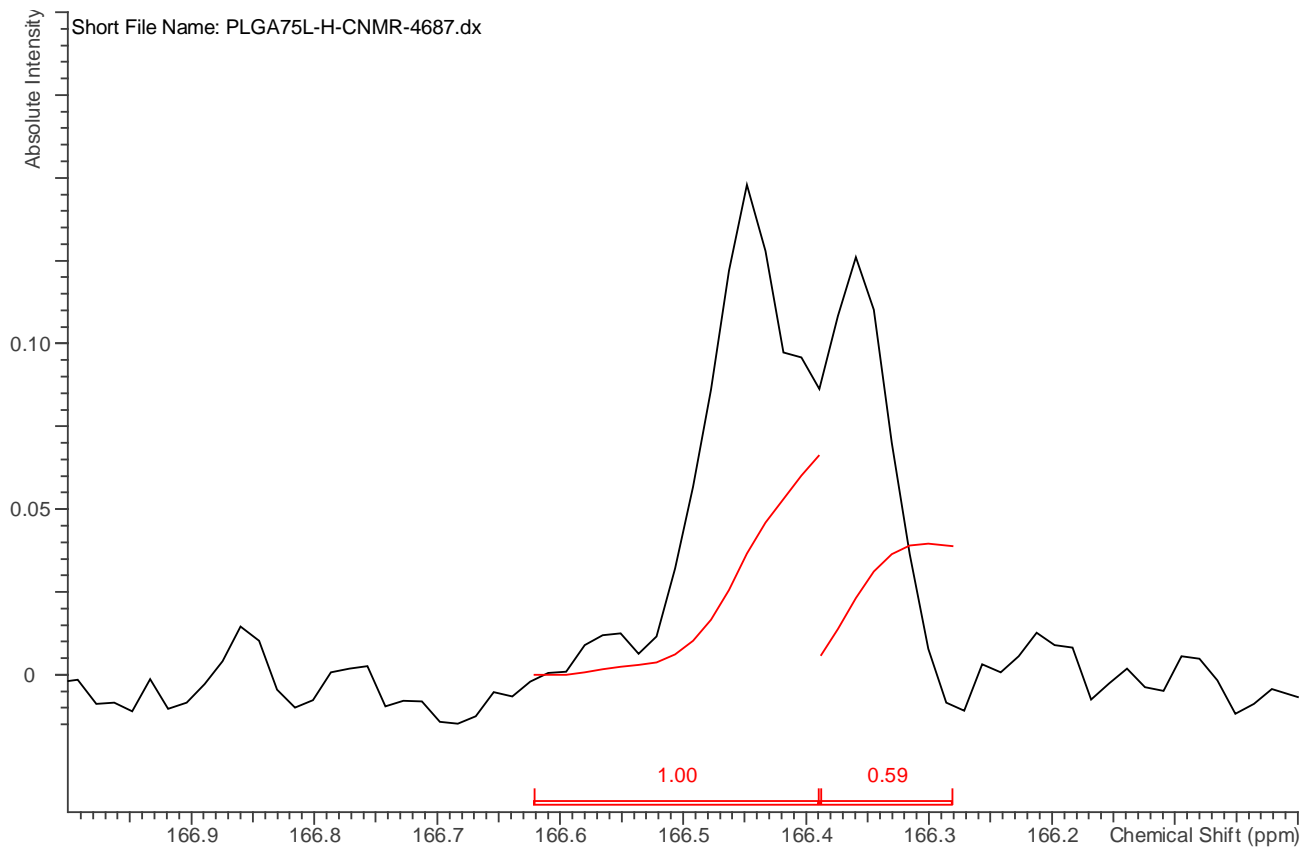
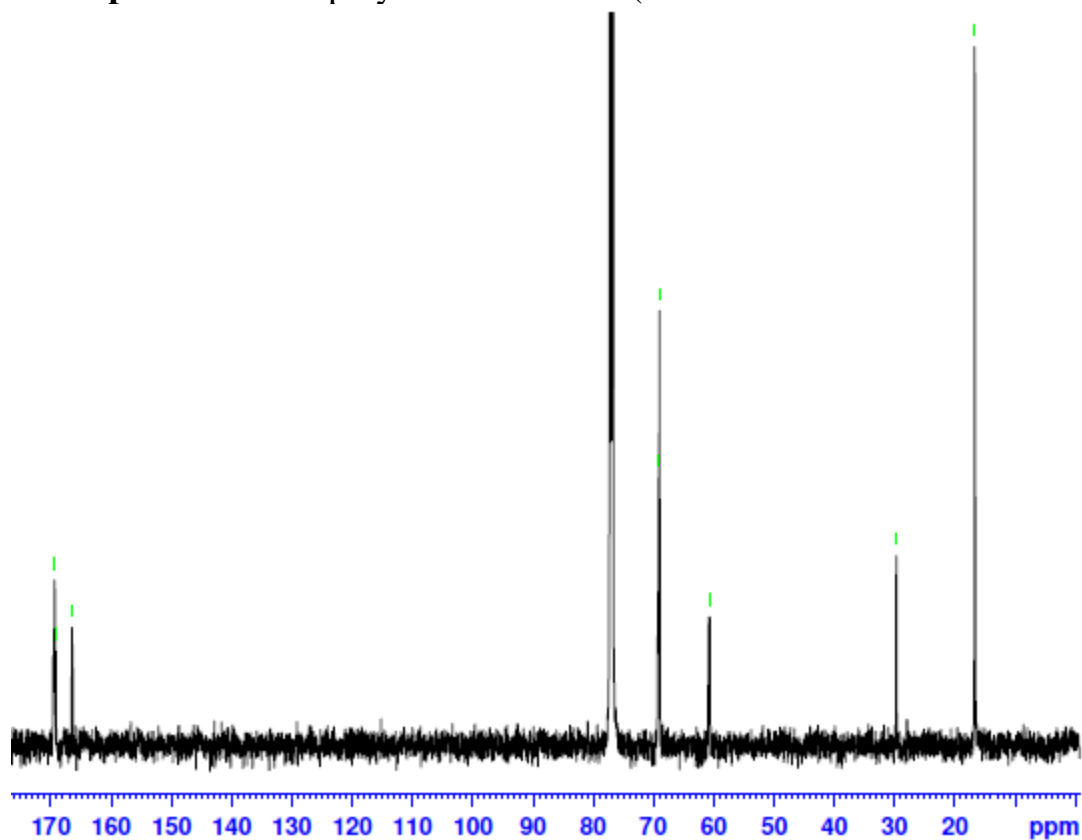
NMR Analysis

H-NMR Spectrum of copolymers in CDCl₃ (Varian Inova 500 MHz instrument) NMR of PLGA copolymer



LA:GA molar ratio by HNMR: 71:29 molar (LA:GA weight ratio by HNMR 75:25 w:w)

C13NMR Spectrum of copolymers in CDCl3 (Varian Inova 500 MHz instrument)



C13NMR Rcms = 1.69

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