

# 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 #201210RAI-A) (REV: A)



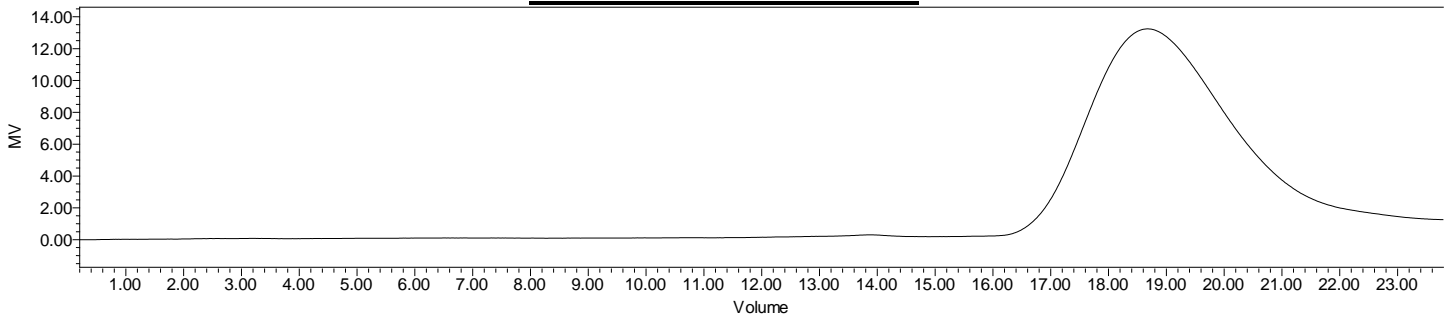
## GPC-Quadruple Detector Analysis:

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

**Method:** 100  $\mu$ 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).

<b>GPC-Quadruple Detector Results Table</b>			
<b>Value</b>	<b>Description</b>	<b>Average</b>	<b>Uncertainty</b>
Mn (Da)	Number average Molecular weight	49,038	$\pm 0.981\%$
Mp (Da)	Peak molecular weight	58,165	$\pm 0.439\%$
Mv (Da)	Viscosity average molecular weight	56,240	$\pm 0.066\%$
Mw (Da)	Weight average molecular weight	59,050	$\pm 0.696\%$
Mz (Da)	Z-average molecular weight	72,630	$\pm 1.489\%$
Polydispersity (Mw/Mn)	Distribution of molecular mass	1.204	$\pm 1.203\%$
rn (nm)	Number-average mean square radius	8.2	$\pm 50.6\%$
rw (nm)	Weight-average mean square radius	8.0	$\pm 44.5\%$
r(avg) (nm)	Average mean square radius	10.2	$\pm 2.6\%$
rh(v)n (nm)	Number-average hydrodynamic radius	6.682	$\pm 0.296\%$
rh(v)w (nm)	Weight-avg mean hydrodynamic radius	7.303	$\pm 0.247\%$
rh(v)z (nm)	Z-average hydrodynamic radius	8.1	$\pm 0.2\%$
rh(v)(avg)	Average hydrodynamic radius	7.4	$\pm 0.0\%$
$[\eta]_n$ (mL/g)	Number-average intrinsic viscosity	40.012	$\pm 0.023\%$
$[\eta]_w$ (mL/g)	Weight-average intrinsic viscosity	43.799	$\pm 0.020\%$
$[\eta]_z$ (mL/g)	Z-average intrinsic viscosity	48.617	$\pm 0.019\%$
dn/dc	Refractive index increment	0.0977	
MHS slope (a)	Mark-Houwink constant "a"	0.515	$\pm 0.023\%$
MHS Intercept (K)	Mark-Houwink constant "K"	0.156	$\pm 0.050\%$

## GPC-External Standard

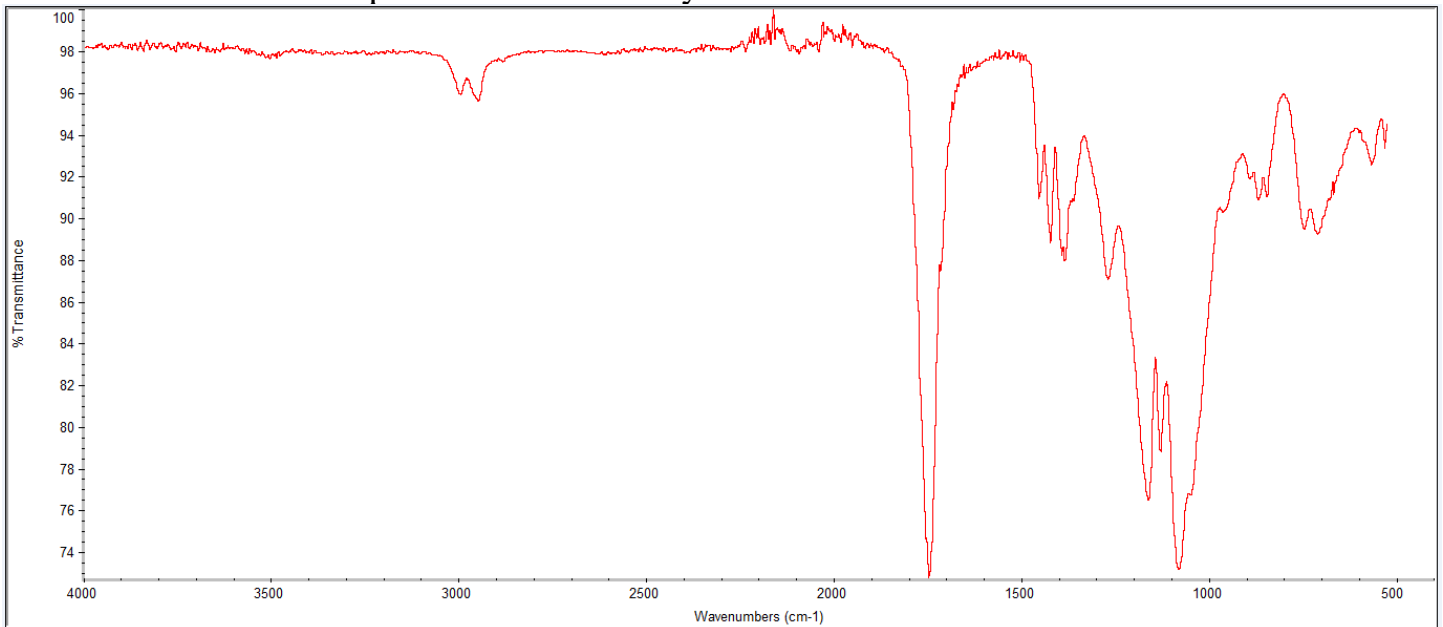


**GPC Analysis Method:** Waters Breeze 2 system with 1 ml/min THF flow across three GPC columns. Detection via refractive index, calibrated against polystyrene standards (Agilent Polystyrene, PS2).

$M_n$ (from GPC)	$M_w$ (from GPC)	PDI
41,593	66,100	1.59

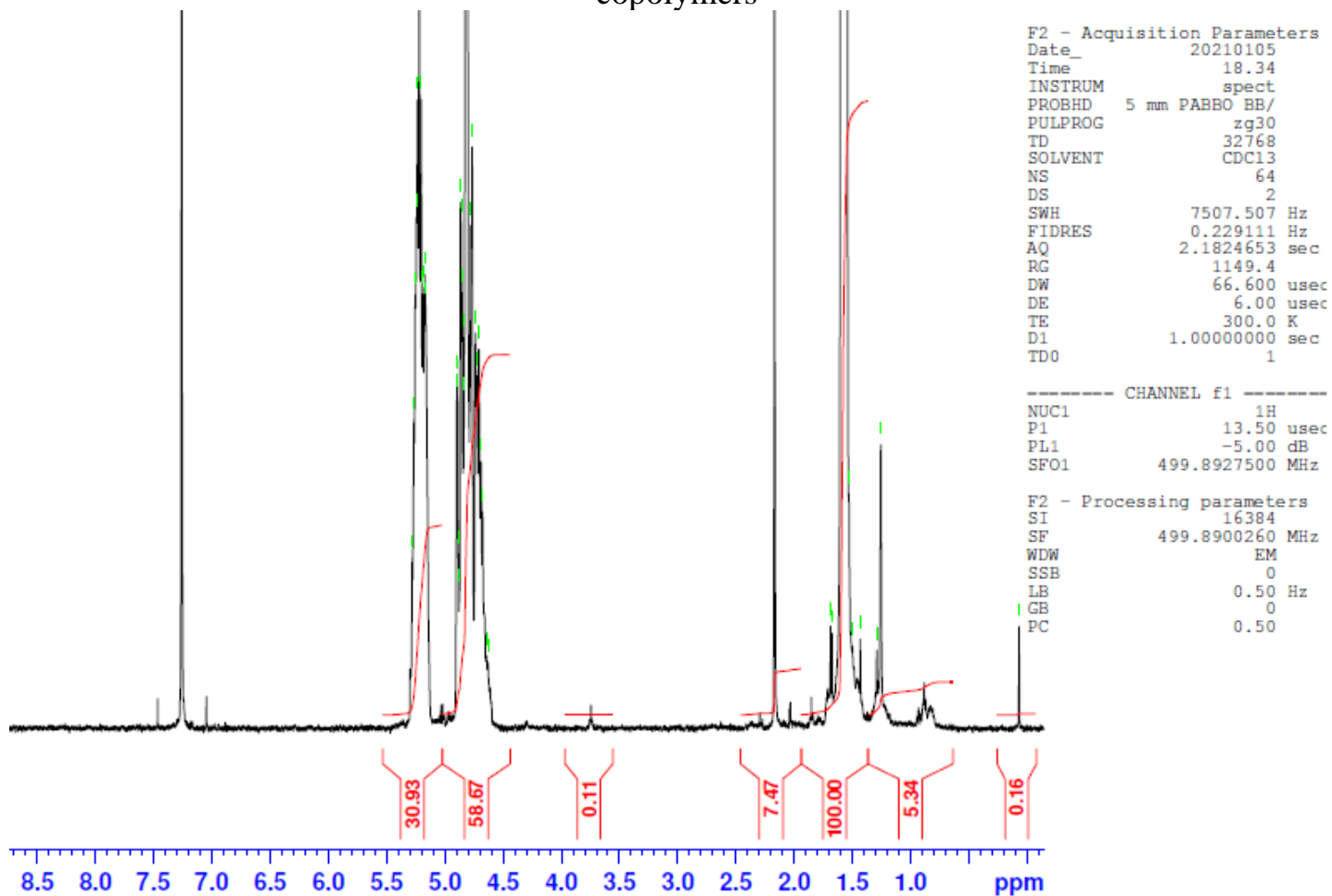
## FTIR Analysis

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



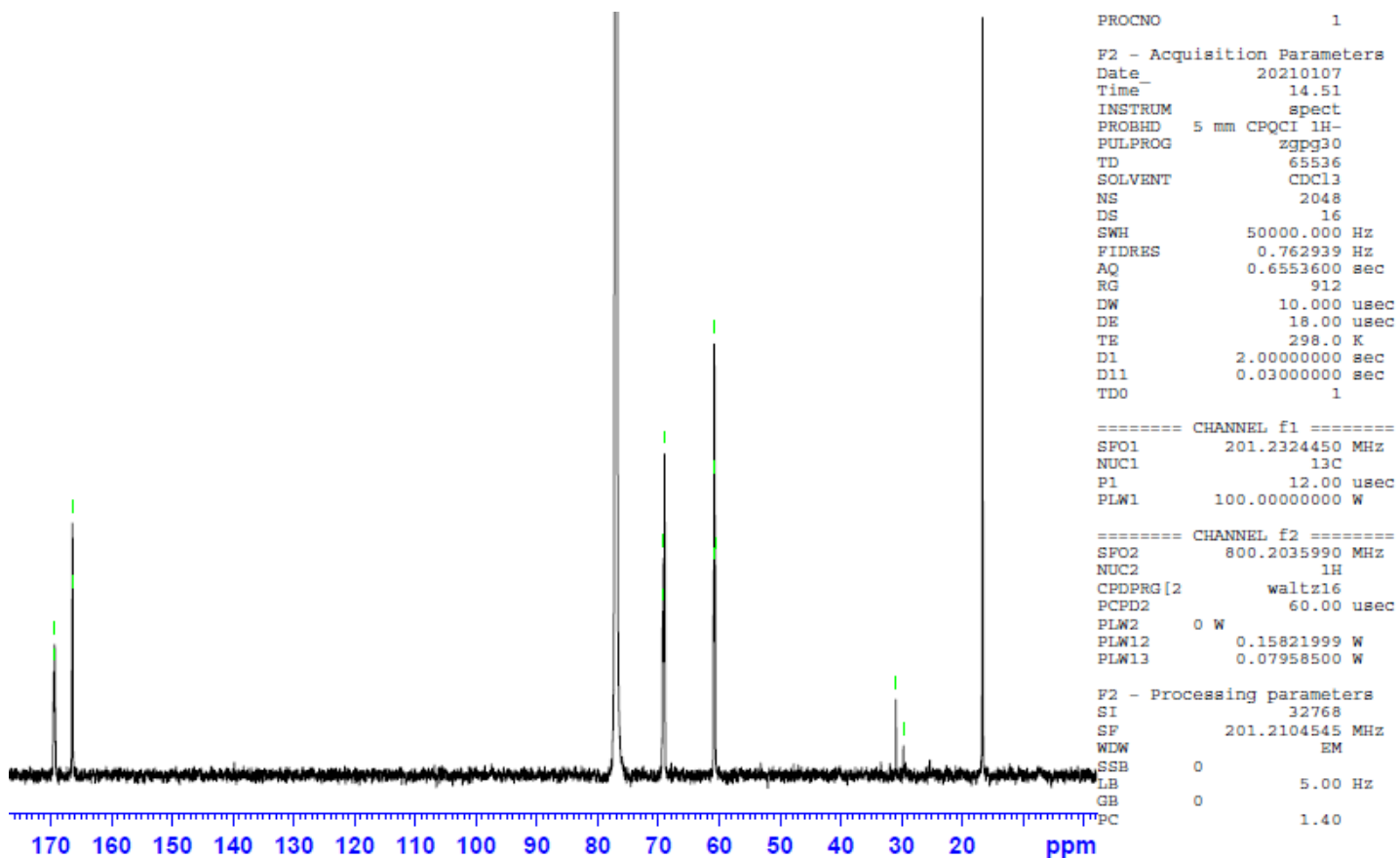
## NMR Analysis

H-NMR Spectrum of copolymers in CDCl<sub>3</sub> (Varian Inova 500 MHz instrument) of PLGA copolymers



LA:GA molar ratio by HNMR: 51:49 molar (LA:GA weight ratio by HNMR 57:43 w:w)

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



## C13NMR Rcms = 0.68

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

