



**File Properties**

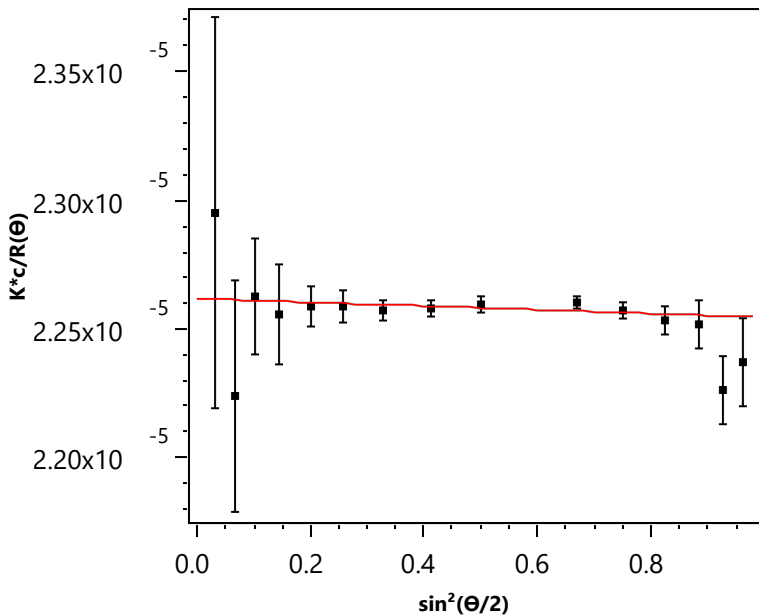
**File Name:** D:\GoogleDrive\LBNL\SIBYLS\_Group\MALS and DLS Data\Sequences\Nsp7\_Nsp8 complex[050620\_COVID\_3].afe7  
**Created:** May 6, 2020 23:04:49.737

**Sample:** Nsp7\_Nsp8 complex

**dn/dc:** 0.1850 mL/g

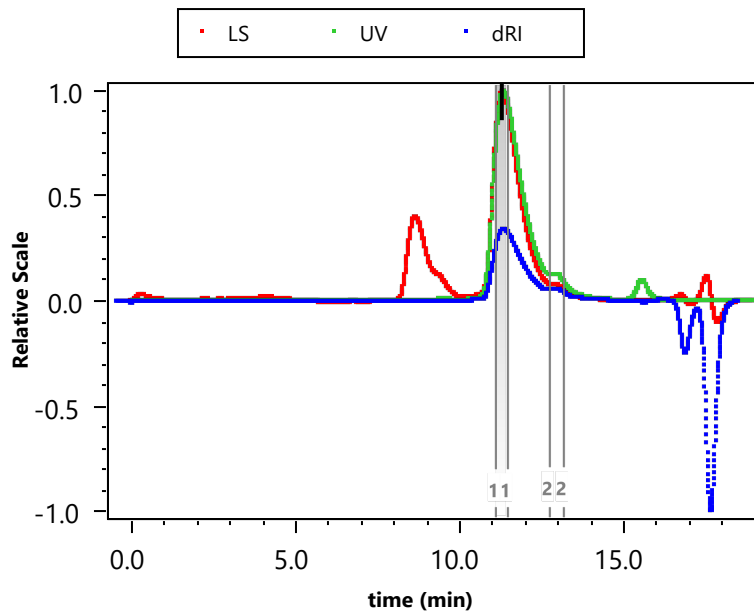
**Concentration:** 2.000 mg/mL

results graph



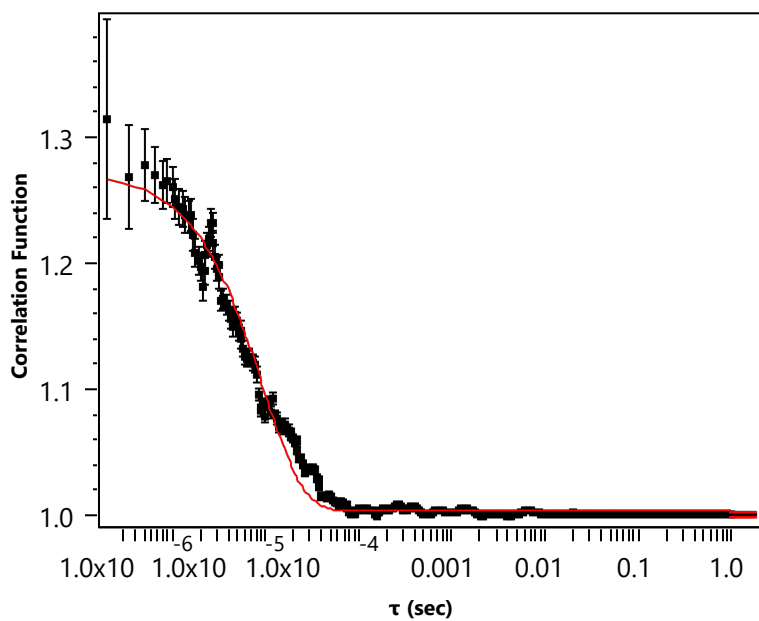
Fit  $R^2=0.0778$

control graph



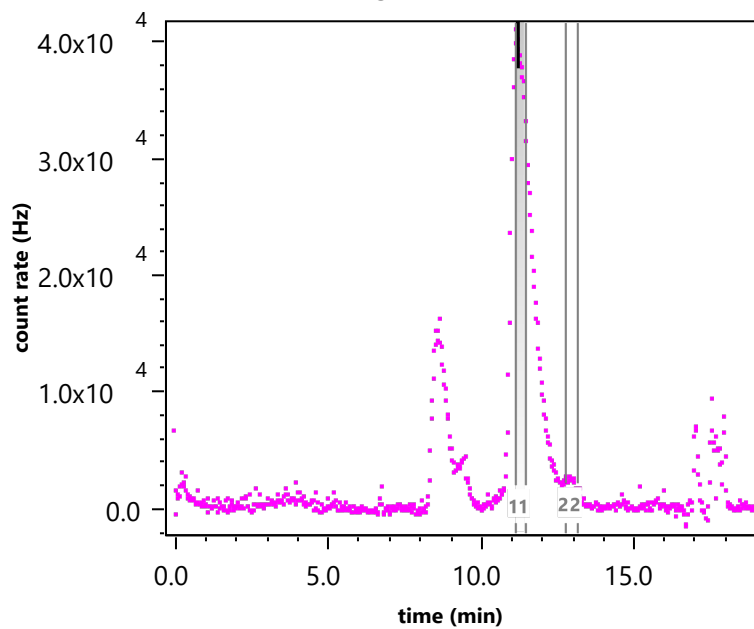
Index = 11.316 min

Correlation Function



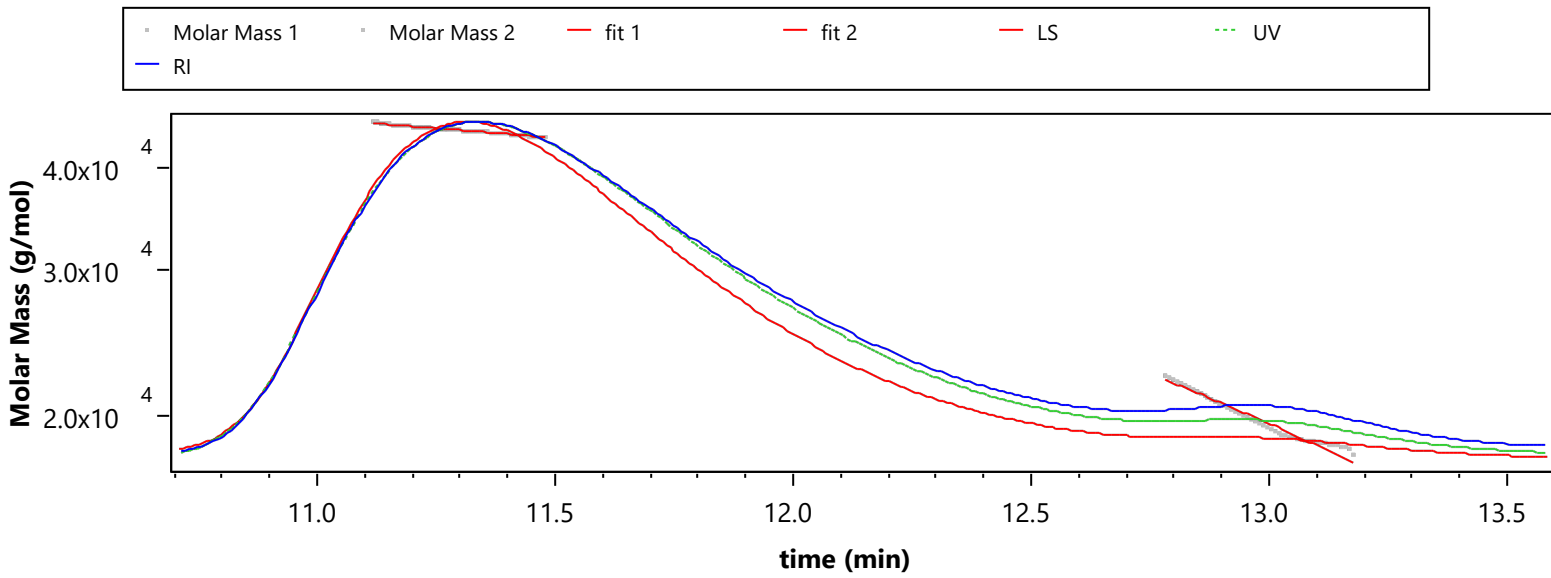
Fit  $R^2=0.9585$

control graph



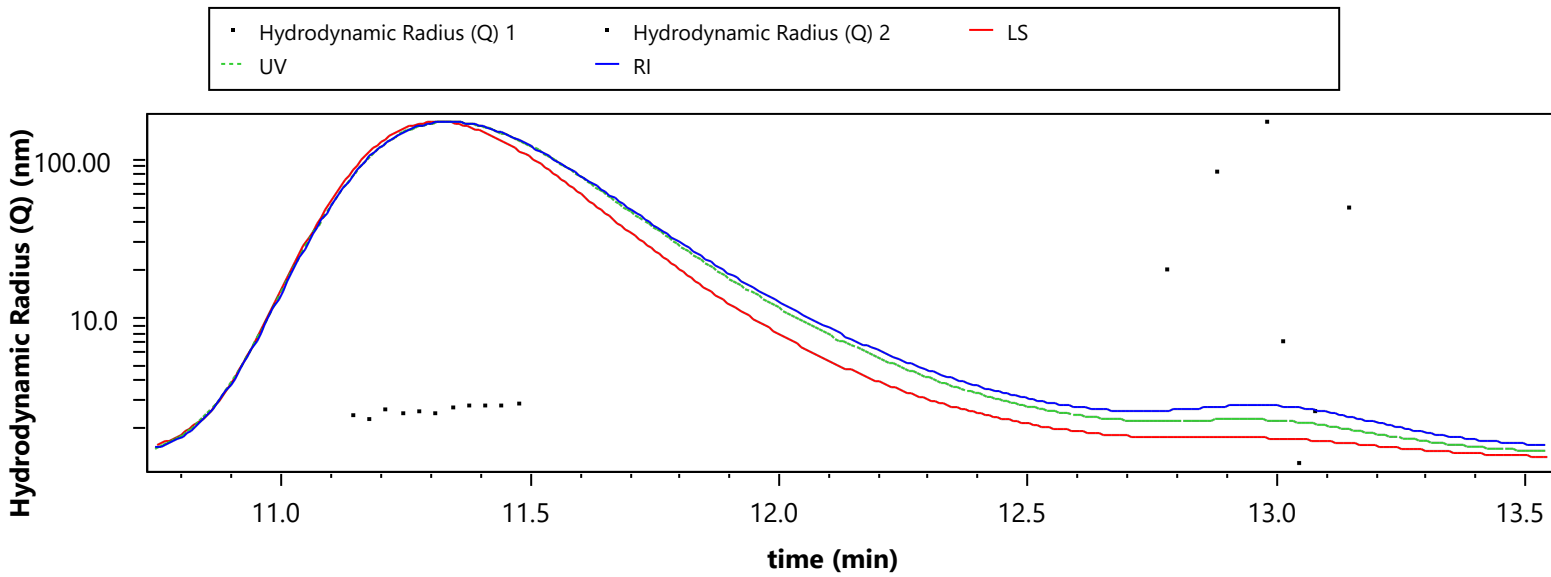
Index = 11.177 min

Results Fitting

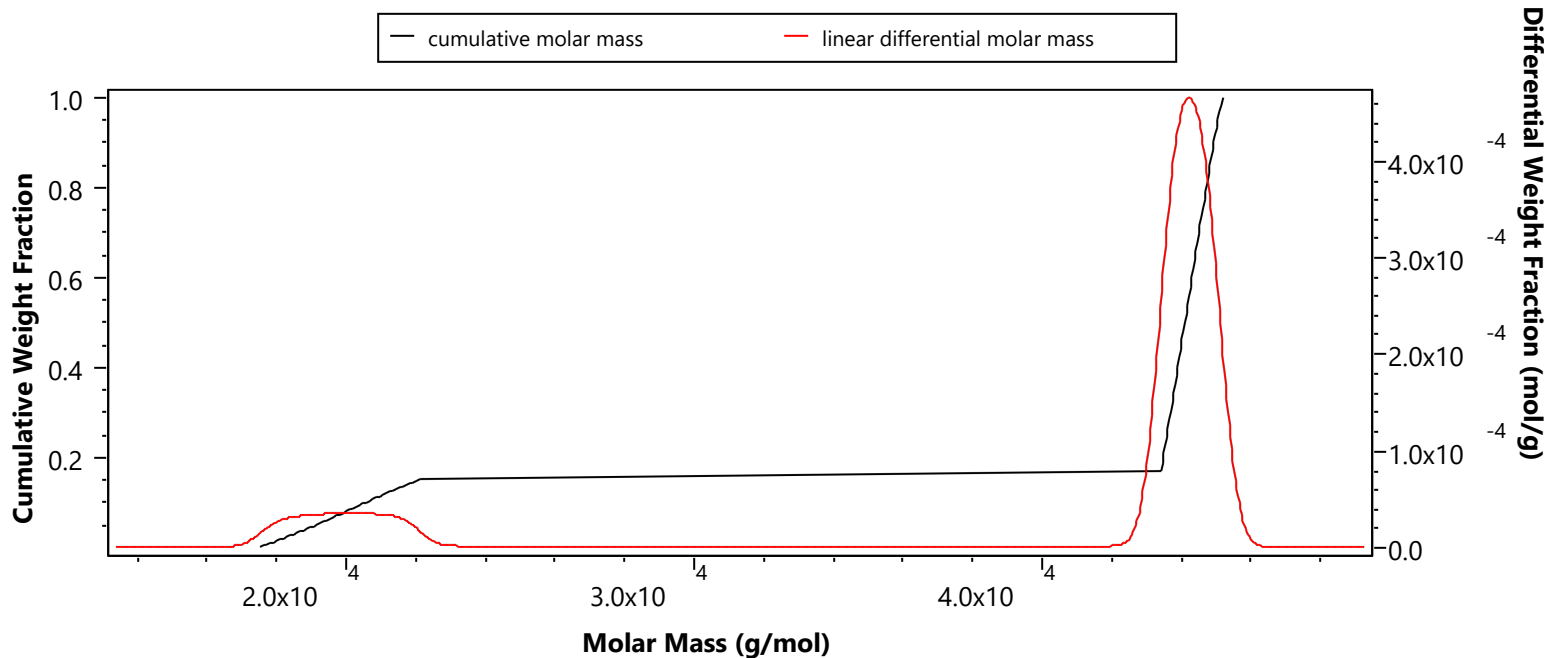


Peak 1 Fit Adjusted  $R^2=0.9882$ ; Peak 2 Fit Adjusted  $R^2=0.9695$

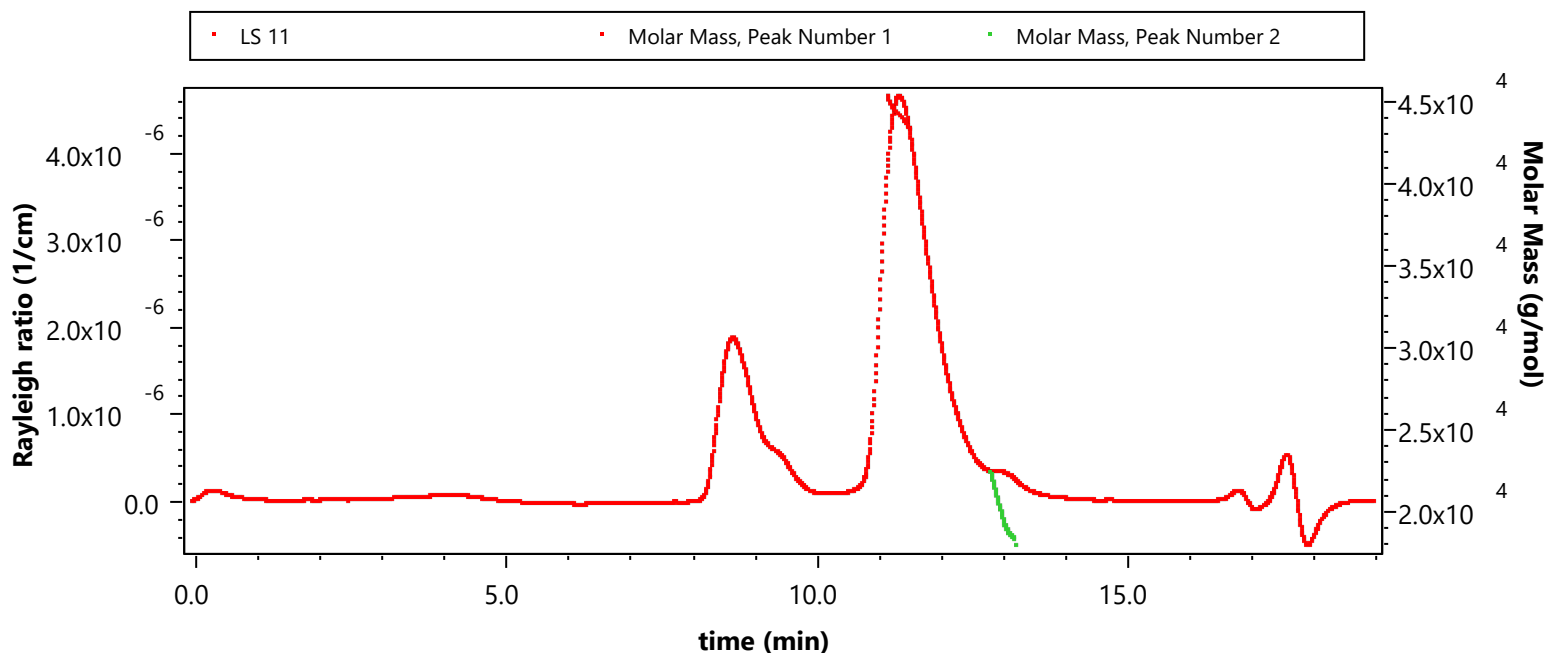
Results Fitting



### Distribution Analysis



### masses vs volume



#### Configuration

Abcissa Units: min

Concentration Source: RI

Flow Rate: 0.500 mL/min

Pulse Correction Enabled: yes

Light Scattering Instrument: DAWN HELEOS

Cell Type: Fused Silica

Wavelength: 660.0 nm

Calibration Constant: 3.3316x10<sup>-5</sup> 1/(V cm)

RI Instrument: Optilab T-rEX

Wavelength: 658.0 nm

UV Instrument: Generic UV

Solvent: PBS, Aqueous

Refractive Index: 1.331

**Fluid Connections**

Source Instrument	Destination Instrument	Delay Volume (mL)
Generic Pump	Injector	0.000
Injector	Generic UV Instrument	0.000
Generic UV Instrument	DAWN HELEOS	0.026
DAWN HELEOS	Optilab rEX	0.222

**Aux Connections**

Source Instrument	Destination Instrument	Source Aux Channel	Destination Aux Channel	Calibration Constant
Generic UV Instrument	DAWN HELEOS		2	1.000
Generic UV Instrument	DAWN HELEOS	2	3	1.000

**Autoinject Connections**

Source Instrument	Destination Instrument
autoinject	DAWN HELEOS

**Processing**

**Collection Operator:** MICHAELFARADAY\Michael Faraday (MICHAELFARADAY\Michael Faraday (Michael Faraday))

**Collection Time:** Wednesday, May 06, 2020 20:55:57 PM

**Collection Version:** 7.1.4.8

**Processing Operator:** ALAN-TURING\Alan Turing (Alan Turing)

**Processing Time:** Thursday, May 07, 2020 10:58:12 AM

**Despiking Level:** Heavy

**Peak settings:**

Peak Name	Peak 1	Peak 2
Peak Limits (min)	11.115 - 11.487	12.778 - 13.178
Light Scattering Model	Zimm	Zimm
Fit Degree	1	1
dn/dc (mL/g)	0.1750	0.1750
dn/dc Ref. Temp. (°C)	25.000	25.000
Modifier dn/dc (mL/g)	0.0000	0.0000
Modifier dn/dc Ref. Temp. (°C)	25.000	25.000
A2 (mol mL/g <sup>2</sup> )	0.000	0.000
UV Ext. Coef. (mL/(mg cm))	0.667	0.667
UV Ext. Coef. Ref. Temp. (°C)	25.000	25.000
Modifier UV Ext. Coef. (mL/(mg cm))	0.000	0.000
Modifier UV Ext. Coef. Ref. Temp. (°C)	25.000	25.000
Real Refractive Index	0	0
Imaginary Refractive Index	0	0
Shell Thickness (nm)	0.000	0.000
Shell Real Refractive Index	0	0
Shell Imaginary Refractive Index	0	0
Rod radius (nm)	0.000	0.000
Molecular Standard	n/a	n/a
Concentration (mg/mL)	2.000	2.000
Concentration Ref. Temp. (°C)	25.000	25.000
Mn (g/mol)	0.000	0.000
Mw (g/mol)	0.000	0.000
Mp (g/mol)	0.000	0.000
Intrinsic Viscosity (mL/g)	0.000	0.000
Intrinsic Viscosity Ref. Temp. (°C)	25.000	25.000
Mark-Houwink-Sakurada K (mL/g)	0.000	0.000
Mark-Houwink-Sakurada a	0	0
Flory-Fox Equation Phi Parameter	0	0
Ptitsyn-Eizner Equation Epsilon Parameter	0	0
Viscometry Model	Huggins	Huggins
Huggins Equation Parameter	0	0
Kraemers Equation Parameter	0	0
radius (nm)	3.480	3.480
Radius Type	rms	rms

**Molar Mass & Radius from LS:**

**Peak Name:** Peak 1  
**Molar Mass:** (4.422 ± 0.010) e+4 g/mol  
**rms radius:** 0.0 ± 0.0 nm  
**Light Scattering Model:** Zimm  
**Fit Degree:** 1  
**Concentration:** (5.573 ± 0.015) e-1 mg/mL  
**dn/dc:** 0.176 mL/g  
**Slice Index:** 1389  
**Abscissa Position:** 11.316 min

Fit R<sup>2</sup>: 0.0778

Enabled Detectors: 3 4 5 6 7 8 9 10 11 13 14 15 16 17 18

## rh from QELS:

Use Disabled Slices: no

Prefilter Correlation Function before Averaging: yes

Minimum Delay for Fit: 2.000×10<sup>-7</sup> sec

Maximum Delay for Fit: 1.0 sec

Minimum Radius Threshold: 1.00 nm

Maximum Radius Threshold: 300.00 nm

Suppress Distribution Peaks Below: 0.50 nm

Suppress Distribution Peaks Above: 10000.000 nm

## Results Fitting Procedure:

Data	Fit Model	Degree	R <sup>2</sup>	Extrapolation
Molar Mass	Polynomial	1	0.988201	none

## Results

## Peak Results

	Peak 1	Peak 2
<b>Hydrodynamic radius (Q) moments (nm)</b>		
rh(Q)n	2.607 (±4.187%)	48.563 (±34.459%)
Std Dev rh(Q)n	0.182	59.165
rh(Q)w	2.606 (±4.187%)	49.248 (±34.192%)
Std Dev rh(Q)w	0.182	59.277
rh(Q)z	2.604 (±4.187%)	49.870 (±33.977%)
Std Dev rh(Q)z	0.182	59.280
rh(Q)(avg)	2.553 (±1.245%)	1.387 (±16.833%)
<b>General (mL/(mg cm))</b>		
UV Ext. Coef. (mL/(mg cm))	0.745	0.568
<b>Masses</b>		
Injected Mass (µg)	100.00	100.00
Calculated Mass (µg)	100.24	17.44
Mass Recovery (%)	100.2	17.4
Mass Fraction (%)	85.2	14.8
<b>Concentration (mg/mL)</b>		
Average concentration	0.532 (±0.000%)	0.088 (±0.000%)
<b>Molar mass moments (g/mol)</b>		
Mn	4.425×10 <sup>4</sup> (±0.055%)	1.977×10 <sup>4</sup> (±0.651%)
Mp	4.412×10 <sup>4</sup> (±0.037%)	2.009×10 <sup>4</sup> (±0.445%)
Mv	n/a	n/a
Mw	4.426×10 <sup>4</sup> (±0.055%)	1.986×10 <sup>4</sup> (±0.638%)
Mz	4.426×10 <sup>4</sup> (±0.122%)	1.995×10 <sup>4</sup> (±1.417%)
Mz+1	4.427×10 <sup>4</sup> (±0.197%)	2.003×10 <sup>4</sup> (±2.259%)
M(avg)	4.422×10 <sup>4</sup> (±0.007%)	1.993×10 <sup>4</sup> (±0.085%)
<b>Polydispersity</b>		
Mw/Mn	1.000 (±0.077%)	1.004 (±0.912%)
Mz/Mn	1.000 (±0.134%)	1.009 (±1.559%)
<b>rms radius moments (nm)</b>		
rn	3.7 (±70.1%)	9.7 (±136.9%)
Std Dev rn	6.534	17.092
rw	3.6 (±71.8%)	10.7 (±112.7%)
Std Dev rw	6.526	17.048
rz	3.6 (±73.5%)	11.5 (±95.7%)
Std Dev rz	6.519	16.979
r(avg)	6.5 (±4.4%)	18.3 (±6.4%)
<b>Light scattering peak statistics</b>		
Peak Area (1/cm min)	1.604×10 <sup>-6</sup>	6.041×10 <sup>-7</sup>
Peak Height (1/cm)	4.653×10 <sup>-6</sup>	3.295×10 <sup>-7</sup>
Retention Time (min)	11.322	12.924
Peak Width at Half-Height (min)	0.000	0.000
Peak Width at Quarter-Height (min)	0.000	0.000
Peak Width at Tenth-Height (min)	0.000	0.000
Peak Width at User-Specified-Height (4.4%, min)	0.000	0.000
Asymmetry Factor	0.000	0.000
Tailing Factor	0.000	0.000
Column Plate Count	0.000	0.000
Mean (min)	11.302	12.966
Standard Deviation (min)	0.104	0.113
Skew	-2.063	30.259
Peak Area (%)	72.640	27.360

	Peak 1	Peak 2
<b>Refractive index peak statistics</b>		
Peak Area (RIU min)	3.508×10 <sup>-5</sup>	6.102×10 <sup>-6</sup>
Peak Height (RIU)	9.786×10 <sup>-5</sup>	1.653×10 <sup>-5</sup>
Retention Time (min)	11.333	12.956
Peak Width at Half-Height (min)	0.000	0.000
Peak Width at Quarter-Height (min)	0.000	0.000
Peak Width at Tenth-Height (min)	0.000	0.000
Peak Width at User-Specified-Height (4.4%, min)	0.000	0.000
Asymmetry Factor	0.000	0.000
Tailing Factor	0.000	0.000
Column Plate Count	0.000	0.000
Mean (min)	11.305	12.972
Standard Deviation (min)	0.107	0.111
Skew	-0.666	1.599
Peak Area (%)	85.184	14.816
<b>UV peak statistics</b>		
Peak Area (channel 1) (AU min)	1.494×10 <sup>-1</sup>	1.982×10 <sup>-2</sup>
Peak Area (channel 2) (AU min)	0.000	0.000
Peak Height (channel 1) (AU)	4.255×10 <sup>-1</sup>	5.407×10 <sup>-2</sup>
Peak Height (channel 2) (AU)	0.000	0.000
Retention Time (channel 1) (min)	11.337	12.931
Retention Time (channel 2) (min)	11.121	12.836
Peak Width at Half-Height (channel 1) (min)	0.000	0.000
Peak Width at Half-Height (channel 2) (min)	0.000	0.000
Peak Width at Quarter-Height (channel 1) (min)	0.000	0.000
Peak Width at Quarter-Height (channel 2) (min)	0.000	0.000
Peak Width at Tenth-Height (channel 1) (min)	0.000	0.000
Peak Width at Tenth-Height (channel 2) (min)	0.000	0.000
Peak Width at User-Specified-Height (channel 1) (4.4%, min)	0.000	0.000
Peak Width at User-Specified-Height (channel 2) (4.4%, min)	0.000	0.000
Asymmetry Factor (channel 1)	0.000	0.000
Asymmetry Factor (channel 2)	0.000	0.000
Column Plate Count (channel 1)	0.000	0.000
Column Plate Count (channel 2)	0.000	0.000
Tailing Factor (channel 1)	0.000	0.000
Tailing Factor (channel 2)	0.000	0.000
Mean (channel 1) (min)	11.307	12.970
Mean (channel 2) (min)	11.297	12.973
Standard Deviation (channel 1) (min)	0.104	0.111
Standard Deviation (channel 2) (min)	0.106	0.113
Skew (channel 1)	-0.009	0.047
Skew (channel 2)	1.273	1.537
Peak Area % (channel 1) (%)	88.290	11.710
Peak Area % (channel 2) (%)	71.512	28.488
<b>Translational diffusion coefficient moments (cm<sup>2</sup>/sec)</b>		
Dt(n)	1.23×10 <sup>-6</sup> (±4.16%)	6.90×10 <sup>-7</sup> (±26.53%)
Dt(w)	1.23×10 <sup>-6</sup> (±4.16%)	6.69×10 <sup>-7</sup> (±26.66%)
Dt(z)	1.23×10 <sup>-6</sup> (±4.16%)	6.46×10 <sup>-7</sup> (±26.82%)
Dt(avg)	1.23×10 <sup>-6</sup> (±1.24%)	2.36×10 <sup>-8</sup> (±19.64%)

laser monitor average: 0.999 v

Forward Monitor Average: 0.934 v

laser current average: 0.156 amps

laser voltage average: -225784.949 v

rms conformation plot slope: -1.27 (±7.96%) log(nm)/log(g/mol)

rms Conformation Plot y-intercept: 6.806 (±6.770%) log(nm)

rh(Q) conformation plot slope: -1.601 (±9.264%) log(nm)/log(g/mol)

rh(Q) Conformation Plot y-intercept: 7.847 (±8.773%) log(nm)

rms radius vs. rh(Q) plot slope: 0.063 (±8.895%) rms radius vs. rh(Q) plot slope

rms radius vs. rh(Q) Plot y-intercept: 5.387 (±4.851%) log(nm)