

ASTRA 6 Report PNIPAAm_2-4-15



File Name: C:\Documents and Settings\Ayres Research Group\My Documents\Emily\Other's research\PNIPAAm_2-4-15.afe6

Collection Operator: AYRESGPC\Ayres Research Group (AYRESGPC\Ayres Research Group (Ayres Research Group))

Processing Operator: AYRESGPC\Ayres Research Group (Ayres Research Group)

Sample: sample

Concentration: 0.000 mg/mL

Configuration

Concentration Source: RI

Flow Rate: 1.000 mL/min

Light Scattering Instrument: miniDAWN TREOS

Band Broadening Correction: Yes (Instrumental: 37.238 μ L, Mixing: 76.699 μ L)

Cell Type: Fused Silica

Wavelength: 656.0 nm

Calibration Constant: 6.1272×10^{-5} 1/(V cm)

Detector	Scattering angle	Gain	Normalization coefficient
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1	46.6°	n/a	0.764
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2	90.0°	n/a	1.000
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3	133.4°	n/a	0.810
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RI Instrument: Optilab rEX

Band Broadening Correction: Yes (Instrumental: 27.923 μ L, Mixing: 0.732 μ L)

Wavelength: 658.0 nm

Viscometer: ViscoStar

Band Broadening Correction: n/a

Dilution Factor: 0.4976

Solvent: thf

Refractive Index: 1.402

uid Connections

Source Instrument	Destination Instrument	Delay Volume (mL)
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uid Connections

Source Instrument	Destination Instrument	Delay Volume (mL)
Generic Pump	Injector	0.000
Injector	Generic Column	0.000
Generic Column	miniDAWN TREOS	0.000
miniDAWN TREOS	ViscoStar	0.359
ViscoStar	Optilab rEX	0.107

Processing

Collection Time: Wednesday February 04, 2015 02:58:25 PM Eastern Daylight Time

Processing Time: Wednesday February 04, 2015 03:32:49 PM Eastern Daylight Time

Basic Collection:

LS Instrument Collection Interval: 1.000 sec

Baselines:

Series	Start	Stop	Type
detector 1	(18.345, 0.043)	(24.436, 0.043)	manual x, auto y
detector 2	(13.243, 0.029)	(28.661, 0.029)	manual x, auto y
detector 3	(11.136, 0.043)	(27.575, 0.043)	manual x, auto y
differential refractive index data	(13.501, 0.000)	(29.337, 0.000)	manual x, auto y
Differential Pressure	(9.072, - 0.000)	(28.202, - 0.000)	manual x, auto y

Peak settings:

Peak Name	Peak 1
Light Scattering Model	Zimm
Fit Degree	1
dn/dc (mL/g)	0.1588
A2 (mol mL/g²)	0.000

Viscometry Model Huggins

Huggins Equation Parameter 0

Kraemers Equation Parameter 0

Results Fitting Procedure:

Data Fit Model Degree R² Extrapolation

Results

Peak Results

Peak 1

Hydrodynamic radius (v) moments (nm)

Rh(v)n	2.353 (±1.547%)
Rh(v)w	2.382 (±1.467%)
Rh(v)z	2.407 (±1.419%)
Rh(v)(avg)	2.370 (±0.073%)

Masses

Calculated Mass (μg) 396.01

Molar mass moments (g/mol)

Mn	6.547×10^3 (±3.812%)
Mp	6.854×10^3 (±1.417%)
Mv	6.702×10^3 (±0.371%)
Mw	6.754×10^3 (±3.791%)
Mz	6.918×10^3 (±8.491%)
Mz+1	7.051×10^3 (±13.484%)
M(avg)	6.406×10^3 (±0.076%)

Polydispersity

Mw/Mn	1.032 (±5.376%)
Mz/Mn	1.057 (±9.307%)

rms radius moments (nm)

Rn	n/a
Rw	n/a
Rz	n/a
R(avg)	n/a

Intrinsic viscosity moments (mL/g)

[η]n	12.722 (±2.208%)
[η]w	12.75 (±1.80%)
[η]z	12.803 (±1.537%)
[η](avg)	12.569 (±0.092%)

Mark-Houwink-Sakurada a: 0.432 ($\pm 1.854\%$)
Mark-Houwink-Sakurada K: 2.753×10^{-1} ($\pm 7.103\%$) mL/g

