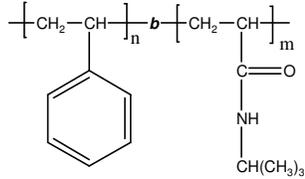


### Sample Name:

Poly(styrene-b-N-isopropyl acrylamide)

### Sample #: P14965-SNIPAM

### Structure:



### Composition:

$M_n \times 10^3$ S-b-NIPAM	$M_w/M_n$ (PDI)
11.5-b-16.0	1.1

Polystyrene content: 44 mol %

### Synthesis Procedure:

Poly(styrene-b-N-isopropyl acrylamide) is prepared by RAFT polymerization with sequence addition of styrene followed by N-isopropyl acrylamide. The polymer was obtained by precipitating into cold diethyl ether/hexane.

### Characterization:

The final block copolymer composition and molecular weight was calculated from  $^1\text{H-NMR}$  spectroscopy by comparing the peak area of the aromatic protons on styrene between about 6.5-7.5 ppm with the proton of NCH on NIPAM at 3.9 ppm. The PDI of block copolymer is determined by SEC.

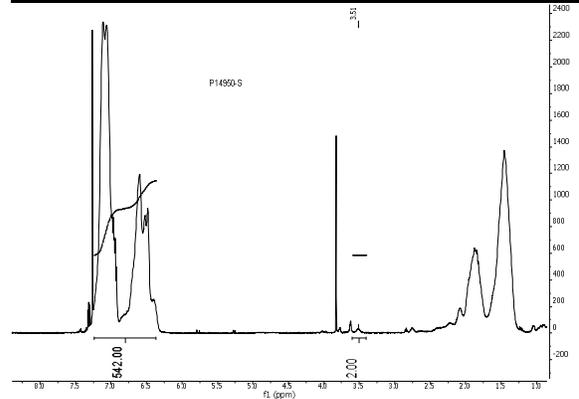
### Thermal analysis

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 15°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ( $T_g$ ).

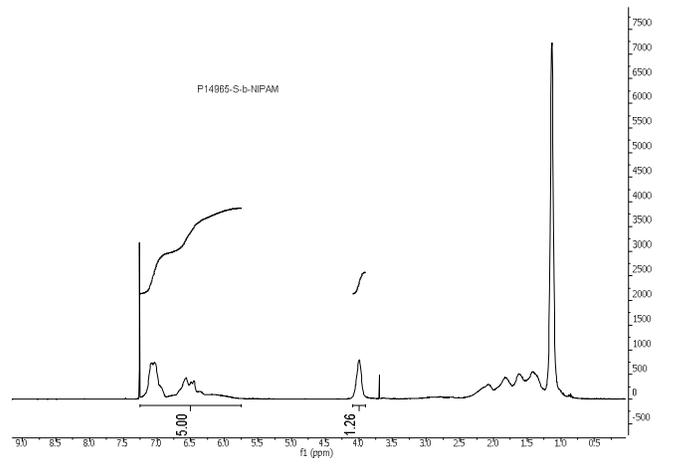
### Solubility:

Poly(styrene-b-N-isopropyl acrylamide) block copolymer is soluble in DMF.

### $^1\text{H NMR}$ spectrum of the first polystyrene block



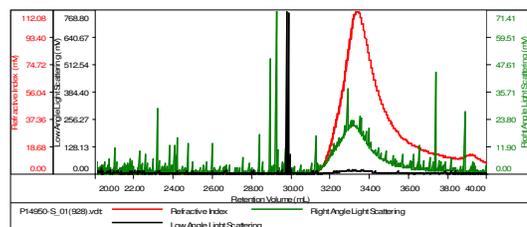
### $^1\text{H NMR}$ spectrum of the block copolymer S-b-NIPAM



### SEC of the first polystyrene block

Sample ID-P14950-S

Concentration (mg/mL)	1.5229
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-Jan-2016-0010.vcm
Column Set	3x PL 1113-8300
Solvent	THF

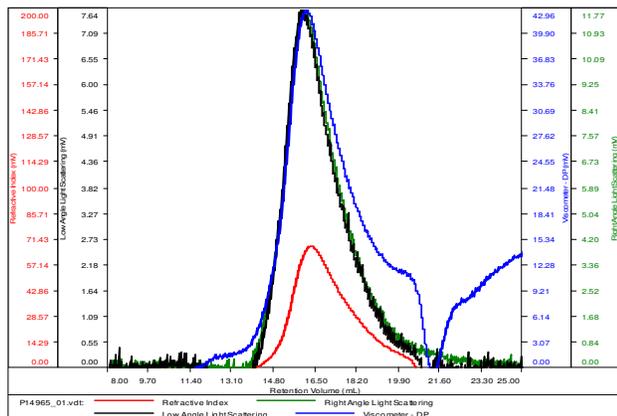


Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P14950-S_01(928).vcl	11,340	12,530	12,981	1.104	0.2221

# SEC of diblock poly(styrene-b- N-isopropyl acrylamide)

SAMPLE ID: P14965-SNIPAM

<b>Conc (mg/mL)</b>	5.6613
<b>dn/dc (mL/g)</b>	0.1150
<b>Method</b>	ps80k-21Jan2016-DMF-0000.vcm
<b>Solvent</b>	DMF w 0.023M LiBr
<b>Column</b>	PSS



Sample	Mn	Mw	Mp	Mw/Mn	IV
P14965_01.vdt	27,648	29,885	27,971	1.081	0.2456