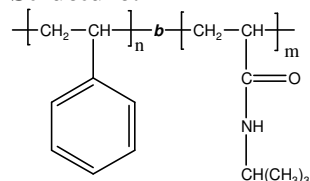


Sample Name:
Poly(styrene-*b*-N-isopropyl acrylamide)

Sample #: P14964-SNIPAM

Structure:



Composition:

| | |
|--|-------------|
| Mn x 10 ³ S- <i>b</i> -NIPAM | Mw/Mn (PDI) |
| 11.5- <i>b</i> -7.5 | 1.1 |

Polystyrene content: 63 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 ¹H-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.

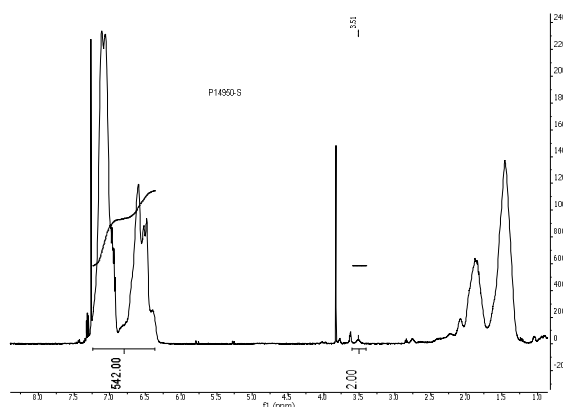
Thermal analysis

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).

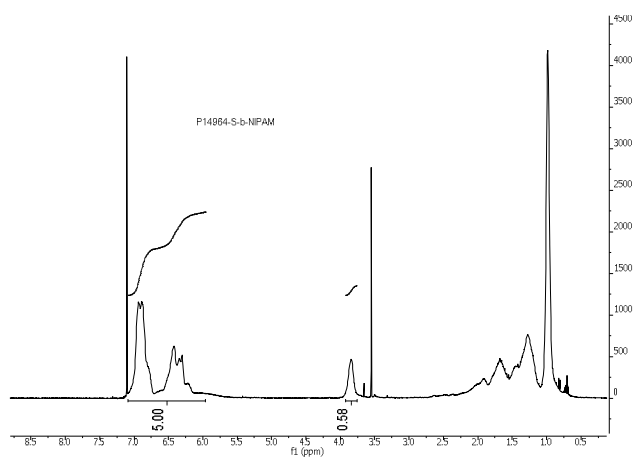
Solubility:

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

¹H NMR spectrum of the first polystyrene block



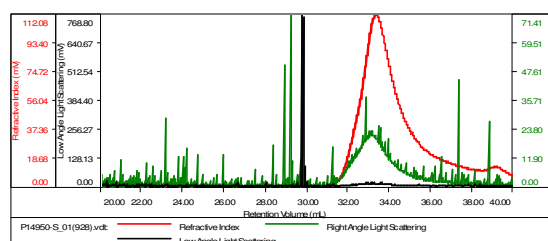
¹H NMR spectrum of the block copolymer S-*b*-NIPAM



SEC of the first polystyrene block

Sample ID: P14950-S

| | |
|-----------------------|-------------------------|
| Concentration (mg/mL) | 1.5529 |
| Sample dn/dc (mL/g) | 0.1950 |
| Method File | PS80K-Jan-2016-0000.vcm |
| Column Set | 3x PL 1113-6300 |
| Solvent | THF |

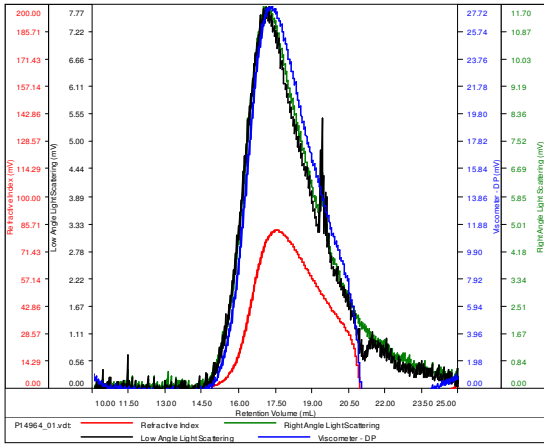


| Sample | MW Number Average (Da) | MW Weight Average (Da) | MW at Peak (Da) | Polydispersity | Intrinsic Viscosity (dL/g) |
|-----------------------|------------------------|------------------------|-----------------|----------------|----------------------------|
| P14950-S_011(929).vdt | 11,340 | 12,530 | 12,581 | 1.104 | 0.2521 |

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

SAMPLE ID: P14964-SNIPAM

| | |
|--------------|-----------------------------|
| Conc (mg/mL) | 7.5546 |
| dn/dc (mL/g) | 0.1320 |
| Method | ps80k21Jan2016-DMF-0000.vcm |
| Solvent | DMF w 0.023M LiBr |
| Column | PSS |



| Sample | Mn | Mw | Mp | Mw/Mn | IV |
|---------------|--------|--------|--------|-------|--------|
| P14964_01.vdt | 18,884 | 20,266 | 19,958 | 1.073 | 0.1277 |