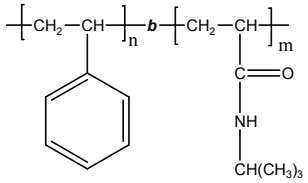
Sample Name:
Poly(styrene-b-N-isopropyl acrylamide)

Sample #: P14514A-SNIPAM

Structure:

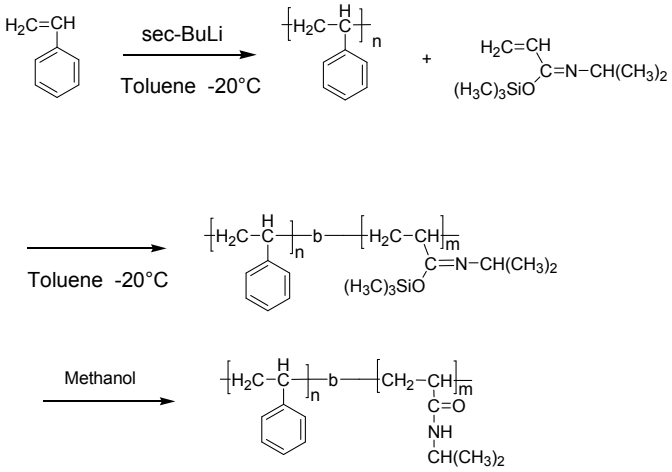


Composition:

Mn x 10^3 S-b-NIPAM	Mw/Mn (PDI)
16.0-b-7.5	1.3

Synthesis Procedure:

Poly(styrene-b-N-isopropyl acrylamide) is prepared by living anionic polymerization with sequence addition of styrene followed by trimethylsilane-protected N-isopropyl acrylamide. The polymer was obtained by cleaving the trimethylsilane group by adding methanol and precipitating into hexane.



Characterization:

The final block copolymer composition was calculated from ^{1}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.

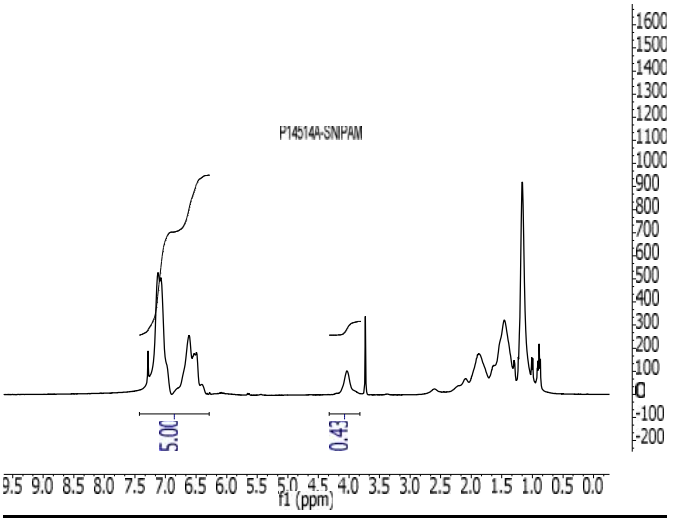
Thermal analysis

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).

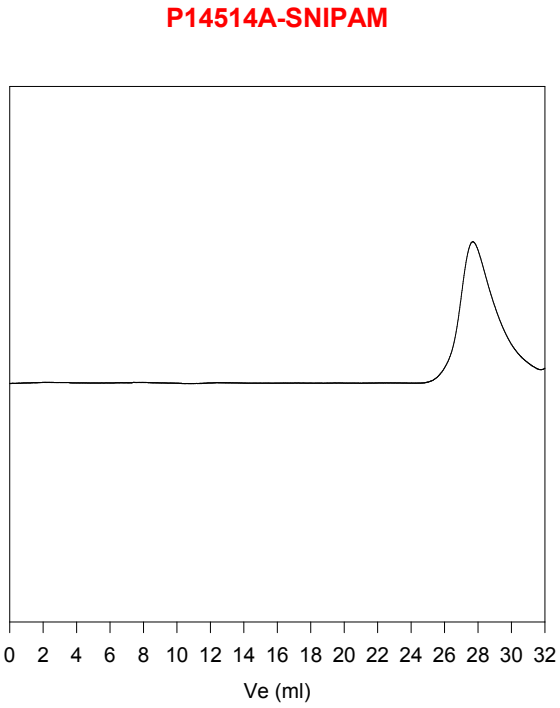
Solubility:

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

^{1}H NMR spectrum of the block copolymer



SEC of block copolymer



Size exclusion chromatography of polystyrene-b-N-isopropylacrylamide)

—— Polystyrene, M_n=16,100, M_w=21,000, PDI=1.3

—— Block Copolymer PS(16,000)-b-NIPAM(7,500), PDI=1.3