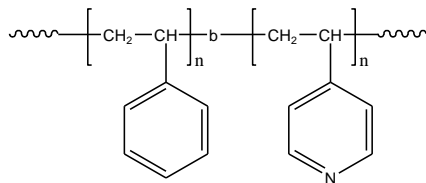


Sample Name: Poly(styrene-b-4-vinyl pyridine)

Sample #: P18249-S4VP

Structure:



Composition:

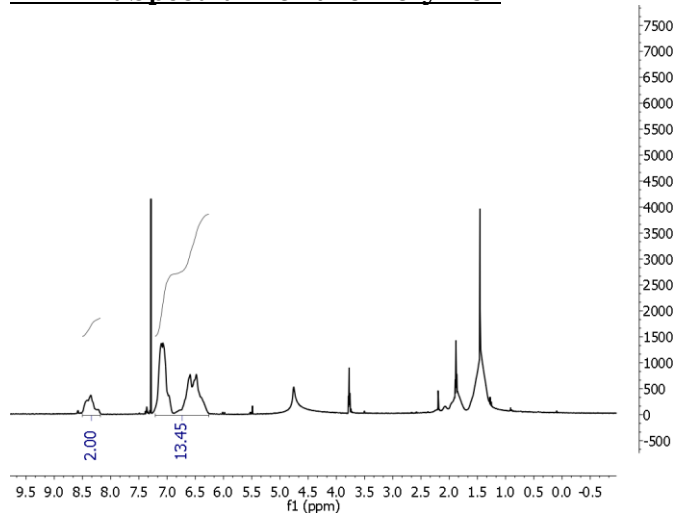
$M_n \times 10^3$ S-b-4VP	PDI
58.0-b-25.5	1.10

By anionic polymerization process.

Characterization:

An aliquot of the anionic polystyrene block was terminated before addition of 4VP and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The Block copolymer composition was then calculated from $^1\text{H-NMR}$ spectroscopy by comparing the peak area of the 4VP proton at 8.2 ppm with the peak area of the aromatic protons of polystyrene at 6.3-7.2 ppm. The composition of the block copolymer can also be determined by titration in acetic acid/ HClO_4 using crystal violet indicator. Copolymer PDI is determined by SEC.

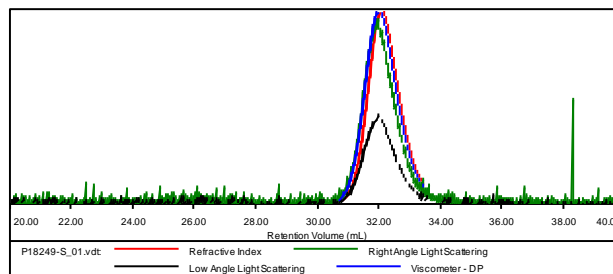
$^1\text{H-NMR}$ Spectrum of the Polymer



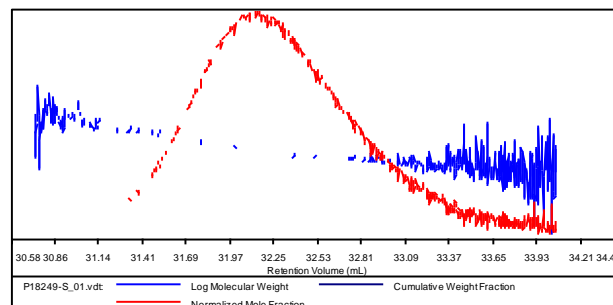
SEC of the polymer:

Sample ID: P18429_s

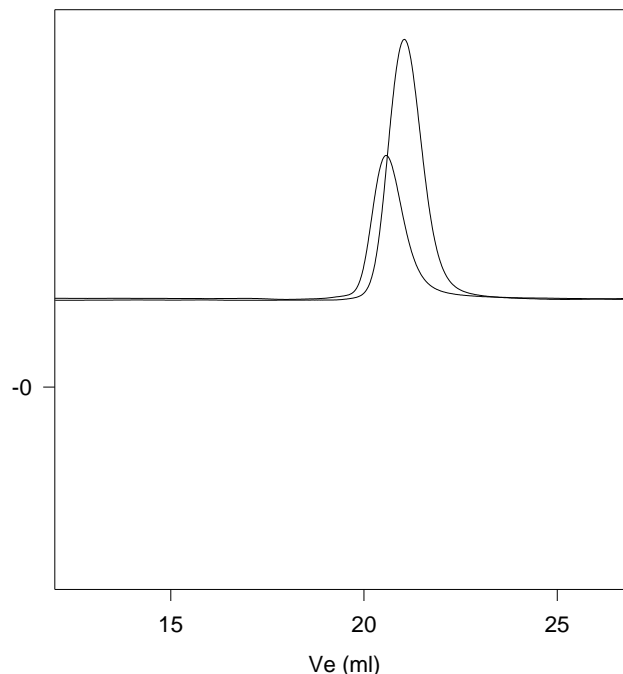
Concentration (mg/mL)	4.7051
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-OCT-2013-0003.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	M_n	M_w	M_p	M_w/M_n	IV
P18249-S_01.vdt	57,706	60,437	59,458	1.047	0.4452



P18249-S4VP



- Polystyrene, $M_n=58,000$, $M_w=60,300$, $PI=1.04$
— Block Copolymer PS(58,000)-b-P4VP(25,500), $PI=1.10$
Composition from H NMR

References:

- (1). S. K. Varshney, X. F. Zhong and A. Eisenberg *Macromolecules*, **1993**, 26, 701-706.
- (2). Z.Gao, S. K. Varshney, S. Wong, A. Eisenberg *Macromolecules*, **1994**, 27, 7923-7927.