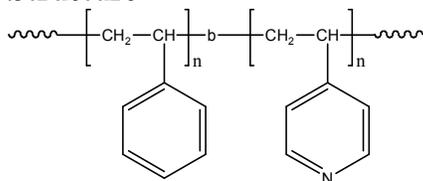


Sample Name: Poly(styrene-b-4-vinyl pyridine)

Sample #: P11433-S4VP

Structure:



Composition:

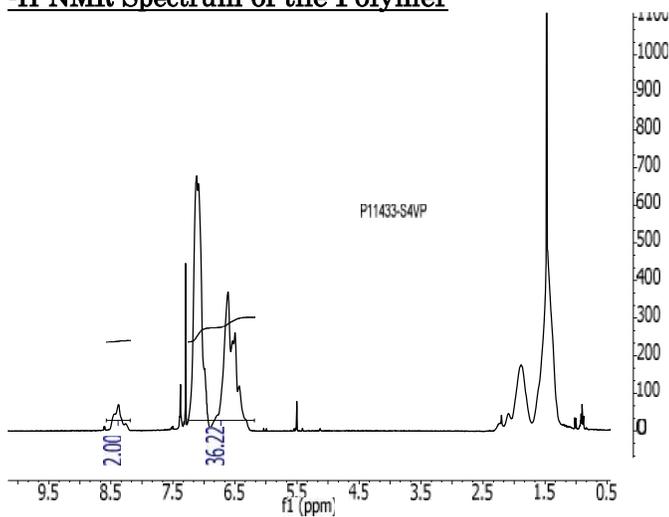
$M_n \times 10^3$ S-b-4VP	PDI
182.0-b-27.0	1.10

By anionic polymerization process.

Characterization:

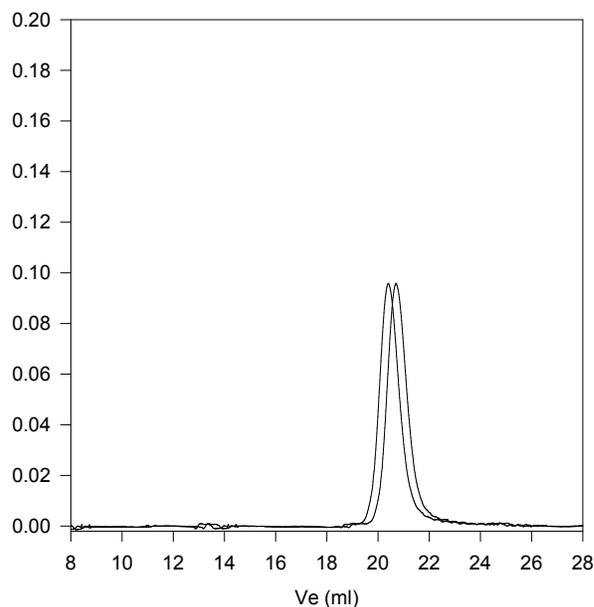
An aliquot of the anionic polystyrene block was terminated before addition of 4VP and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The Block copolymer composition was then calculated from $^1\text{H-NMR}$ spectroscopy by comparing the 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:

P11433-S4VP



Size exclusion chromatography of P(s-b-4VP) in DMF at 40 oC:

— PS block: $M_n=182,000$, $M_w=193,000$, $PI=1.06$

— Block Copolymer PS-4VP (182,000)-b-4VP(27,000), $PI=1.10$

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.