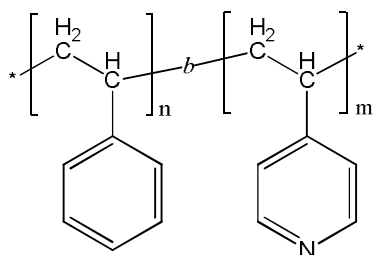


Sample Name: Poly(styrene-b-4-vinyl pyridine)

Sample #: P19212-S4VP

Structure:



Composition:

$M_n \times 10^3$ S-b-4VP	PDI
107.0–18.0	1.10
Tg for PS block:	104 °C

Synthesis Procedure:

Poly(styrene-b-4-vinyl pyridine) is prepared by living anionic polymerization in THF at -78°C in the presence of LiCl as an additive.

Characterization: by SEC and by $^1\text{H-NMR}$.

Purification of the obtained polymer:

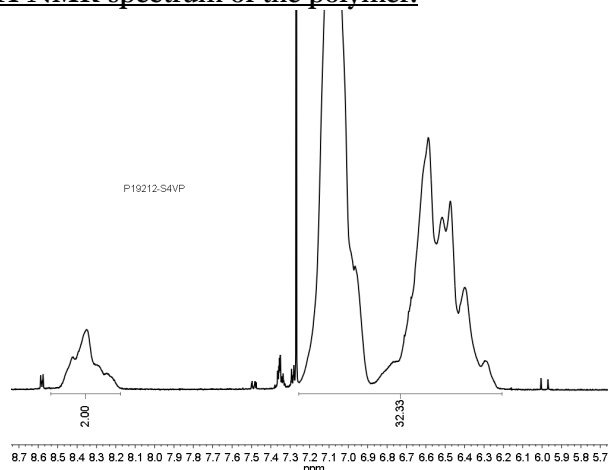
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in CHCl_3 and wash with de-ionized distilled water to remove any soluble organic catalyst side product.
2. Polymer was extracted from water with chloroform.
3. Polymer solution in CHCl_3 was dried over anhydrous sodium sulfate.
4. Solution was filtered and then was passed through a column packed with basic Al_2O_3 .
5. Solution was concentrated on rota-evaporator
6. Solution was precipitated in cold hexane and redissolved in benzene and freeze dried.
7. Dried under vacuum for 48h at 50°C .

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.

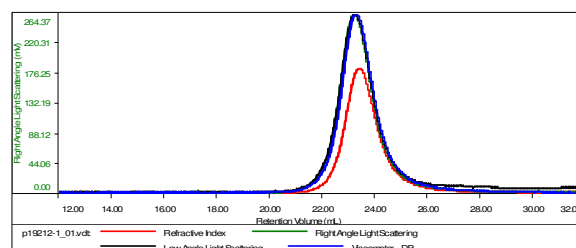
$^1\text{H NMR}$ spectrum of the polymer:



SEC of the first block and diblock copolymer:

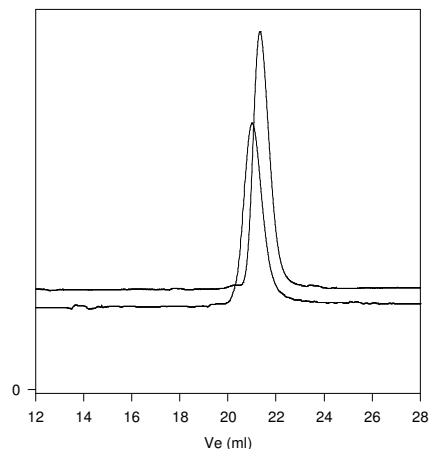
Sample ID: P19212-S

Concentration (mg/mL)	2.4809
Sample conc (mg/mL)	0.1850
Method File	PS80K-April 13-2015-0000.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)
p19212-1_01.vcl	107,046	114,336	105,415	1.068	1.3239

P19212-S4VP



Size exclusion chromatography of P(s-b-4VP) in DMF at 40°C :
— PS block: $M_n=107,000$, $M_w=114,000$, $PI=1.08$
— Block Copolymer PS-4VP (107,000)-b-4VP(18,000), $PI=1.10$