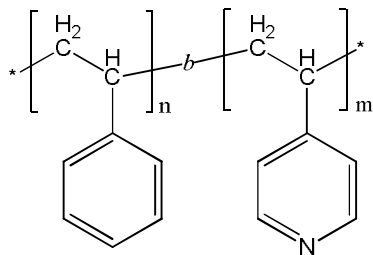


**Sample Name:** Poly(styrene-b-4-vinyl pyridine)

**Sample #:** P19204-S4VP

**Structure:**



**Composition:**

$M_n \times 10^3$ S-b-4VP	PDI
184.0–b–44.0	1.10
Tg for PS block:	104 °C
Tg for P4VP block:	153 °C

**Synthesis Procedure:**

Poly(styrene-b-4-vinyl pyridine) is prepared by living anionic polymerization in THF at  $-78^\circ\text{C}$  in the presence of LiCl an additive.

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

**Purification of the obtained polymer:**

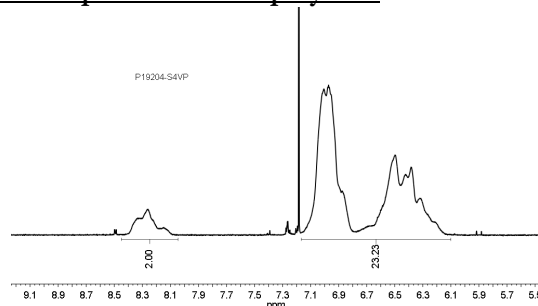
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in  $\text{CHCl}_3$  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  $\text{CHCl}_3$  was dried over anhydrous sodium sulfate.
4. Solution was filtered and then was passed through a column packed with basic  $\text{Al}_2\text{O}_3$ .
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  $50^\circ\text{C}$ .

**References:**

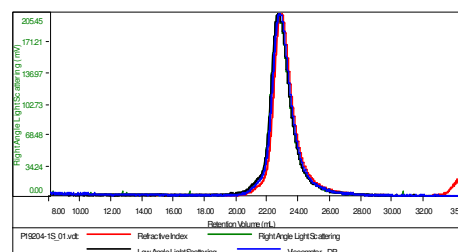
- (1). S. K. Varshney, X. F. Zhong and A. Eisenberg Macromolecules, **1993**, 26, 701-706.
- (2). Z.Gao, S. K. Varshney, S. Wong, A. Eisenberg Macromolecules, **1994**, 27, 7923-7927.

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



**SEC of the first block and diblock copolymer:**

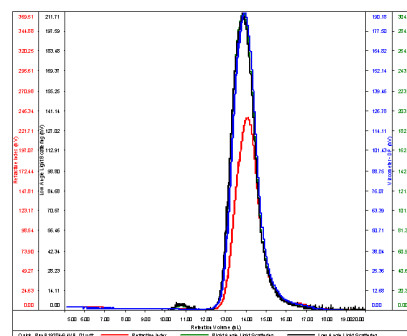
Sample ID: P19204-S	
Concentration (mg/mL)	4.0329
Sample div/c (mL/g)	0.1850
Method File	PS80K-March6-2015-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersal	Intrinsic Viscosity (dL/g)
P19204-S_01.vct	183,986	193,719	187,234	1.053	0.5262

**SAMPLE ID: P19204-S4VP**

Conc (mg/mL)	0.6034
div/c (mL/g)	0.1590
Method	PS80K-NOV2014-0-0000.vcm
Solvent	DMF w 0.03M LiBr
Column	PSS



**DSC thermogram of the polymer:**

