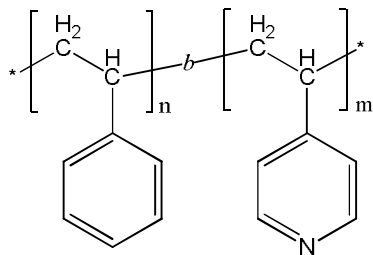


**Sample Name:** Poly(styrene-b-4-vinyl pyridine)

**Sample #:** P18636-S4VP

**Structure:**



**Composition:**

$M_n \times 10^3$ S-b-4VP	PDI
157.0–b–28.0	1.09
T <sub>g</sub> for PS block:	104 °C
T <sub>g</sub> for P4VP block:	153 °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 an additive.

**Characterization:** by SEC and by <sup>1</sup>H-NMR.

**Purification of the obtained polymer:**

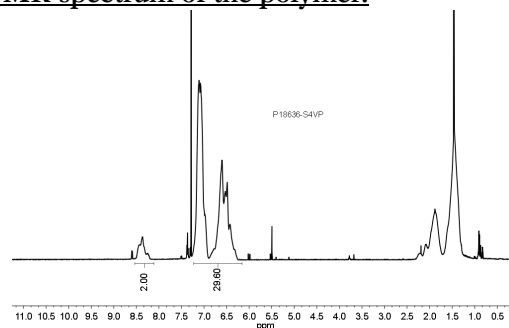
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in CHCl<sub>3</sub> 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<sub>3</sub> was dried over anhydrous sodium sulfate.
4. Solution was filtered and then was passed through a column packed with basic Al<sub>2</sub>O<sub>3</sub>.
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.

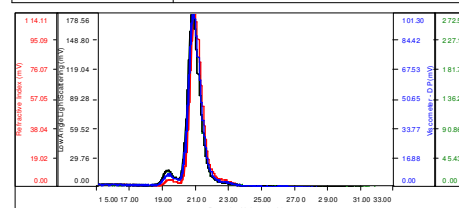
**<sup>1</sup>H NMR spectrum of the polymer:**



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

**Sample ID: P18636-S Block**

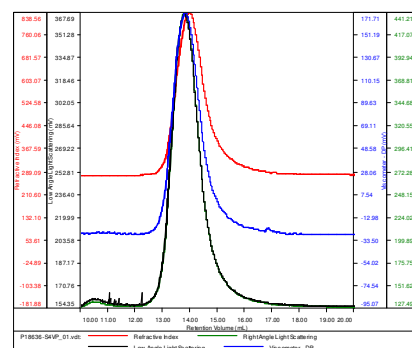
Concentration (mg/mL)	5.5850
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-Apr15-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	M <sub>n</sub>	M <sub>w</sub>	M <sub>p</sub>	M <sub>w</sub> /M <sub>n</sub>	IV
P18636-1-S_01.vd1	156,922	168,020	168,776	1.071	0.3072

**SAMPLE ID: P18636-S4VP**

Conc (mg/mL)	6.8332
dn/dc (mL/g)	0.1580
Method	ps80k42014-0000.vcm
Solvent	DMF w/ 0.03M LiBr
Column	PSS



Sample	M <sub>n</sub>	M <sub>w</sub>	M <sub>p</sub>	M <sub>w</sub> /M <sub>n</sub>	IV
P18636-S4VP_01.vd1	185,270	202,029	198,163	1.090	0.4077

**DSC thermogram:**

