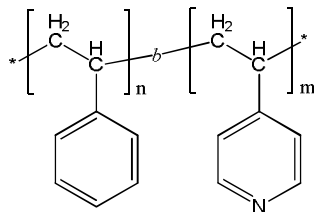


**Sample Name:** Poly(styrene-b-4-vinyl pyridine)

**Sample #:** P19554-S4VP

**Structure:**



**Composition:**

$M_n \times 10^3$ S-b-4VP	PDI
142.5-b-29.0	1.10
$T_g$ for PS block:	104 °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 1H-NMR.

**Purification of the obtained polymer:**

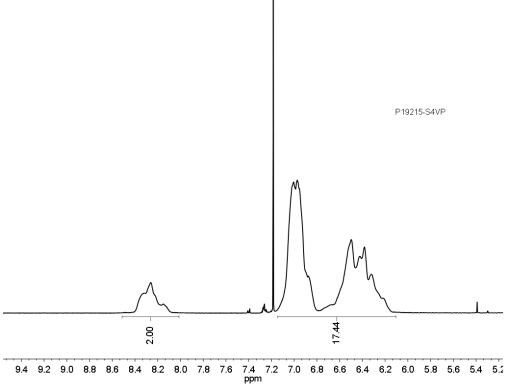
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in  $\text{CHCl}_3$  and wash with deionized 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.

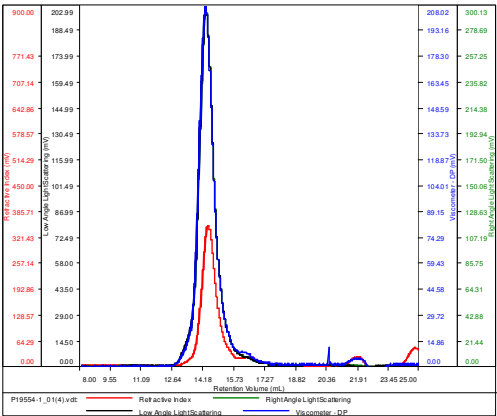
**$^1\text{H}$  NMR spectrum of the polymer:**



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

**SAMPLE ID: P19554-S**

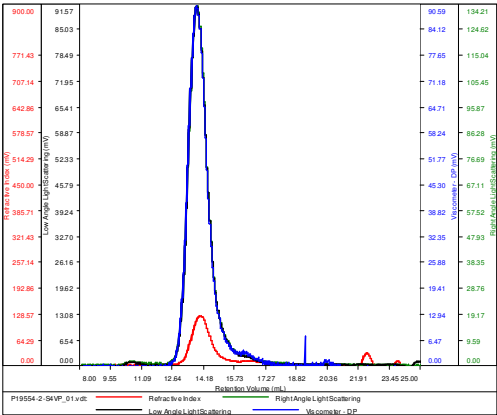
Conc (mg/mL)	5.6944
dn/dc (mL/g)	0.1650
Method	ps80k-July292015-0000.vcm
Solvent	DMF w 0.03M LiBr
Column	PSS



Sample	Mn	Mw	Mp	Mw/Mn	IV
P19554-1_01(4).vdt	141,699	151,581	141,750	1.070	0.3805

**SAMPLE ID: P19554-S-4VP**

Conc (mg/mL)	2.6674
dn/dc (mL/g)	0.1620
Method	ps80k-July292015-0000.vcm
Solvent	DMF w 0.03M LiBr
Column	PSS



Sample	Mn	Mw	Mp	Mw/Mn	IV
P19554-2-S4VP_01.vdt	171,838	190,235	185,662	1.107	0.4419