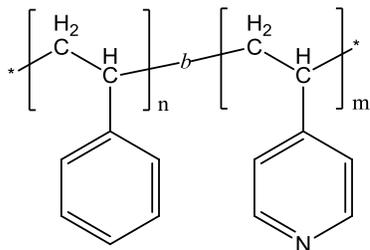


Sample Name: Poly (styrene-b-4-vinyl pyridine)

Sample #: P5570-S4VP

**Structure:**



**Composition:**

$M_n \times 10^3$ S-b-4VP	PDI
337.0–b–31.5	1.16

**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 as an additive.

**Characterization:**

The product was characterized by SEC and by  $^1\text{H-NMR}$ .

**Purification of the obtained polymer:**

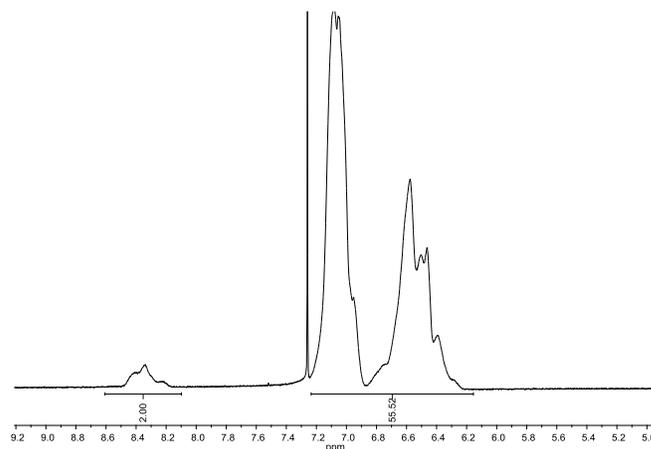
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

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.

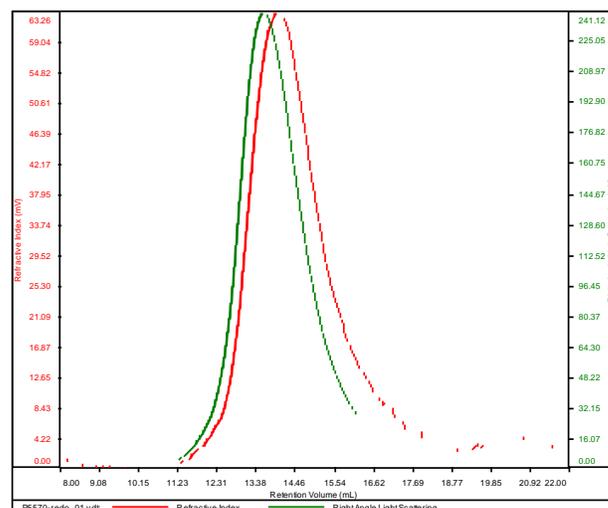
**$^1\text{H NMR}$  spectrum of the diblock polymer:**



**SEC of the diblock copolymer:**

P5570-S4VP

Conc	3.7443
dn/dc	0.1650
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS-80K_2018-04-02-0000.vcm



Sample	Mn	Mw	Mp	Mw/Mn	IV
P5570-redo_01.vdt	368,529	426,797	442,286	1.158	0.8243