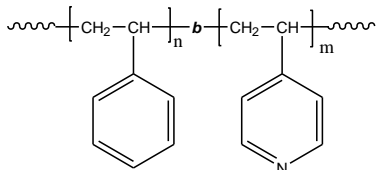


Sample Name: Poly(styrene-b-4-vinyl pyridine)

Sample #: P40606-S4VP

Structure:



Composition:

| Mn x 10 <sup>3</sup><br>PS-b-4VP   | PDI                                 |
|------------------------------------|-------------------------------------|
| 83.0-b-54.5                        | 1.08                                |
| T <sub>g</sub> for PS block: 105°C | T <sub>g</sub> for 4VP block: 133°C |

Synthesis Procedure:

The polymer was synthesized by anionic process.

Characterization:

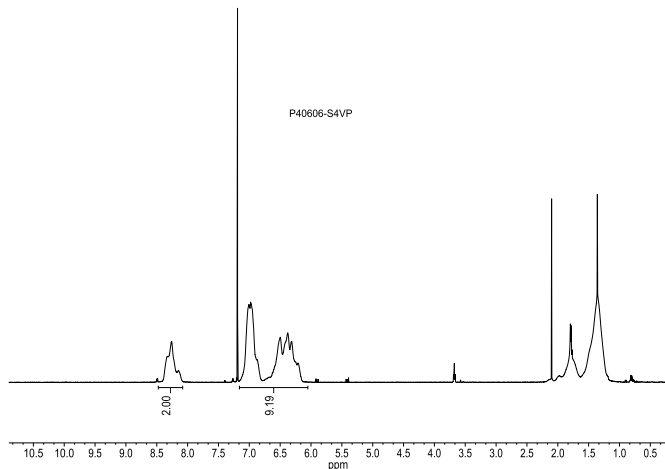
The polymer was characterized by SEC and <sup>1</sup>H NMR. The composition of the block copolymer can also be determined by titration in acetic acid/HClO<sub>4</sub> using crystal violet indicator. Copolymer PDI is determined by SEC.

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 15°C/min. The inflection glass transition temperature (T<sub>g</sub>) of the sample has been considered.

Solubility:

Poly(styrene-b-4-vinyl pyridine) is soluble in CHCl<sub>3</sub> DMF.

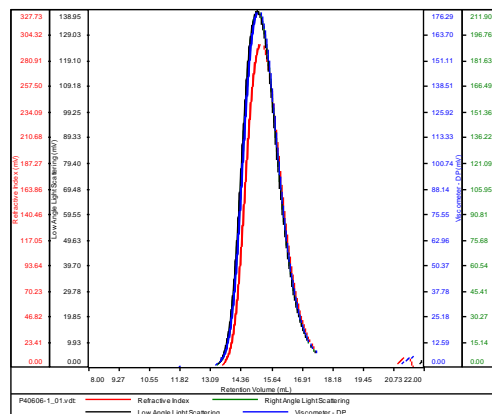
<sup>1</sup>H NMR spectrum of the polymer:



SEC elugram of the polystyrene block:

P40606-1

|           |                        |
|-----------|------------------------|
| Conc      | 23.6293                |
| dn/dc     | 0.1650                 |
| Solvent   | DMF w 0.023M LiBr      |
| Flow Rate | 0.7000                 |
| Method    | PS80k-May2017-0000.vcm |

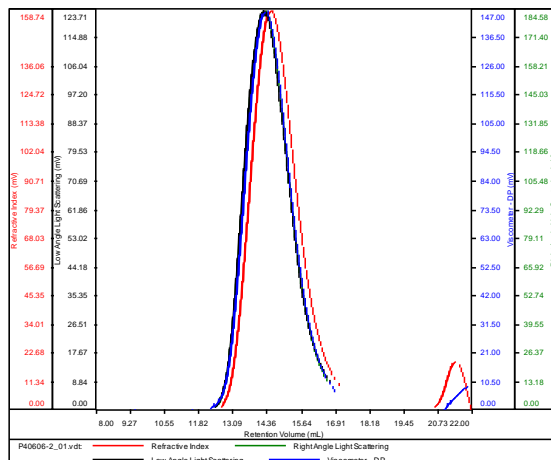


| Sample          | MW Number Average | MW Weight Average | MW at Peak | Polydispersity | Intrinsic Viscosity |
|-----------------|-------------------|-------------------|------------|----------------|---------------------|
| P40606-1_01.vdt | 82,784            | 85,845            | 83,433     | 1.037          | 0.1477              |

SEC elugram of the diblock polymer:

P40606-S4VP

|           |                        |
|-----------|------------------------|
| Conc      | 14.7863                |
| dn/dc     | 0.1550                 |
| Solvent   | DMF w 0.023M LiBr      |
| Flow Rate | 0.7000                 |
| Method    | PS80k-May2017-0000.vcm |



| Sample          | MW Number Average | MW Weight Average | MW at Peak | Polydispersity | Intrinsic Viscosity |
|-----------------|-------------------|-------------------|------------|----------------|---------------------|
| P40606-2_01.vdt | 137,441           | 148,691           | 141,597    | 1.082          | 0.2146              |

References:

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