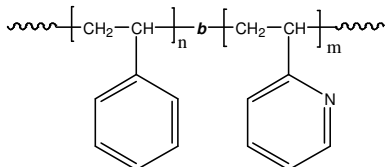


Sample Name:

**Polystyrene-*b*-poly(2-vinyl pyridine)**

Sample #: **P18869-S2VP**

Structure:



**Composition of PS-*b*-P2VP diblock copolymer:**

$M_n \times 10^3$ (g/mol)	PDI
57.0– <i>b</i> –57.0	1.05

**Synthesis:**

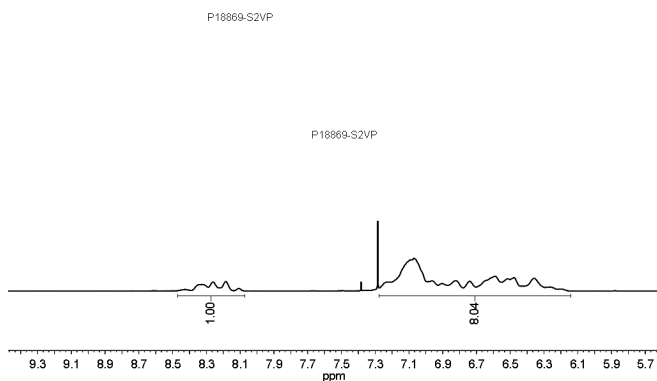
Polystyrene-*b*-poly(2-vinyl pyridine) was prepared by living anionic polymerization in THF at  $-78^\circ\text{C}$  in the presence of LiCl as an additive.

**Characterization:**

Polymer was analyzed by size exclusion chromatography (SEC) to obtain its molecular weight and polydispersity index (PDI).

The block copolymer composition was calculated from its  $^1\text{H}$ -NMR spectrum by comparing the peak area of the 2VP protons (at 8.2 ppm) with the peak area of the aromatic protons of polystyrene (at 6.3–7.2 ppm). The composition of the block copolymer can also be determined by titration PS-*b*-P2VP in acetic acid/HClO<sub>4</sub> using crystal violet indicator. PDI of block copolymer was determined by SEC.

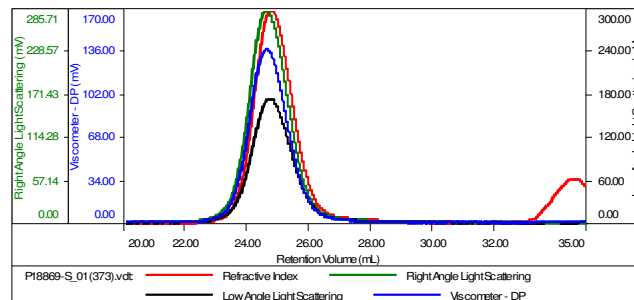
**$^1\text{H}$  NMR spectrum of PS-*b*-P2VP:**



**SEC elugram of PS block:**

Sample ID: P18869-S

Concentration (mg/mL)	8.7142
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-0903-2014-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF

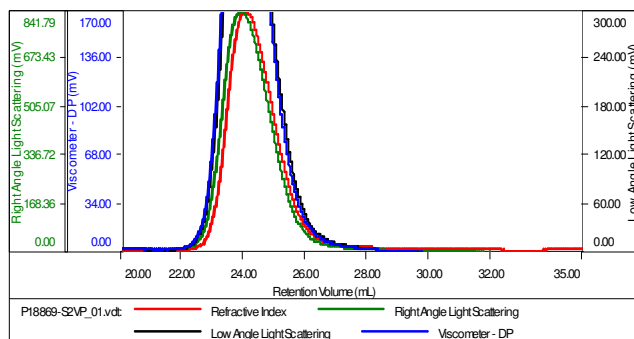


Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P18869-S_01(373).vdt	56,938	60,061	57,866	1.055	0.4914

**SEC elugram of PS-*b*-P2VP diblock copolymer:**

Sample ID: P18869-S2VP

Concentration (mg/mL)	17.0934
Sample dn/dc (mL/g)	0.1730
Method File	PS80K-0903-2014-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P18869-S2VP_01.vdt	114,854	121,086	120,623	1.054	0.6622

**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.