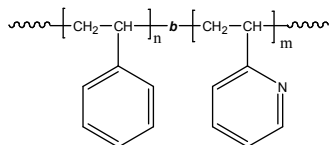


**Sample Name:** Poly(styrene-b-2-vinyl pyridine)

**Sample #:** P5071-S2VP

**Structure:**

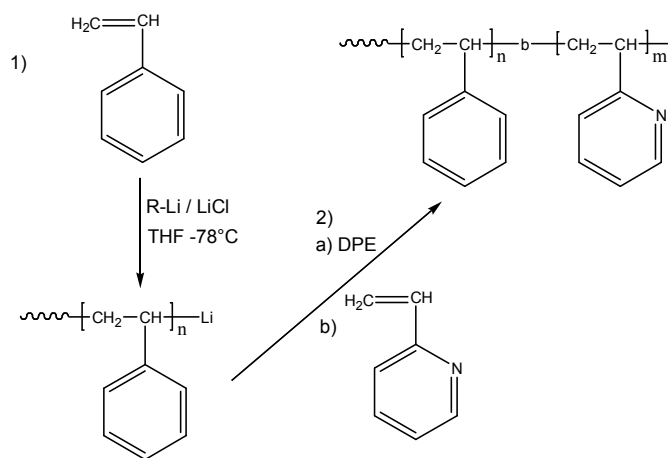


**Composition:**

Mn x 10 <sup>3</sup> S-b-2VP	PDI
570.0-b-1.0	1.12

**Synthesis Procedure:**

Poly(styrene-b-2-vinyl pyridine) is prepared by living anionic polymerization in THF at  $-78^{\circ}\text{C}$  in the presence of LiCl an additive. Polystyrene macroanions were end capped with a unit of diphenyl ethylene (DPE) before adding 2-vinylpyridine (2VP) monomer. For further details please see our published articles<sup>1,2</sup> The scheme of the reaction is illustrated below:



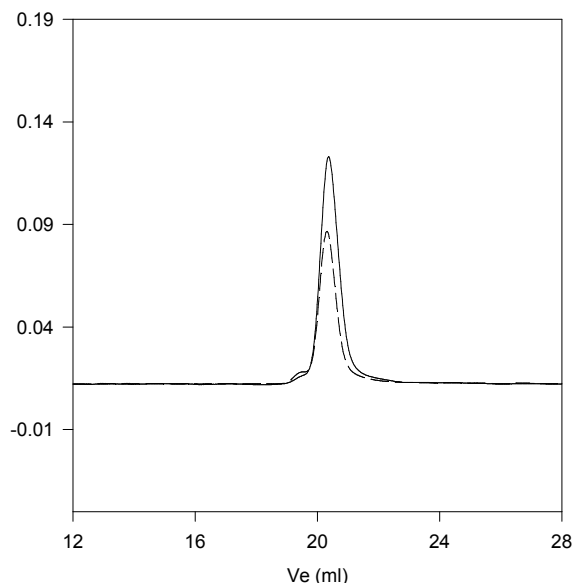
**Characterization:**

An aliquot of the anionic polystyrene block was terminated before addition of 2VP and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). 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.

**Solubility:**

Poly(styrene-b-2 vinylpyridine) is soluble in THF, toluene, and CHCl<sub>3</sub>. The diblock copolymer can also be solubilized in methanol, ethanol depending on its composition. The polymer readily precipitates from hexanes, ether and water.

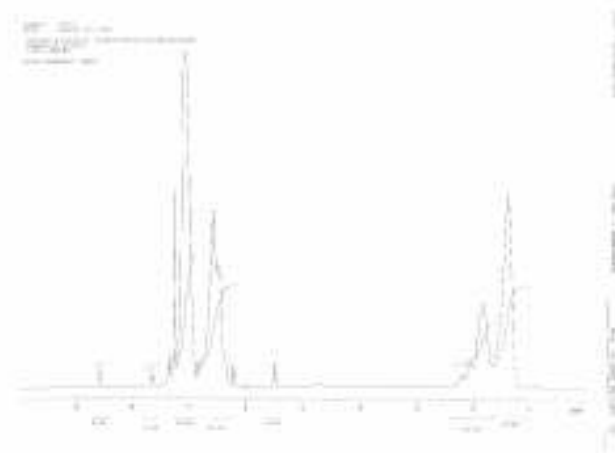
**SEC of Sample P5071-S2VP:**



Size exclusion chromatography of polystyrene-b-poly(2-vinylpyridine)

- Polystyrene,  $M_n=570000$ ,  $M_w=616000$ ,  $PI=1.10$
- Block Copolymer PS(570000)-b-P2VP(1000),  $PI=1.12$

**<sup>1</sup>H NMR of the product:**



**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.