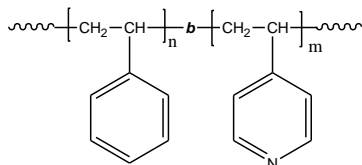


**Sample Name:** Poly(styrene-b-4-vinyl pyridine)

**Sample #:** P43211-S4VP

**Structure:**



**Composition:**

Mn × 10 <sup>3</sup> S-b-4VP	PDI
185.0-b-32.0	1.05

Tg for PS block: 104 °C
Tg for 4VP block: 153 °C

**Synthesis Procedure:**

Poly(styrene-b-4-vinyl pyridine) is prepared by living anionic polymerization in THF at -78 °C in the presence of LiCl as an additive.

**Characterization:**

The product was characterized by size exclusion chromatography (SEC) and <sup>1</sup>H NMR data analysis.

**Solubility:**

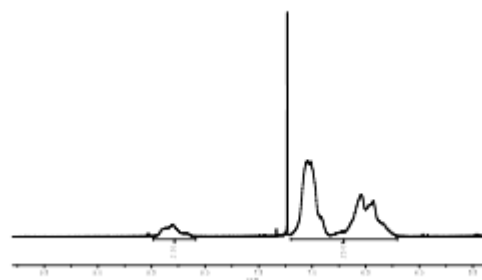
Poly(styrene-b-4 vinylpyridine) is soluble in THF, toluene, and CHCl<sub>3</sub>. The diblock copolymer can also be solubilized in methanol, ethanol depending on its composition. The polymer readily precipitates from hexanes, ether, and water.

**Purification:**

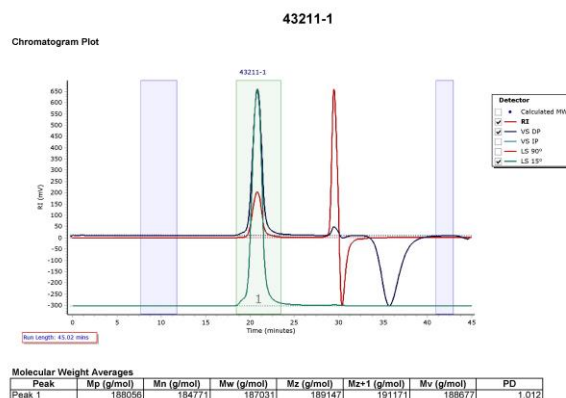
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in CHCl<sub>3</sub> and wash with de-ionized distilled water to remove the any soluble organic catalyst side product.
2. Polymer extracted from water with chloroform.
3. Polymer solution in CHCl<sub>3</sub> was dried over anhydrous sodium sulfate.
4. Solution filtered and then passed through a column packed with basic Al<sub>2</sub>O<sub>3</sub>.
5. Solution concentrated on rota-evaporator.
6. Solution precipitated in cold hexane and redissolved in benzene and freeze dried.
7. Final dried under vacuum for 48h at 50°C.

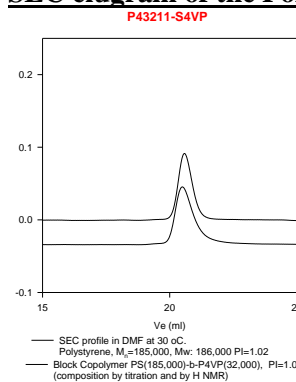
**<sup>1</sup>H NMR Spectrum of the Polymer**



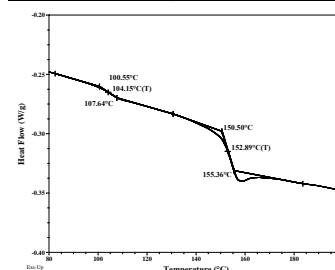
**SEC elugram of the PS Block:**



**SEC elugram of the Polymer:**



**DSC thermogram for the PS block:**



**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.