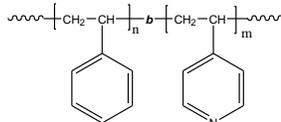


Sample Name:  
**Poly(styrene-b-4-vinyl pyridine)**

Sample #: **P44225-S4VP**

**Structure:**



**Composition:**

$M_n \times 10^3$	PDI
S-b-4VP	
12.0-B-12.0	1.05

T <sub>g</sub> for PS block: 104 °C T <sub>g</sub> 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 an additive.

**Characterization:**

The product was characterized by size exclusion chromatography (SEC),  $^1\text{H}$  NMR and DSC data analysis.

**solubility:**

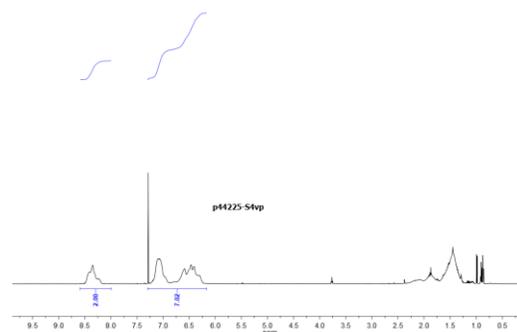
Poly(styrene-b-4 vinylpyridine) is soluble in THF, DMF, and  $\text{CHCl}_3$ .

**Purification:**

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

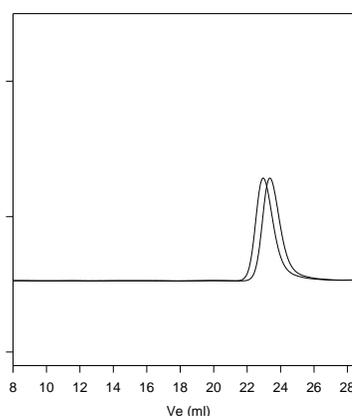
1. Dissolved the polymer in  $\text{CHCl}_3$  and washed with de-ionized distilled water to remove the any soluble organic catalyst side product.
2. Polymer extracted from water with chloroform.
3. The polymer solution in  $\text{CHCl}_3$  was dried over anhydrous sodium sulfate.
4. Solution filtered and then passed through a column packed with basic  $\text{Al}_2\text{O}_3$ .
5. Solution concentrated on rota-evaporator.
6. Solution precipitated in cold hexane and redissolved in benzene and freeze dried.
7. Finally dried under vacuum for 48h at  $50$  °C.

**$^1\text{H}$  NMR Spectrum of the Polymer**



**SEC profile of the Polymer:**

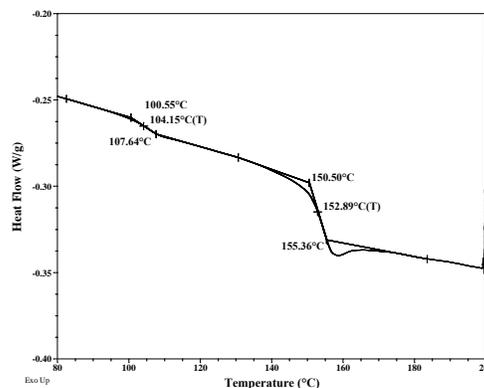
**P44225-S4VP**



Size exclusion chromatography of poly(styrene-b-4-vinyl pyridine)

— Polystyrene,  $M_n=12,000$   $M_w=12,500$  PI=1.05  
— Polystyrene(12,000)-b-Poly 4VP (12,000), PI=1.05

**DSC thermogram of the Sample:**



**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.