

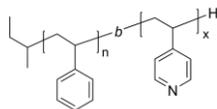
**Sample Name:**

**Poly(styrene)-b-oligo(4-vinyl pyridine)**

*Bearing different degree of 4VP units*

**Sample #: P43808-S4VP**

**Structure:**



**Composition:**

$M_n \times 10^3$	PDI
S-b-4VP	
28.0-b-0.1	1.01

Dp of each unit 270-b-1
Tg for PS block: 104 °C

**Synthesis Procedure:**

Polymers were prepared by living anionic polymerization in THF at  $-78\text{ }^\circ\text{C}$  in the presence of LiCl as an additive.

**Characterization:**

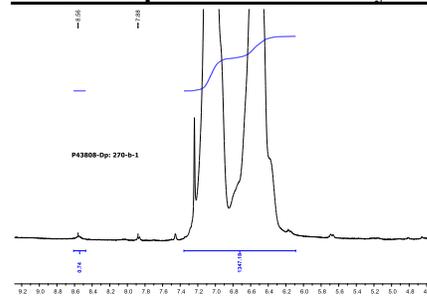
The product was characterized by size exclusion chromatography (SEC) and  $^1\text{H}$  NMR and FTIR data analysis.

**Purification:**

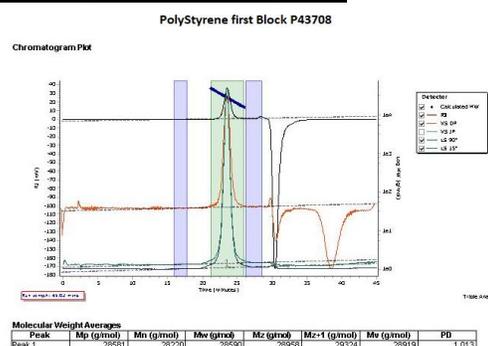
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in  $\text{CHCl}_3$  and 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  $\text{CHCl}_3$  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. Final dried under vacuum for 48h at  $50\text{ }^\circ\text{C}$ .

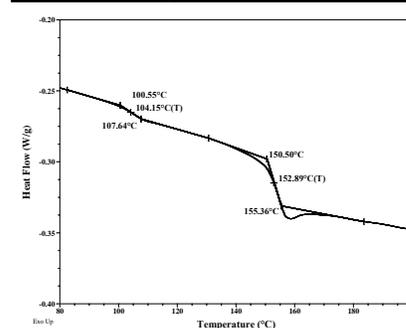
**$^1\text{H}$  NMR Spectrum of the Polymer**



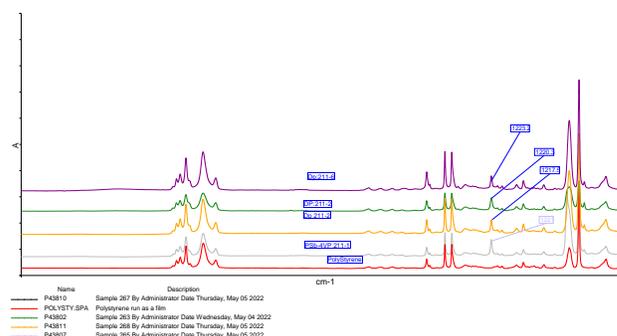
**SEC elugram of the Polymer:**



**DSC thermogram for the PS block:**



**FTIR spectrum of Samples:**



**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.