

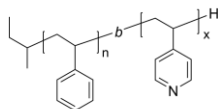
Sample Name:

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

Bearing different degree of 4VP units

Sample #: **P43802-S4VP**

Structure:



Composition:

$M_n \times 10^3$ S-b-4VP	PDI
22.0-b-0.21	1.02

Dp of each unit 211-b-2
Tg for PS block: 104 °C

Synthesis Procedure:

Polymers were prepared by living anionic polymerization in THF at -78°C in the presence of LiCl as an additive.

Characterization:

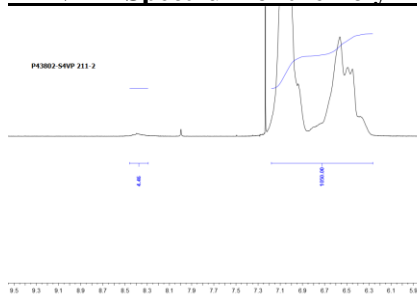
The product was characterized by size exclusion chromatography (SEC) and ^1H NMR and FTIR data analysis.

Purification:

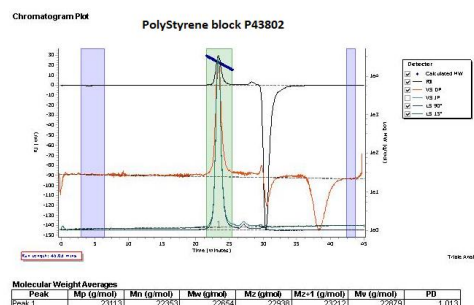
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in 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 CHCl_3 was dried over anhydrous sodium sulfate.
4. Solution filtered and then passed through a column packed with basic Al_2O_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°C .

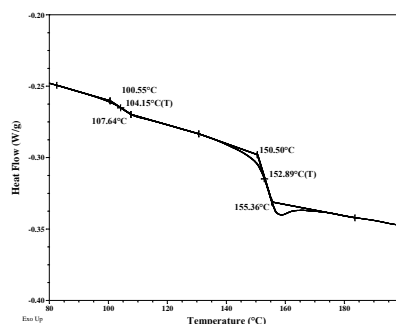
^1H NMR Spectrum of the Polymer:



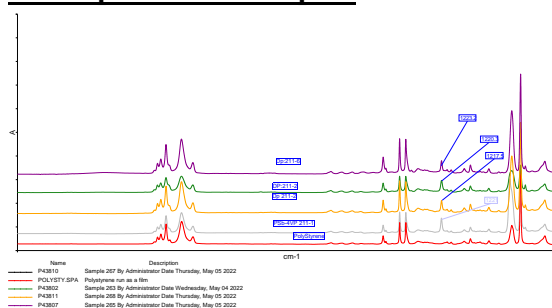
SEC elugram of the PolyStyrene block:



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.