

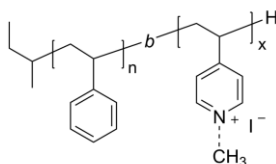
Sample Name: Poly(styrene)-b-oligo(4-vinyl pyridine, quaternized with methyl iodide)

Bearing different degree of 4VP units

Synonym: Polystyrene-b-oligo(N-methyl 4-vinyl pyridinium iodide)

Sample #: P43810A-S4VPQ

Structure:



Composition:

Mn $\times 10^3$	PDI
S-b-4VP	
22.0-b-0.29	1.01

Dp of each unit 211-b-1
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.

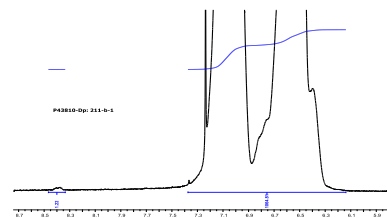
Purification:

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

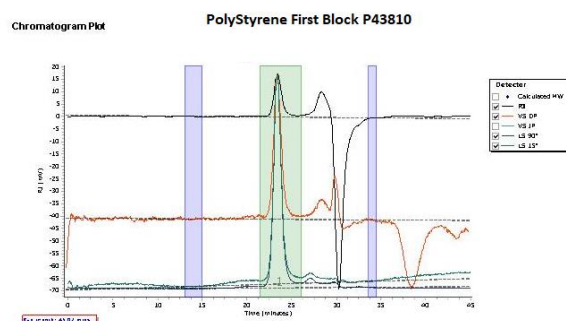
1. Dissolved the polymer in CHCl_3 and wash with de-ionized distilled water to remove the any soluble organic catalyst side product.
2. Polymer extracted from water with chloroform.
3. Polymer solution in CHCl_3 was dried over anhydrous sodium sulfate.
4. Solution filtered and then passed through a column 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

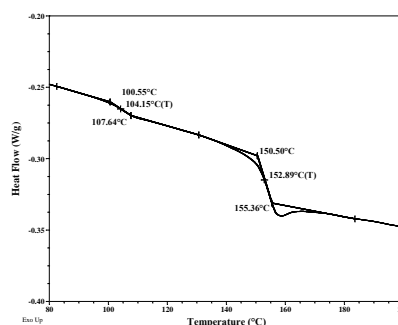


SEC elugram of the Polymer:

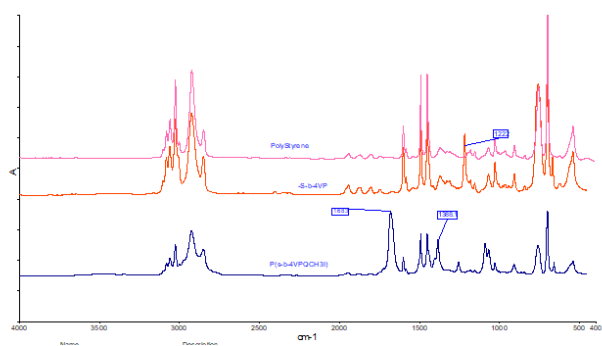
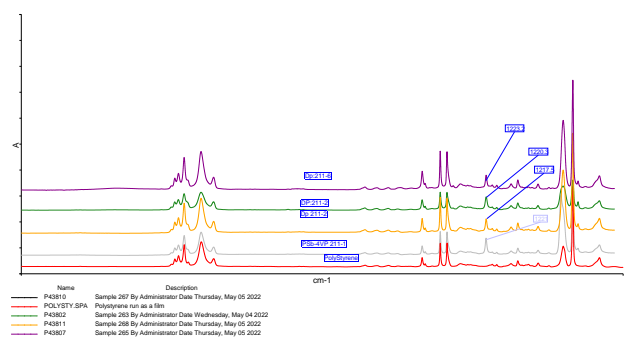


Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mz (g/mol)	PDI
Peak 1	22773	21738	22242	22646	23018	22897	1.021

DSC thermogram for the PS block:



FTIR spectrum 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.