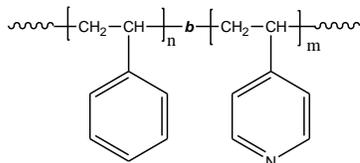


Sample Name: Poly(styrene-b-4-vinyl pyridine)

Sample #: P43201-S4VP

Structure:



Composition:

$M_n \times 10^3$ S-b-4VP	PDI
127.0-b-32.0	1.04

T_g for PS block: 104 °C

T_g 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 ^1H NMR data analysis.

Solubility:

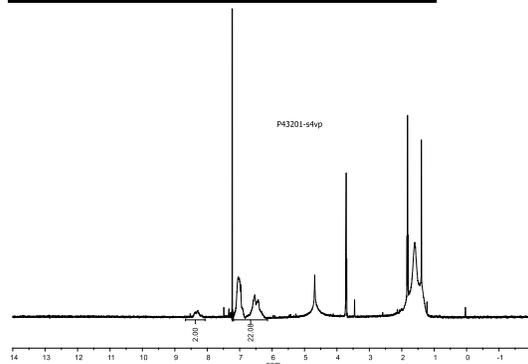
Poly(styrene-b-4 vinylpyridine) is soluble in THF, toluene, and CHCl_3 . The diblock copolymer can also be solubilized in methanol, ethanol depending on its composition. The polymer readily precipitates from hexanes, ether, and water.

Purification:

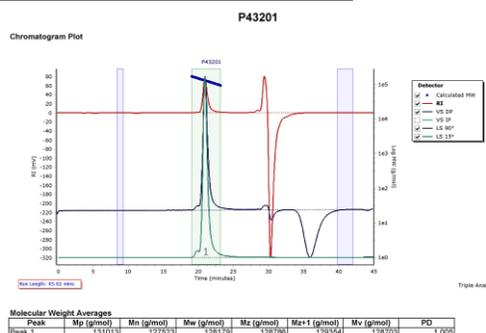
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in CHCl_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 than 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



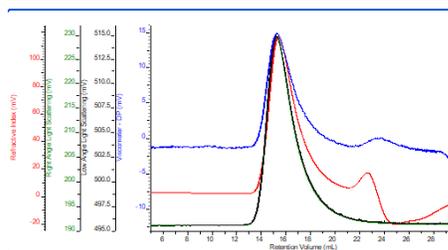
SEC elugram of the PS Block:



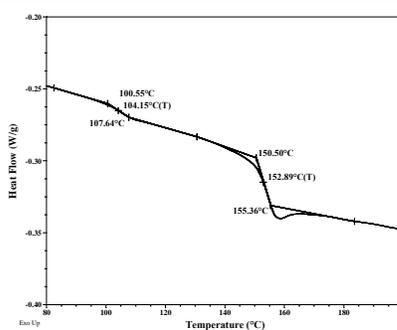
SEC elugram of the Polymer:

Molecular Weight Averages							
Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	131013	127523	128179	128786	129354	128703	1.005

dn/dc: 0.1530
Flow Rate: 0.7000
Solvent: DMF with LiBr
Method: Calibration_2020-11-25_PMMA-85K-0003.vcm



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.