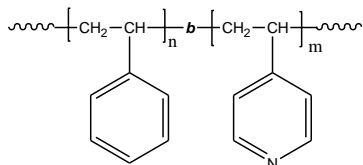


Sample Name: Poly(styrene-b-4-vinyl pyridine)

Sample #: P43554-S4VP

Structure:



Composition:

$M_n \times 10^3$ S-b-4VP	PDI
122.0-b-75.0	1.06

Tg for PS block: 104 °C
Tg 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:

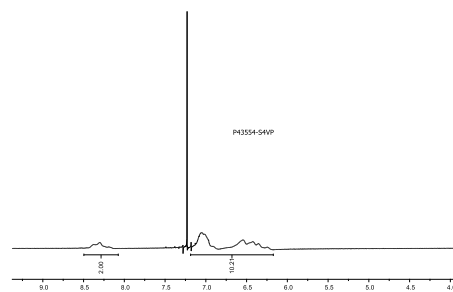
The product was characterized by size exclusion chromatography (SEC) and ^1H NMR data analysis.

Purification:

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

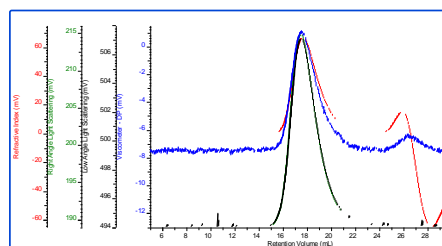
1. Dissolved the polymer in CHCl_3 and wash with de-ionized distilled water to remove the any soluble organic catalyst side product.
2. Polymer extracted from water with chloroform.
3. Polymer solution in CHCl_3 was dried over anhydrous sodium sulfate.
4. Solution filtered and than passed through a column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

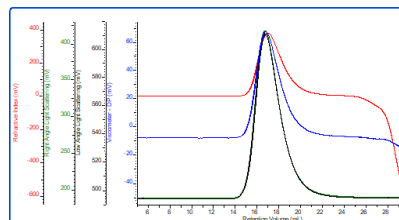
P43554-1	
dn/dc	0.1650
Flow Rate	0.7000
Solvent	DMF with LiBr
Method	Calibration_2020-11-25_PMMA-85K-0003.vcm



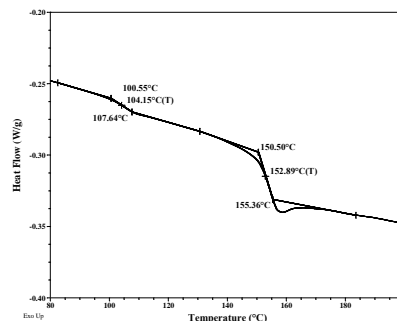
Sample	M_n	M_w	M_p	M_w/M_n
P43554-1_1_2021-11-25	122,001	127,337	121,285	1.044

SEC elugram of the Polymer:

P43554-2	
dn/dc	0.1650
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.