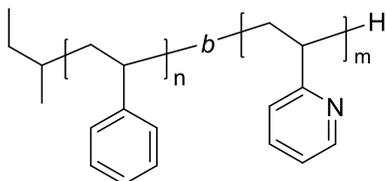


Sample Name:

**Poly(styrene)-*b*-poly(2-vinyl pyridine),**  
diblock copolymer

Sample ID #: **P42602-S2VP**

Structure:



Composition:

$M_n \times 10^3$ (g/mol) [PS- <i>b</i> -P2VP]	$M_w/M_n$
40.0- <i>b</i> -6.5	1.01

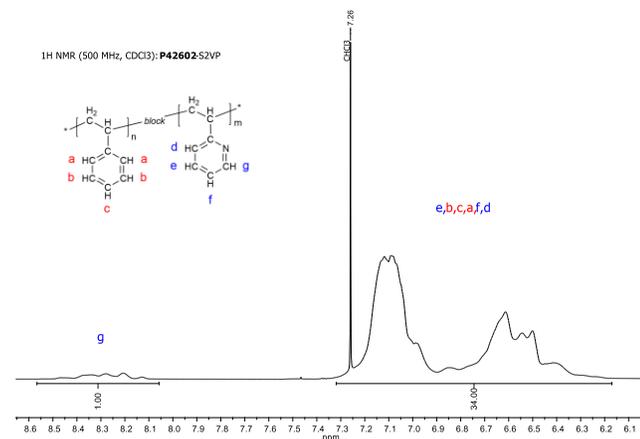
Synthesis Procedure:

Poly(styrene-*b*-2-vinylpyridine) was synthesized by living anionic polymerization in THF at -78°C using sec-BuLi initiator in presence of LiCl.

Characterization:

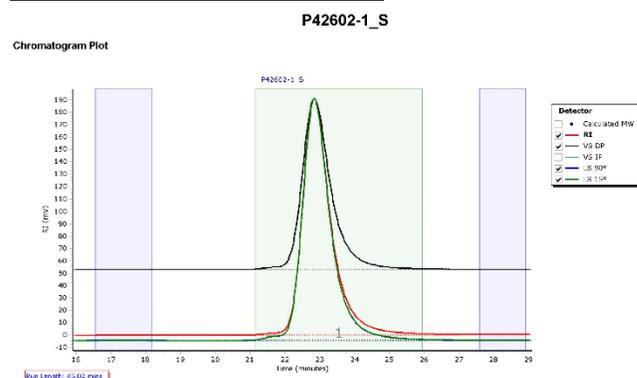
An aliquot of the anionic polystyrene block was terminated before addition of 2VP and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight of the first block. The final diblock copolymer composition was calculated by proton NMR spectroscopy by comparing the peak area of aromatic protons from poly(2-vinylpyridine) and polystyrene, and using SEC data for the first block. Polydispersity index of the final product was determined by SEC.

**<sup>1</sup>H NMR spectrum of the product in chloroform-d:**



PS : P2VP ratio = 86 : 14 mol%; 86 : 14 wt%

**SEC of PS first block in THF:**

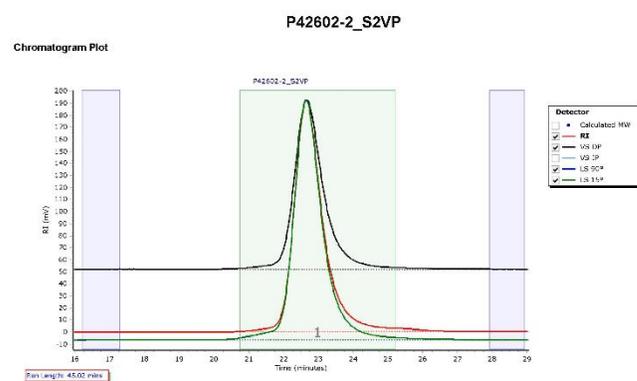


Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	40843	40000	40079	40154	40225	40163	1.002

Processing Parameters  
Entered dn/dc (mL/g) 0.165

Degree of polymerization:  $D_p = 384_{[PS]} - 62_{[P2VP]}$

**SEC of PS-P2VP diblock copolymer in THF:**



Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	47563	46589	46788	46976	47154	46927	1.004

Processing Parameters  
Entered dn/dc (mL/g) 0.182

dn/dc(PS in THF)=0.185; dn/dc(P2VP in THF)=0.167; dn/dc (average for S:2VP=0.86:0.14)=0.182