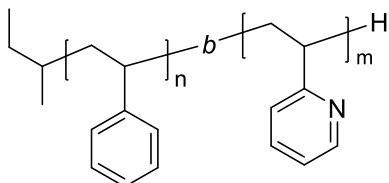


Sample Name:

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

Sample ID #: **P42581-S2VP**

Structure:



Composition:

$M_n \times 10^3$ (g/mol) [PS- <i>b</i> -P2VP]	M_w/M_n
31- <i>b</i> -8	1.01

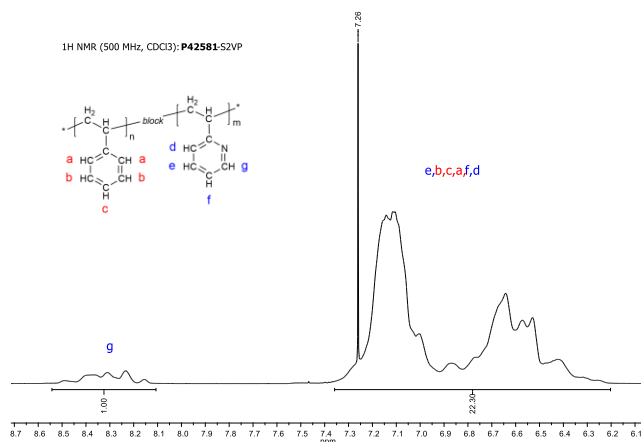
Synthesis Procedure:

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:

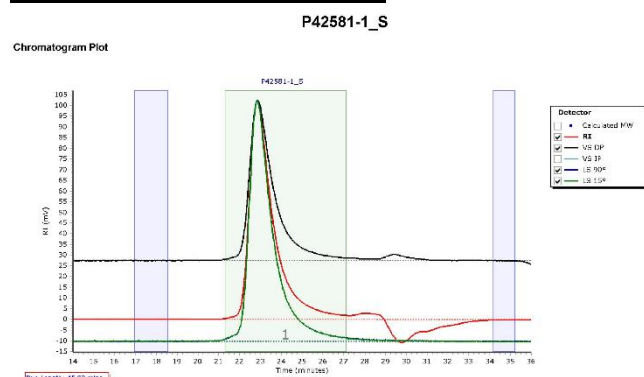
An aliquot of the anionic polystyrene block was terminated before addition of 2VP and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight of the first block. The final diblock copolymer composition was calculated by proton NMR spectroscopy by comparing the peak area of aromatic 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.

¹H NMR spectrum of the product in chloroform-d:



PS : P2VP ratio = 79 : 21 mol%; 79 : 21 wt%

SEC of PS first block in THF:

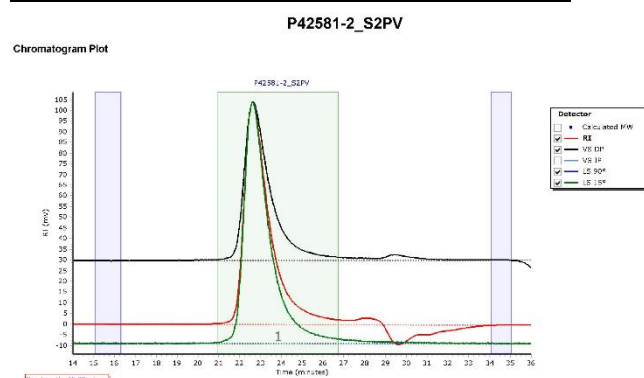


Molecular Weight Averages							
Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	32232	31504	31554	31801	31646	31593	1.002

Processing Parameters
Entered dn/dc (mL/g) 0.185

Degree of polymerization: $D_p = 302_{[PS]} - 80_{[P2VP]}$

SEC of PS-P2VP diblock copolymer in THF:



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	36622	36055	36115	36172	36226	36181	1.002

Processing Parameters
Entered dn/dc (mL/g) 0.181

dn/dc(PS in THF)=0.185; dn/dc(P2VP in THF)=0.167; dn/dc (average for S:2VP=0.79:0.21)=0.181