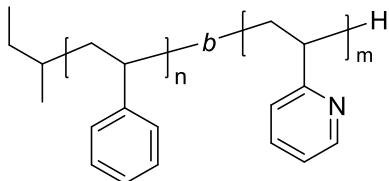


Sample Name:

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

Sample ID #: **P42598-S2VP**

Structure:



Composition:

$M_n \times 10^3$ (g/mol) [PS- <i>b</i> -P2VP]	M_w/M_n
33- <i>b</i> -6	1.01

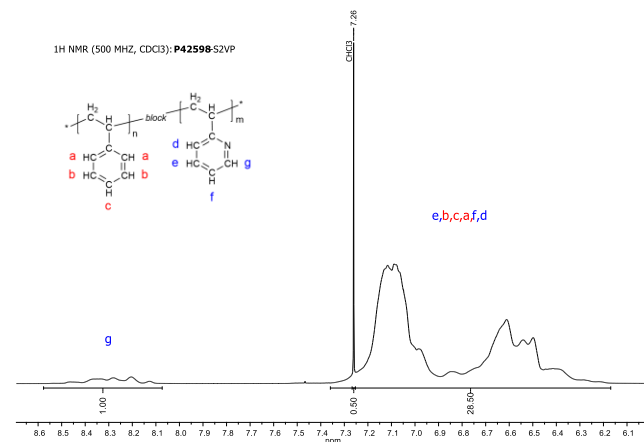
Synthesis Procedure:

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:

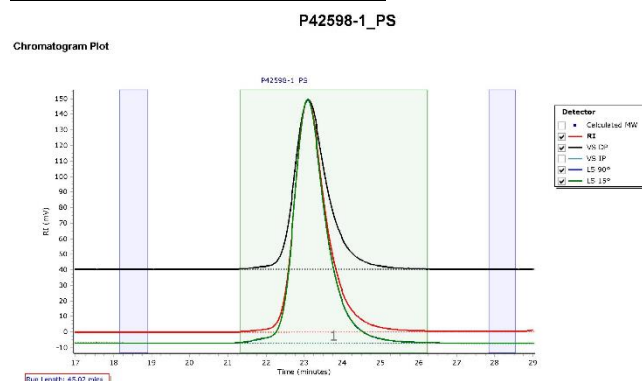
An aliquot of the anionic polystyrene block was terminated before addition of 2VP and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight of the first block. The final diblock copolymer composition was calculated by proton NMR spectroscopy by comparing the peak area of aromatic 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 = 83.3 : 16.7 mol%

SEC of PS first block in THF:

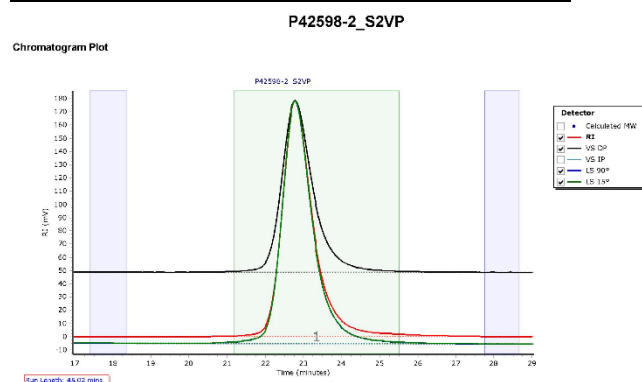


Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	33058	33086	33142	33197	33249	33185	1.002

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

Degree of polymerization: $D_p = 317_{[PS]} - 63_{[P2VP]}$

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	39554	39001	39078	39151	39220	39151	1.002

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=0.83:0.17)=0.182