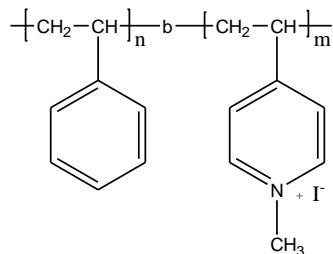


**Sample Name:** Poly(styrene)-b-poly (4-vinyl pyridine, quaternized with methyl iodide)

**Sample #:** P1039-S4VPQ

**Structure:**

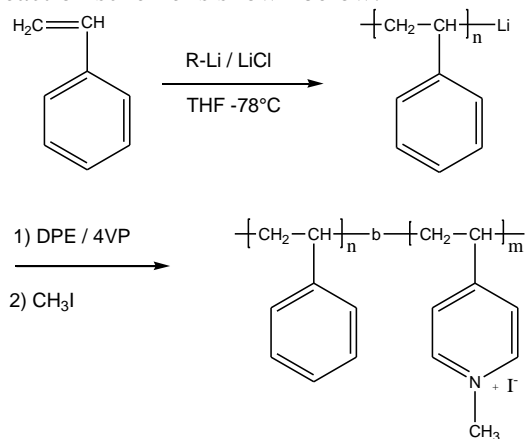


**Composition:**

Mn x 10 <sup>3</sup> PS-b-P4VPQ (k)	PDI
3.3 -b- 11.2	1.07

**Synthesis Procedure:**

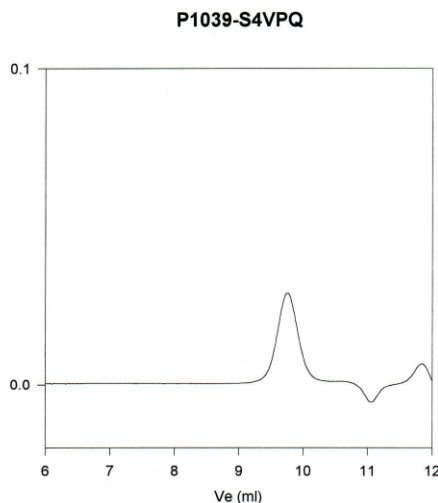
Poly(styrene -b- 4-vinyl pyridinium iodide) is prepared by living anionic polymerization with sequence addition of styrene followed by 4-vinyl pyridine and quaternization by the polymer using methyl iodide. The reaction scheme is shown below:



**Characterization:**

An aliquot of the polystyrene block was terminated before addition of 4-vinyl pyridine and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area of the 4-vinyl pyridine protons at about 8.5 ppm. Block copolymer PDI is determined by SEC.

**SEC of the block copolymer:**



Size Exclusion Chromatography of the P1037-S4VP( Precursor of P1039-S4VPQ):

Polystyrene(3300)-b-Poly(4-vinyl pyridine)(4750),  $M_w/M_n=1.07$

Polystyrene(3300)-b-Poly N-methyl 4-vinyl pyridinium iodide(11200),  $M_w/M_n=1.07$