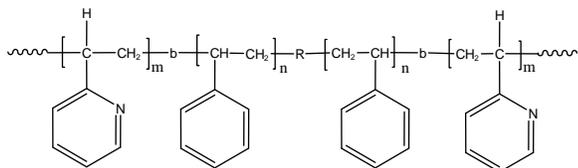


**Sample Name:** Poly(2-vinyl pyridine-b-styrene-b-2-vinyl pyridine)

**Sample #:** P10872P-2VPS2VP (electronic Grade)

**Structure:**



R: dimer or tetramer of alpha methyl styrene

**Composition:**

Mn x 10 <sup>3</sup> 2VP-b-PS-b-2VP	PDI
12.0-b-23.0-b-12.0	1.25
T <sub>g</sub> for PS block: 102°C	

**Synthesis Procedure:**

Poly(2-vinyl pyridine-b-styrene-b-2-vinyl pyridine) is prepared by living anionic polymerization using a bifunctional initiator with sequence addition of styrene followed by 2-vinylpyridine (2VP).

**Characterization:**

The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. THF was an eluent.

**Thermal analysis:**

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T<sub>g</sub>).

**Solubility:**

Poly(2-vinyl pyridine-styrene-b-2-vinyl pyridine) is soluble in DMF, THF, CHCl<sub>3</sub>. The polymer readily precipitates from hexanes and diethyl ether.

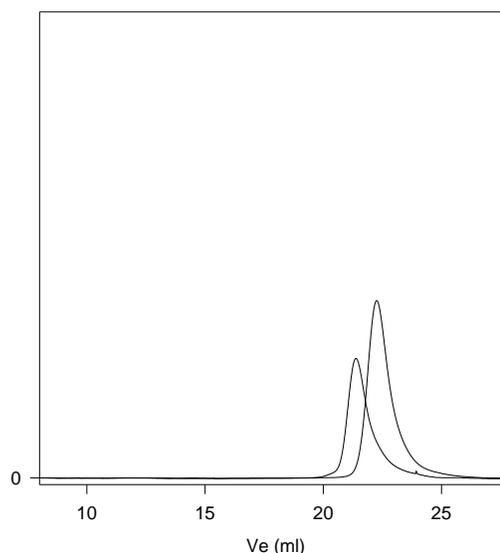
**Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:**

1. Dissolved the polymer in CHCl<sub>3</sub> and washed 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<sub>3</sub> was dried over anhydrous sodium sulfate.

4. Solution filtered and then passed through a column packed with basic Al<sub>2</sub>O<sub>3</sub>.
5. Solution concentrated on rota-evaporator
6. Solution precipitated in cold hexane, redissolved in benzene and freeze dried.
7. Finally, dried under vacuum for 48h at 50°C.

**SEC of the polymer:**

**P10872-2VPS2VP**



Size exclusion chromatography of:

Poly(2 vinyl pyridine-b-Styrene-b-2 vinylpyridine)

— Poly(Styrene), M<sub>n</sub>=23,000, PI=1.20

— Triblock Copolymer P 2VP(12,000)-b-PS(23,000)-b-P2VP(12,000) PI=1.25  
Chemical composition from <sup>1</sup>H NMR and by titration (average value)

**<sup>1</sup>H NMR:**

