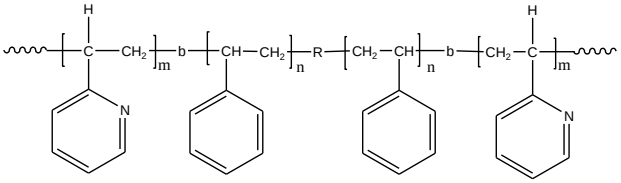
Sample Name: Poly(2-vinyl pyridine-b-styrene-b-2-vinyl pyridine)
Sample #: P10878P-2VPS2VP (electronic Grade)

Structure:



R: dimer or tetramer of alphe methyl styrene

Composition:

Mn x 10^3 2VP-b-PS-b-2VP	PDI
6.7-b-13.0-b-6.7	1.26
T_g 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.

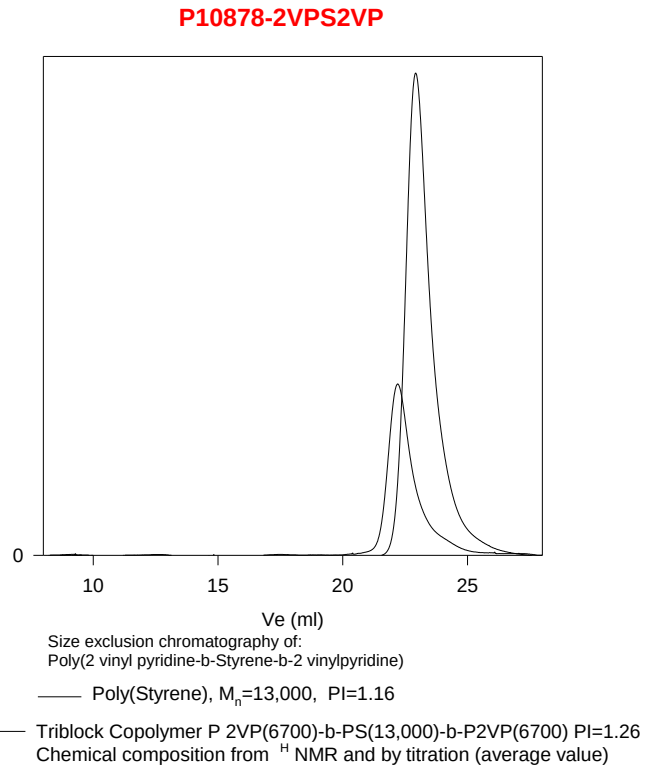
Thermal analysis:
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min.The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:
Poly(2-vinyl pyridine-styrene-b-2-vinyl pyridine) is soluble in DMF,THF, $CHCl_3$. 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 $CHCl_3$ 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 $CHCl_3$ was dried over anhydrous sodium sulfate.
4. Solution filtered and then passed through a column packed with basic Al_2O_3 .
5. Solution concentrated on rota-evaporator
6. Solution precipitated in cold hexane and redissolved in benzene and freeze dried.
7. Final dried under vacuum for 48h at 50°C.

SEC of the polymer:



H NMR: