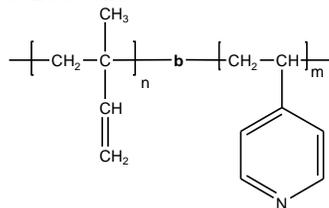


SEC profile of the block copolymer  
P18244-IP4Vp in DMF at 60 °C.

**Sample Name:** Poly(1,2-isoprene-b-4-vinyl pyridine)

**Sample #:** P18244A-IP4VP

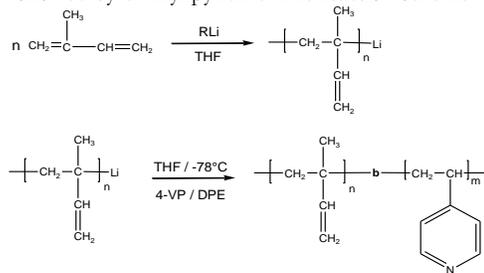
**Structure:**



**Composition:**

|                               |                                   |
|-------------------------------|-----------------------------------|
| $M_n \times 10^3$<br>Ip-b-4VP | $M_w/M_n$ (PDI)                   |
| 9.0-b-13.0                    | 1.10                              |
| $T_g$ for Ip block: -03°C     | $T_g$ for 4VP block: Not distinct |

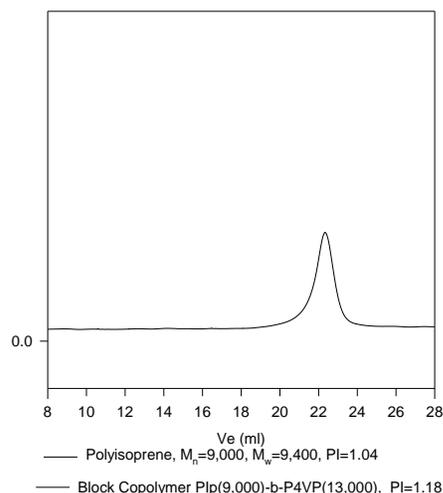
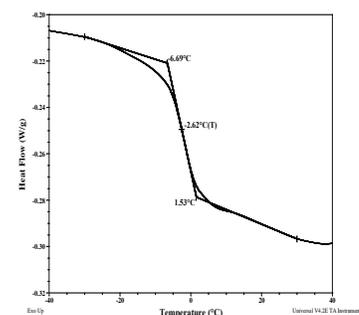
**Synthesis Procedure:** Poly(1,2-isoprene-b-4-vinyl pyridine) is prepared by living anionic polymerization with sequence addition of isoprene followed by 4-vinyl pyridine. The reaction scheme is shown below:



**Characterization:** An aliquot of the anionic poly(1,2-isoprene) block was terminated before addition of 4VP and analyzed by size exclusion chromatography (SEC) in DMF at 60 °C 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 vinylic isoprene proton at about 5.1 ppm with 4-vinyl pyridine protons at 8.5 ppm. Block copolymer PDI is determined by SEC. Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 15°C/min. The inflection glass transition temperature ( $T_g$ ) of the sample has been considered.

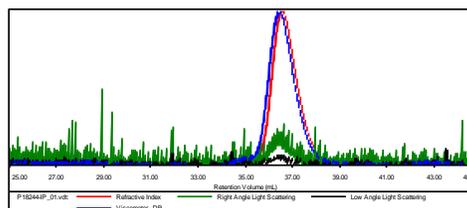
**Solubility:**

Poly(1,2-isoprene-b-4-vinyl pyridine) is soluble in THF, chloroform and toluene.



**Sample ID: P18244-IP**

|                       |                         |
|-----------------------|-------------------------|
| Concentration (mg/mL) | 3.1494                  |
| Sample dn/dc (mL/g)   | 0.1250                  |
| Method File           | PS80K-OCT-2013-0003.vcm |
| Column Set            | 3x PL 1113-6300         |
| System                | System 1                |



| Sample           | $M_n$ | $M_w$  | $M_p$  | $M_w/M_n$ | IV     |
|------------------|-------|--------|--------|-----------|--------|
| P18244-IP_01.vcl | 9,134 | 11,300 | 10,141 | 1.237     | 0.2234 |

