

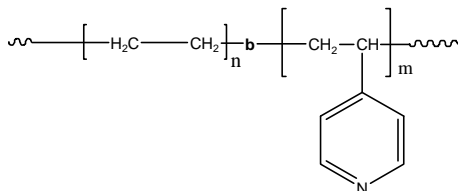
Sample Name:

**Poly(Ethylene-b-4-vinyl pyridine)**

Sample #: **P18947A-E4VP**

Lot # P78-E4VP was used as precursor to convert into poly(ethylene-b-4VP) by hydrogenation

Structure:



Composition:

Mn x 10 <sup>3</sup> Bd-b-4VP	Mw/Mn (PDI)
203.0-b-26.0	1.07
T <sub>g</sub> for Bd block:	-72 °C
T <sub>g</sub> for 4VP block:	83 °C

**Synthesis procedure:**

Poly(1,4-butadiene-b-4-vinyl pyridine) was prepared by living anionic polymerization with sequence addition of butadiene followed by 4-vinyl pyridine. It was hydrogenated under 400 psi in presence of catalyst.

**Solubility:** The polymer is soluble in a mixture of xylene-dichlorobenzene at 80°C after prolonged stirring.

**Characterization:**

By SEC and by titration: to determine composition of P4VP block. To estimate P4VP contents: by titration (Note: <sup>1</sup>H NMR in CDCl<sub>3</sub> gives lower value for of P4VP than that obtained by titration).

**Thermal Analysis:**

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T<sub>g</sub>) of the sample has been considered.

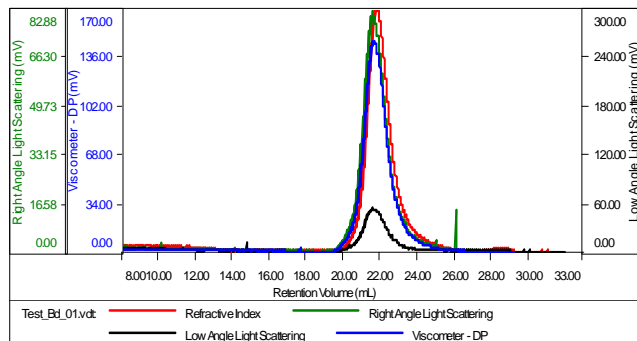
**Solubility:**

Poly(1,4-butadiene-b-4-vinyl pyridine) is soluble in THF, chloroform and toluene. The polymer is insoluble in DMF.

**SEC elugram of polybutadiene:**

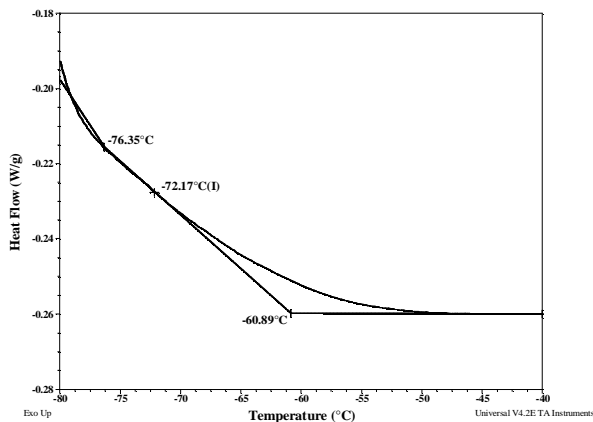
Sample ID: P18947-Bd first block

Concentration (mg/mL)	2.7217
Sample dn/dc (mL/g)	0.1190
Method File	PS80K-1028-2014-0000.vom
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
Test_Bd_01.vdt	219,610	235,396	225,209	1.072	1.8887

**DSC thermogram for PBd block:**



**DSC thermogram for P4VP block:**

