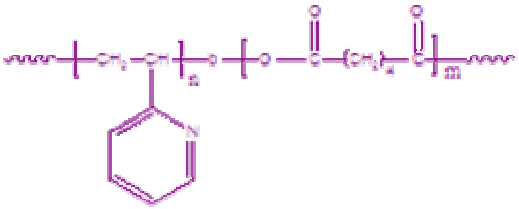
Sample Name:
Poly(2-vinyl pyridine -b- adipic anhydride)

Sample #: P4100-2VPAAnh

Structure:



Composition:

Mn × 10^3 2VP-b-AAnh	PDI
3.0-b-14.0	-
T_g (^oC) for 2VP block: Not distinct	T_m & T_c for AAnh block: 150 & 138^oC; T_g : Not distinct

Synthesis Procedure:

Poly(2-vinyl pyridine -b- adipic anhydride) is prepared by living anionic polymerization of 2-vinyl pyridine and coordination polymerization of adipic anhydride.

Characterization:

An aliquot of the anionic poly(2-vinyl pyridine) block was terminated before addition of adipic anhydride and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ^{1}H-NMR spectroscopy by comparing the peak area of the 2-vinyl pyridine protons with the adipic anhydride protons.

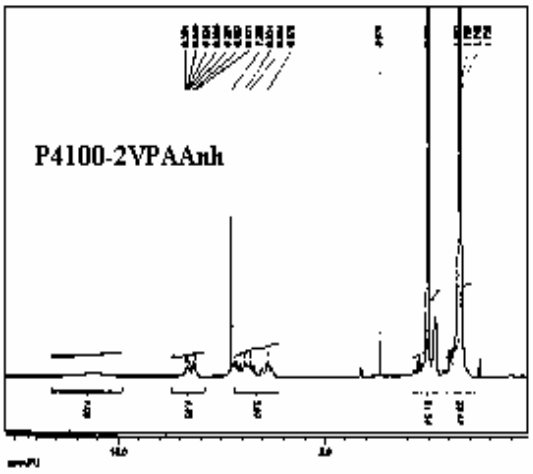
Thermal analysis of the sample:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10^{o}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). The melting temperature (T_m) was taken as the maximum of the endothermic peak where as the crystallization temperature (T_c) was considered as the minimum of the exothermic peak.

Solubility:

Poly(2-vinyl pyridine -b- adipic anhydride) is soluble in $CHCl_3$, DMF, toluene and precipitated out from cold ethanol, diethyl ether.

^{1}H-NMR Spectrum of the block copolymer:



Melting and crystallization curve for AAnh block: