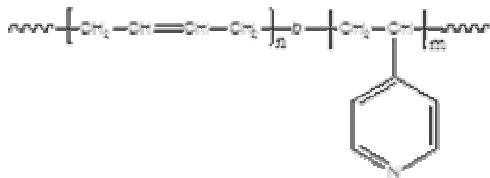


Sample Name: Poly(1,4-butadiene-b-4-vinyl pyridine)

Sample #: P1521-Bd4VP

Structure:



Composition:

$M_n \times 10^3$ Bd-b-4VP	M_w/M_n (PDI)
120.0-b-12.0	1.05
T_g for Bd block: -72°C	T_g for 4VP block: 83°C

Synthesis Procedure:

Poly(1,4-butadiene-b-4-vinyl pyridine) is prepared by living anionic polymerization with sequence addition of butadiene followed by 4-vinyl pyridine.

Characterization:

An aliquot of the anionic poly(1,4-butadiene) block was terminated before addition of methyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from $^1\text{H-NMR}$ spectroscopy by comparing the peak area of the vinylic butadiene proton at about 5.1 ppm with 4-vinyl pyridine protons at 8.5 ppm. Block copolymer PDI is determined by SEC.

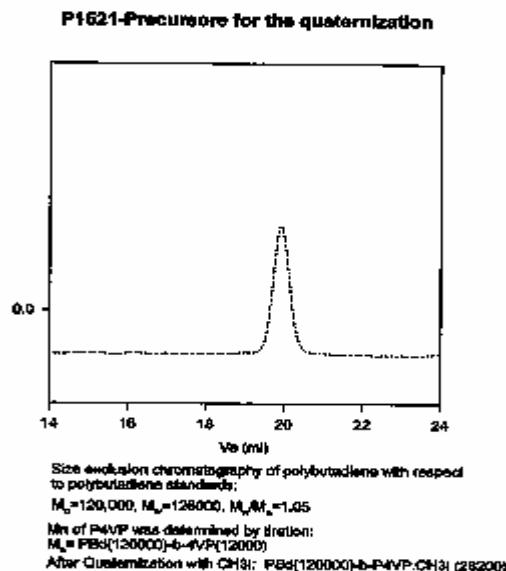
Thermal Analysis:

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of $10^\circ\text{C}/\text{min}$. The inflection glass transition temperature (T_g) of the sample has been considered.

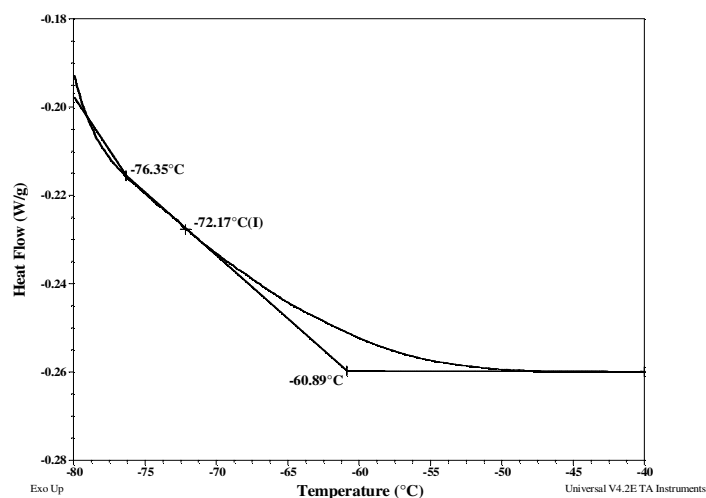
Solubility:

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

SEC profile of the block copolymer



DSC thermogram for Bd block:



Thermogram for 4VP block:

