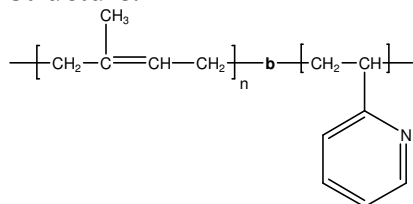


Sample Name: Poly(1,4-isoprene-b-2-vinyl pyridine)

¹H NMR spectrum of the sample

Sample #: P669- Ip2VP

Structure:

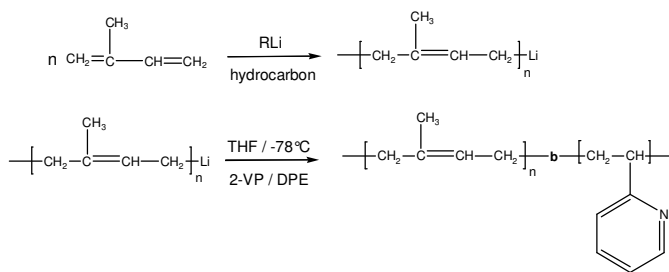


Composition:

Mn × 10 ³ Ip-b-2VP	Mw/Mn (PDI)
19.2-12.2	1.03

Synthesis Procedure:

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

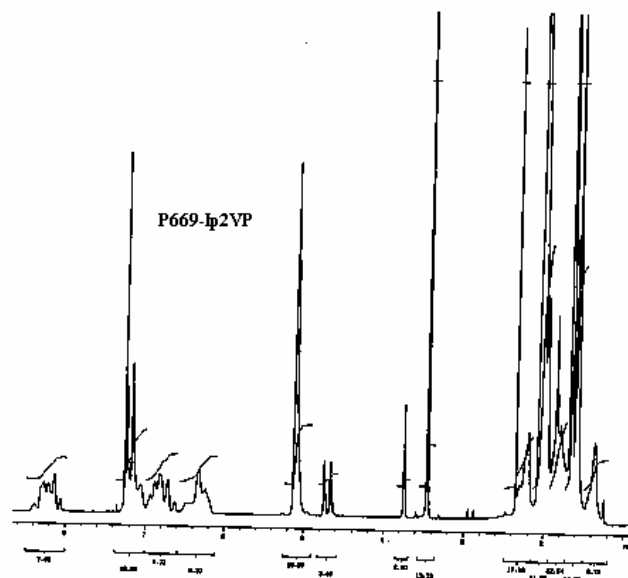


Characterization:

An aliquot of the anionic poly(1,4-isoprene) 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 ¹H-NMR spectroscopy by comparing the peak area of the vinylic isoprene proton at about 5.1 ppm with 2-vinyl pyridine proton at 8.2 ppm. Block copolymer PDI is determined by SEC.

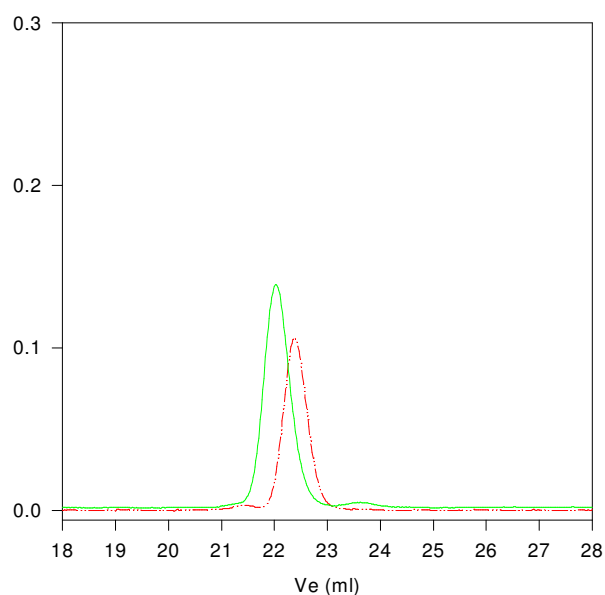
Solubility:

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



SEC profile of the block copolymer

P669- Ip2VP



--- Polyisoprene, M_n=19200, M_w=20200, PI=1.02

— Block Copolymer PIp(19200)-b-P2VP(12200), PI=1.03
Compositions from HNMR

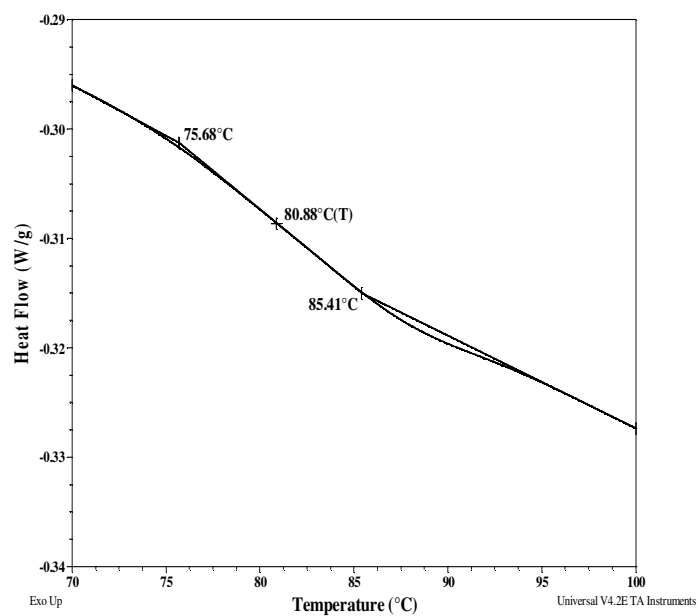
Thermal analysis of the sample# P669-Ip2VP

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).

Thermal analysis results at a glance

Sample	T_g (°C)
Ip block	-58
2VP block	81

Thermogram for 2VP block:



Thermogram for Ip block:

