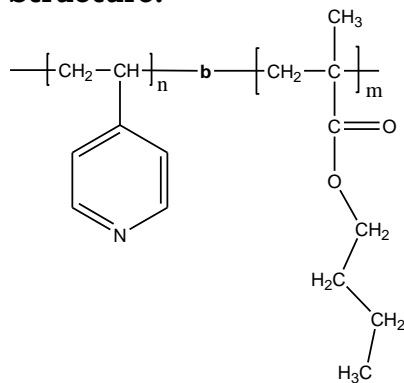


Sample Name: Poly(4-vinyl pyridine-b-n-butyl methyl methacrylate)

Sample #: P10065-4VPnBuMA

Structure:



Composition:

$M_n \times 10^3$ 4VP-b-nBuMA	M_w/M_n (PDI)
75.0-b-65.0	1.20
T_g for nBuMA block: 19 °C	T_g for 4VP block:124 °C

Synthesis Procedure:

By anionic living polymerization

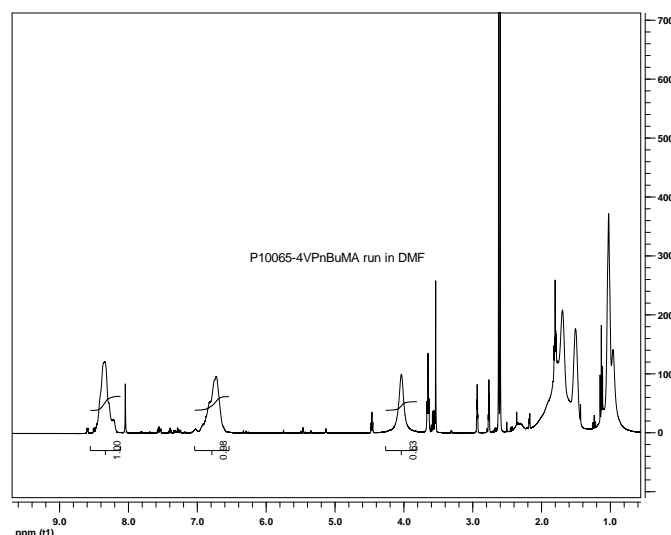
Characterization:

An aliquot of the anionic 4-vinyl pyridine 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 block copolymer composition was then calculated from $^1\text{H-NMR}$ spectroscopy by comparing the peak area of the 4-vinyl pyridine proton peaks at about 8.5 ppm with the methyl methacrylate protons at 3.6 ppm. Copolymer PDI is determined by SEC.

Solubility:

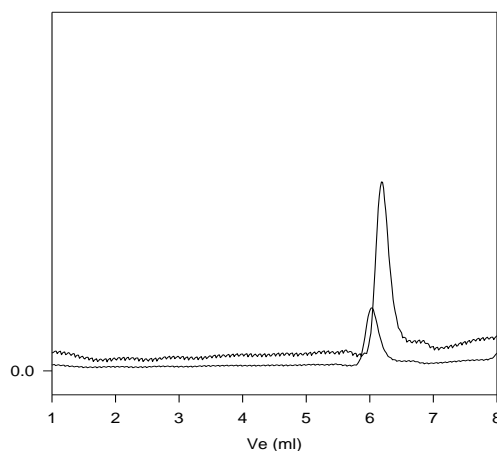
Polymer is soluble in THF, CHCl_3 and dioxane.

$^1\text{H-NMR}$ of the polymer:



SEC of Sample of the block copolymer:

P10065-4VPnBuMA

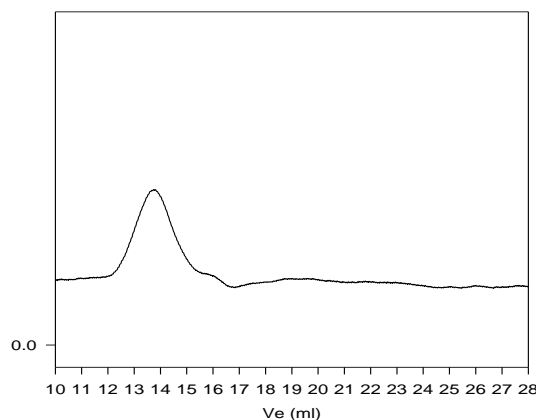


Size Exclusion Chromatography of Poly(4-vinyl pyridine-b-nBuMA)

$M_n=75,000$, $M_w=90,000$, $PI=1.20$

4VP-b-nBuMA: M_n : 75,000-b-65,000 : M_w/M_n 1.20

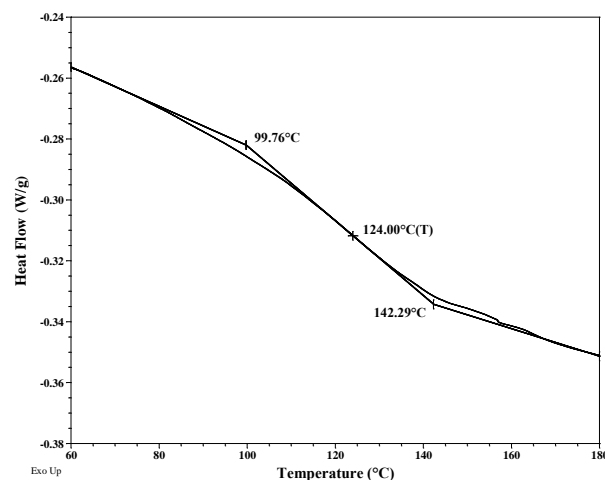
P10065-4VPnBuMA run in THF



Size Exclusion Chromatography of Poly(4-vinyl pyridine-b-nBuMA)

Shows micellization in THF and M_n about 16 million

DSC thermogram for 4VP block:



Reference:

S. K. Varshney, X. F. Zhong and A. Eisenberg
"Anionic Homopolymerization and Block Copolymerization of 4-Vinylpyridine and Its Investigation by High-Temperature Size-Exclusion Chromatography in N-Methyl-2-Pyrrolidinone" CA Vol 118, 12, 102658 Macromolecules, 1993, 26, 701-706.