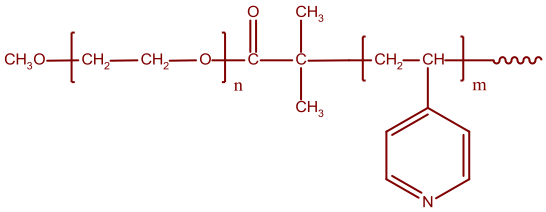
Sample Name:
Poly(ethylene oxide-b-4-vinyl pyridine)

Sample #: **P6521-EO4VP**

Structure:

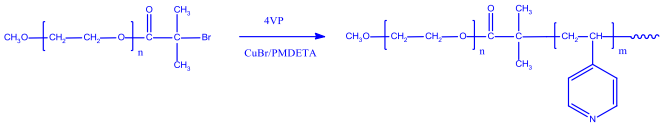


Composition:

Mn x 10^3 PEO-b-P4VP	PDI
2.0-b-5.5	1.20

Synthesis Procedure:

Poly**(**ethylene oxide-b-4-vinyl pyridine) is prepared by ATRP using bromo-terminated poly(ethylene glycol) methyl ether as a macro initiator. In this case the PEO block is end capped with methoxy group. The brief reaction is illustrated as follows:



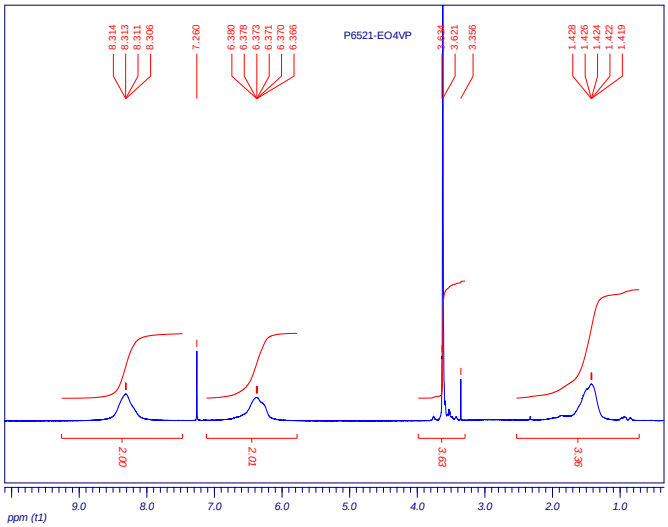
Characterization:

Polymer was analyzed by size exclusion chromatography (SEC) in DMF 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 4-vinyl pyridine proton at about 8.2 ppm with the peak area of the ethylene oxide protons at about 3.6 ppm. Block copolymer PDI is determined by SEC.

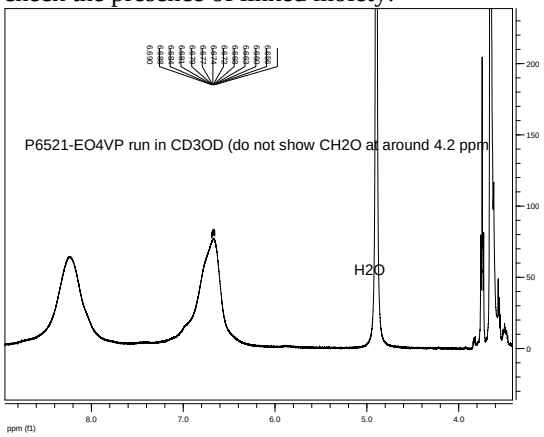
Solubility:

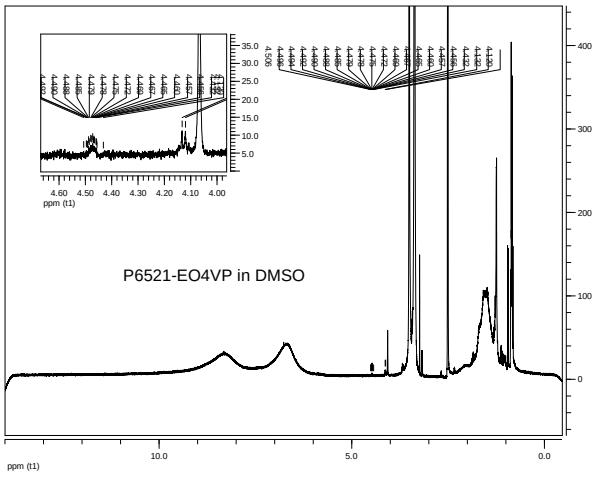
Poly(4-vinyl pyridine -b- ethylene oxide) is soluble in ethanol, DMF, chloroform, and THF, and it is precipitated into ether and hexane.

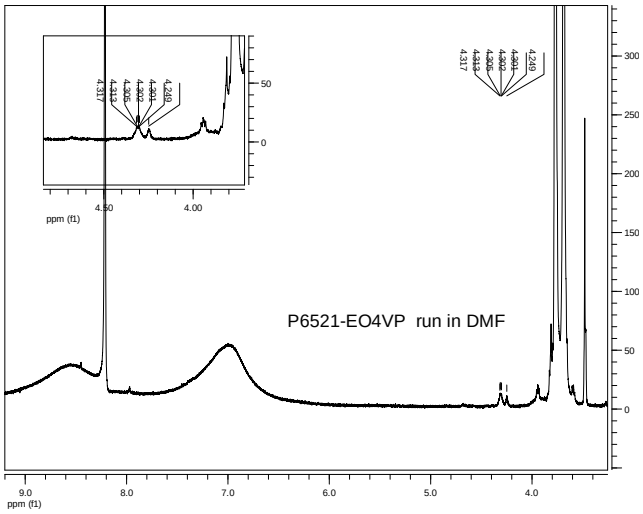
H-NMR Spectrum of the block copolymer:



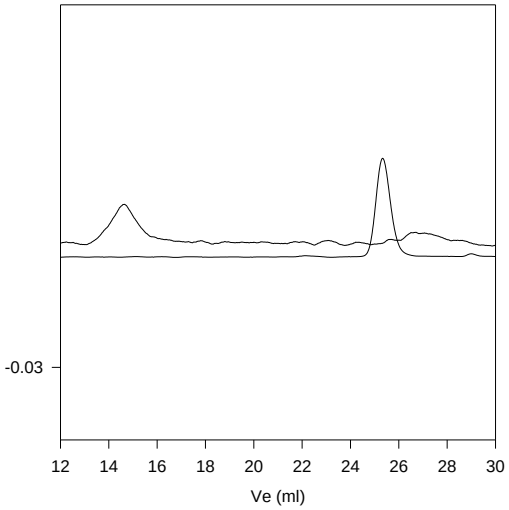
HNMR of the Polymer carried out in different solvent to check the presence of linked moiety:







P6521-4VPEO



Size exclusion chromatography of poly(4-vinylpyridine)-b-poly(ethylene oxide): in THF at 35 0C.

—— Poly(ethylene glycol methyl ether), M_n=2000, M_w=2200, PI=1.05

—— Block Copolymer PEO-b-P4VP: (2000)-b-(5500), PI=1.2 composition from HNMR In THF product exhibit the micellization behavior. THE SEC profile indicate the absence of homoPEG polymer