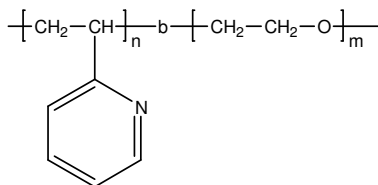


**Sample Name:**

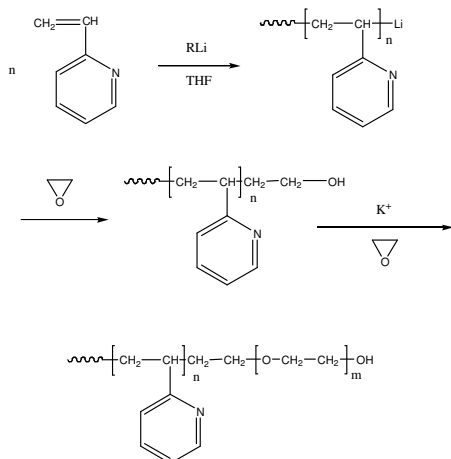
Poly(2-vinyl pyridine -b- ethylene oxide)

**Sample # 19521-2VPEO****Structure:****Composition:**

$M_n \times 10^3$ P2VP-b-PEO	Mw/Mn
2.0–b–6.5	1.11

**Synthesis procedure:**

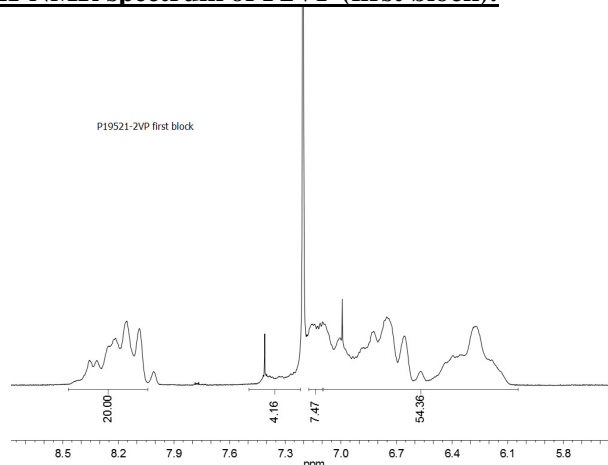
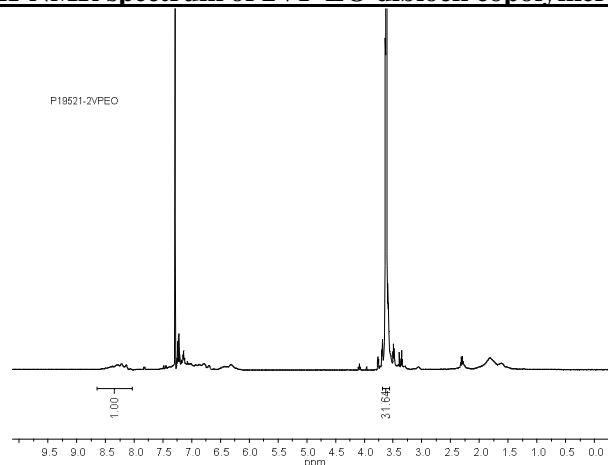
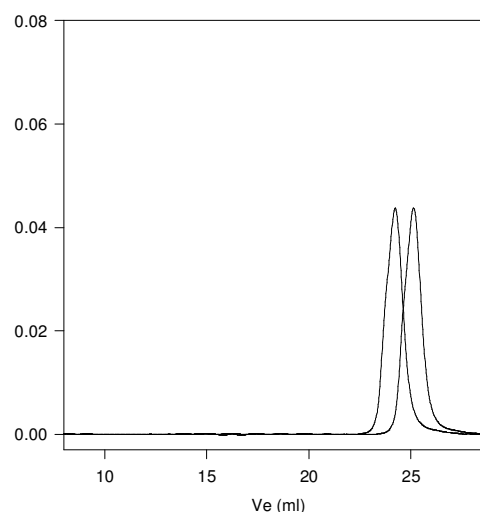
Poly(2-vinyl pyridine -b- ethylene oxide) is prepared by living anionic polymerization of ethylene oxide using potassium salt of hydroxyl terminated poly(2-vinyl pyridine) as a macro-initiator. The reaction scheme is shown below:

**Characterization:**

An aliquot of the hydroxyl terminated poly(2-vinyl pyridine) was 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 2-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(2-vinyl pyridine -b- ethylene oxide) is soluble in THF, chloroform, ethanol, DMF. It precipitates from hexanes.

 **$^1\text{H-NMR}$  spectrum of P2VP (first block):** **$^1\text{H-NMR}$  spectrum of 2VP-EO diblock copolymer:****SEC of the block copolymer:****P19521-2VPEO**

Size exclusion chromatography of poly(2-vinylpyridine)-b-poly(ethylene oxide):

— Block Copolymer P2VP(2,000)-b-PEO(6,500), PI=1.11  
(Composition from  $^1\text{H-NMR}$ )