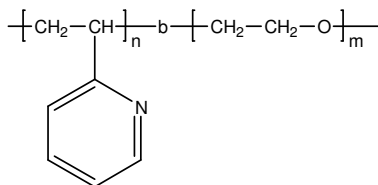


Sample Name:

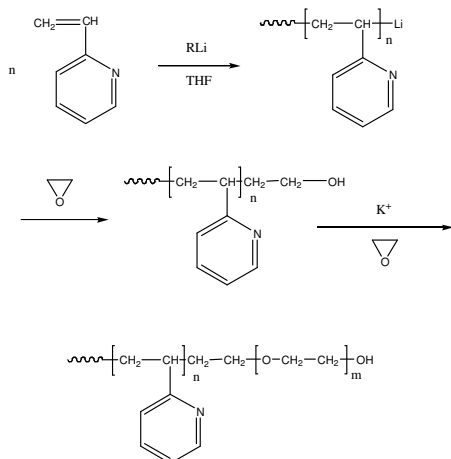
Poly(2-vinyl pyridine -b- ethylene oxide)

Sample # 19520-2VPEO**Structure:****Composition:**

$M_n \times 10^3$ P2VP-b-PEO	Mw/Mn
1.0–b–1.8	1.11

Synthesis procedure:

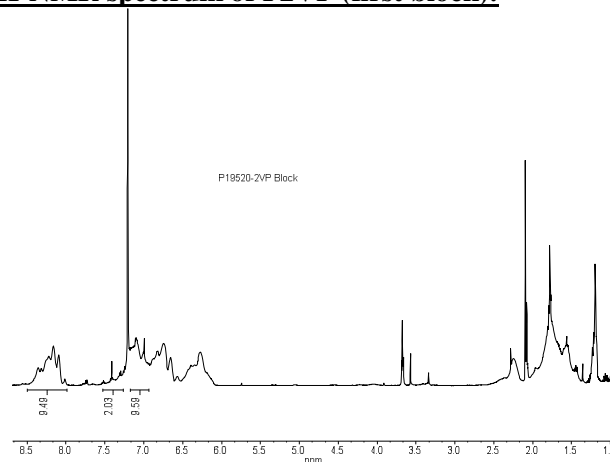
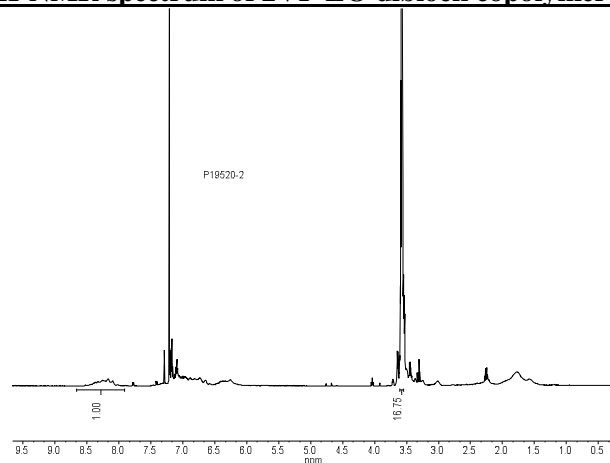
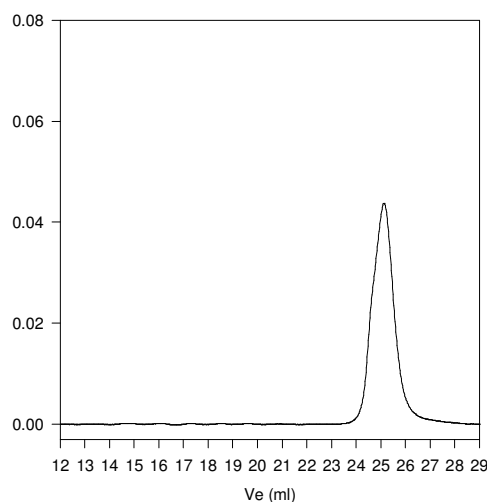
Poly(2-vinyl pyridine -b- ethylene oxide) is prepared by living anionic polymerization of ethylene oxide using potassium salt of hydroxyl terminated poly(2-vinyl pyridine) as a macro-initiator. The reaction scheme is shown below:

**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:****P19520-2VPEO**

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

— Block Copolymer P2VP(1,000)-b-PEO(1,800), PI=1.11
(Composition from $^1\text{H-NMR}$)