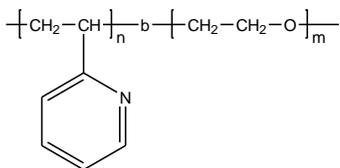


**Sample Name:** Poly(2-vinyl pyridine -b- ethylene oxide)

**Sample #:** P18784-2VPEO

**Structure:**

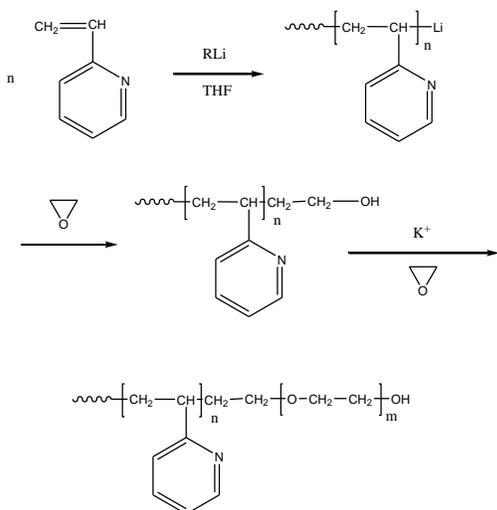


**Composition:**

Mn x 10 <sup>3</sup> P2VP-b-PEO	PDI
2.0-b-4.0	1.15

**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:



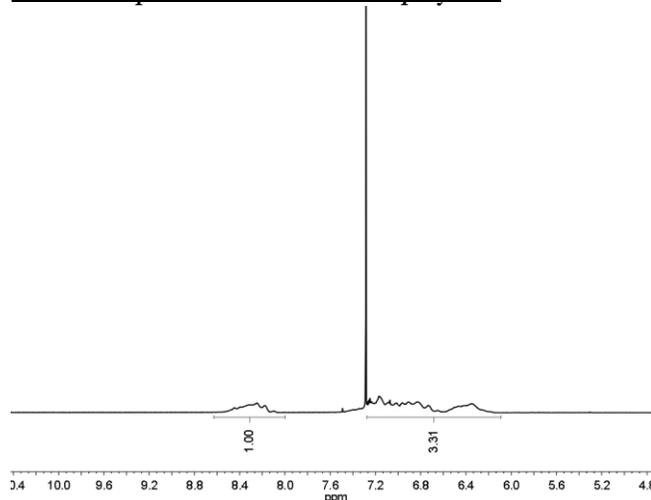
**Characterization:**

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 <sup>1</sup>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:**

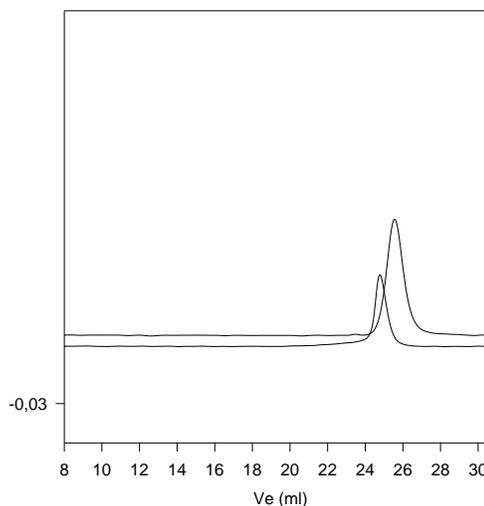
Poly(2-vinyl pyridine -b- ethylene oxide) is soluble in ethanol, DMF, chloroform, and THF. Hexanes are its non-solvent.

**<sup>1</sup>H-NMR Spectrum of the block copolymer:**



**SEC of the block copolymer:**

**P18784-2VPEO**



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

— Poly(2-vinylpyridine), M<sub>n</sub>=2000, M<sub>w</sub>=2700, PI=1.18

— Block Copolymer P2VP(2,000)-b-PEO(4,000), PI=1.15