

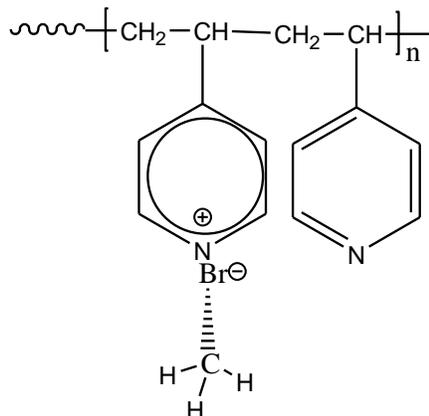
Sample Name:

**Random Copolymer Poly( 4-Vinyl Pyridine-co-4-Vinyl -N-methylpyridinium bromide)**

Sample #: P18443-4VPQ.CH3Br

Degree of Quaternization : 50%

**Structure:**



**Composition:**

Mn × 10 <sup>3</sup>	PDI
130.0	1.24
After Quaternization	
185.0	1.24

**Synthesis Procedure:**

50% quaternization of Poly 4VP was carried out in DMF/THF mixture at 0 oC by adding CH<sub>3</sub>Br (B.P 4 oC) quantitatively to get 50% degree of quaternization. Polymer was washed with cold THF and dried under vacuum at 50 oC.

From the yield of the polymer also reveals 50% quaternization and also clear from its HNMR carried out in methanol:

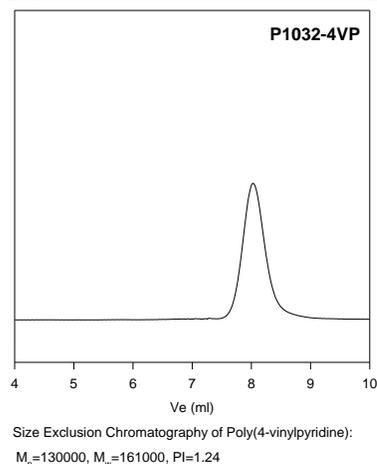
**Characterization:**

The molecular weight and polydispersity index (PDI) of poly(4-vinyl pyridium) are obtained by size exclusion chromatography. The quaternization is confirmed by FTIR with the disappearance of the -N= absorbance peak at 1412 cm<sup>-1</sup> and the degree of quaternization is about 50%.

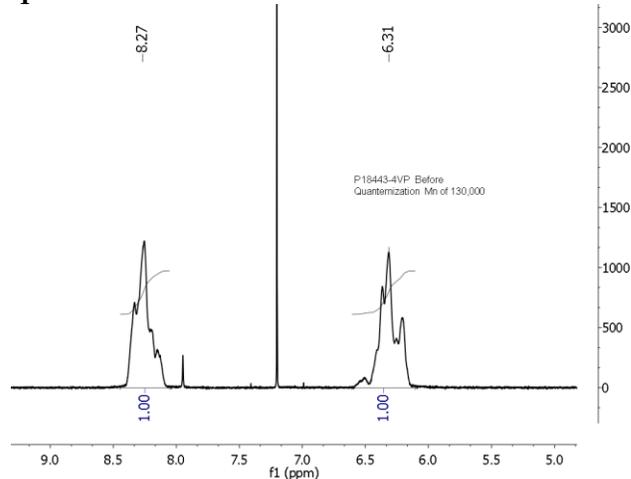
**Solubility:**

Polymer is soluble in methanol, ethanol and precipitate out from hexane, ether.

**SEC of Homopolymer: used for Quaternization with CH<sub>3</sub>Br**



**HNMR of the Polymer before quaternization:**



**HNMR of the Polymer in methanol after quaternization:**

