

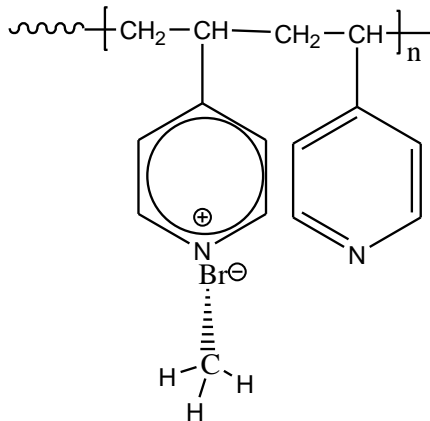
Sample Name:

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

Sample #: P18444-4VPQ.CH3Br

Degree of Quaternization : 75%

Structure:



Composition:

Mn × 10 ³	PDI
35.0	1.4
After Quaternization	
57.0	1.4

Synthesis Procedure:

75% quaternization of Poly 4VP was carried out in DMF/THF mixture at 0 °C by adding CH₃Br (B.P 4 °C) quantitatively to get 50% degree of quaternization. Polymer was washed with cold THF and dried under vacuum at 50 °C.

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

Characterization:

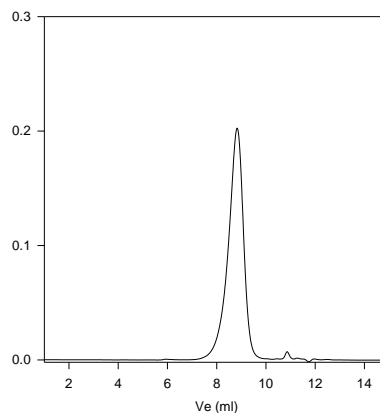
The molecular weight and polydispersity index (PDI) of poly(4-vinyl pyridium) are obtained by size exclusion chromatography. The quaternization is confirmed by FTIR with the disappearance of the -N= absorbance peak at 1412 cm⁻¹ and the degree of quaternization is about 75%.

Solubility:

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

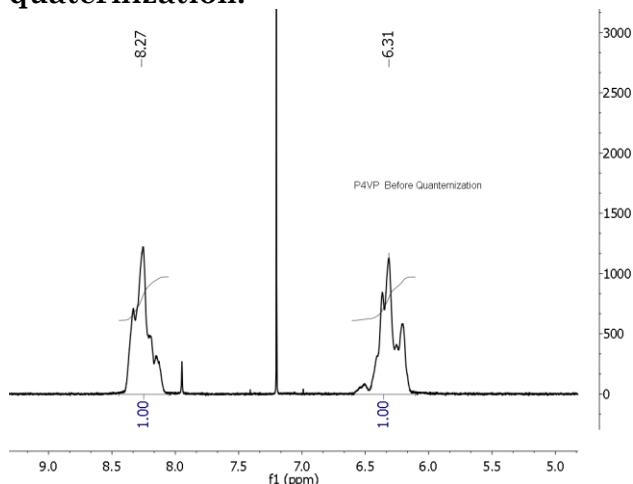
**SEC of Homopolymer: used for
Quaternization with CH₃Br**

P18444- 4VP



Size exclusion chromatography of poly(4-vinylpyridine) in DMF
(Precursor for the P18444-4VPQCH₃Br)
M_n=35000, M_w=49,000, PI=1.4 (Precursor)

**HNMR of the Polymer before
quaternization:**



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

