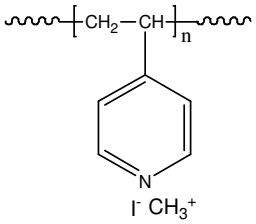
Sample Name: **Poly(4-vinyl N-methyl pyridinium iodide)**

Sample #: **P1548-4VPQ**

Structure:

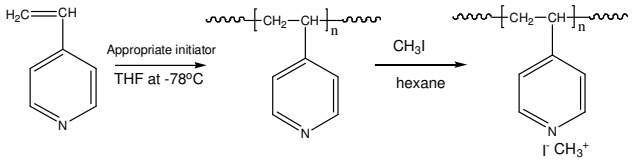


Composition:

$Mn \times 10^3$	PDI
28.0	1.2
T_g (°C)	91

Synthesis Procedure:

Poly(4-vinyl N-methyl pyridinium iodide) is obtained by anionic polymerization of 4-vinyl pyridium followed by stirring with distilled CH_3I in an 8:2 mixture of THF / DMF and precipitation from hexanes. The reaction scheme is illustrated below:



Characterization:

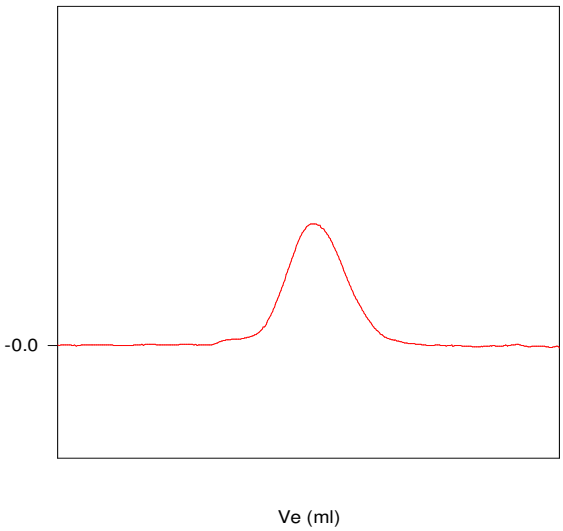
The molecular weight and polydispersity index (PDI) of poly(4-vinyl pyridium) are obtained by size exclusion chromatography. The quaternization is confirmed by FTIR with the disappearance of the -N= absorbance peak at 1412 cm^{-1} and the degree of quaternization is generally over 98%.

Solubility:

Poly(4-vinyl N-methyl pyridinium iodide) is soluble in methanol, ethanol and precipitate out from hexane, ether.

SEC of homopolymer:

P1548-4VP
Precursor for P1548-4VPQ



Size exclusion chromatograph of poly 4 vinylpyridine before quaternization with CH3I
M_n=12000, M_w=14500, PI=1.2
After Quaternization: Mn: 28000 Mw/Mn: 1.2
Degree of quaternization: >98%

DSC thermogram for the polymer: