

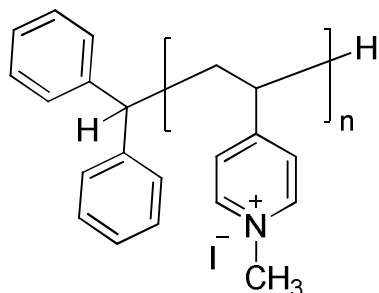
Sample Name:

Poly(4-vinyl N-methyl pyridinium iodide)

Other Name: **Poly(4-vinyl pyridine, quaternized with methyl iodide)**

Sample # **P2370-4VPQ**

Structure:



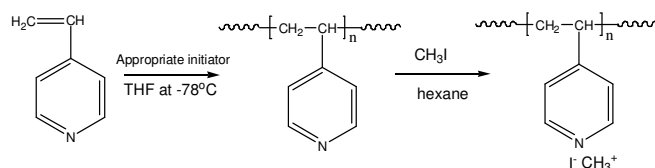
Composition:

$M_n \times 10^3$ (g/mol)	PDI
4.0	1.15

Glass transition temperature:	$T_g = 61^\circ\text{C}$
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Synthesis Procedure:

Poly(4-vinyl N-methyl pyridinium iodide) is obtained by anionic polymerization of 4-vinyl pyridine 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 (M_w/M_n) of poly(4-vinyl pyridine) were obtained by size exclusion chromatography (SEC).

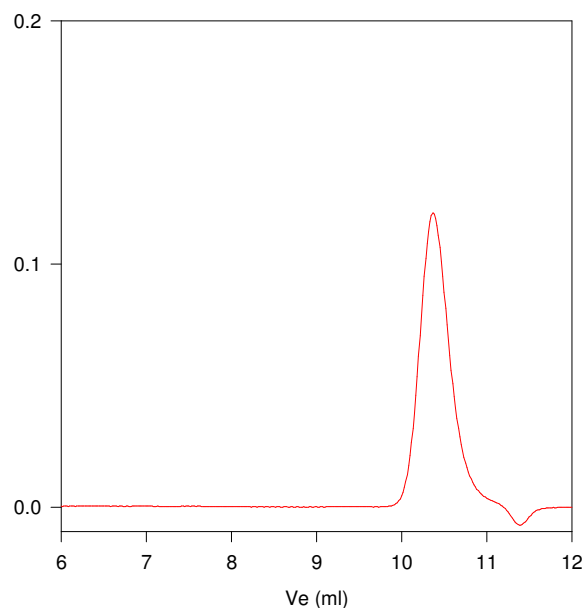
The quaternization with methyl iodide was confirmed by FT-IR spectroscopy (disappearance of $\text{N}=\text{C}$ absorbance peak at 1412 cm^{-1}). The degree of quaternization is over 98%.

Solubility:

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

SEC elugram:

P2370-4VP precursor for P2370-4VPQ



Size Exclusion Chromatography of Poly(4-vinylpyridine)

$M_n=1800$, $M_w=2070$, $PI=1.15$

After Quaternization with CH_3I : $M_n 4000$ M_w/M_n 1.15

DSC thermogram:

