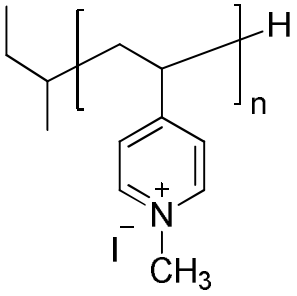
Sample Name:
Poly(4-vinyl N-methyl pyridinium iodide)

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

Sample # **P1566-4VPQ**

Structure:



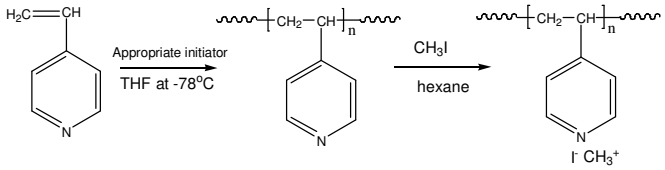
Composition:

Mn × 10^3 (g/mol)	PDI
12.0	1.06

Glass transition temperature:	T_g = 91 °C

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:

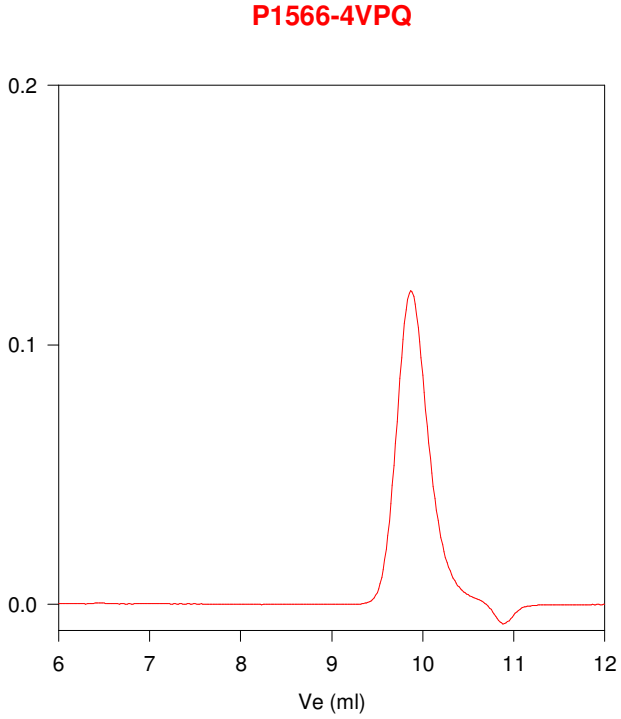
The molecular weight and polydispersity index (M_w/M_n) of poly(4-vinyl pyridine) were obtained by size exclusion chromatography (SEC).

The quaternization with methyl iodide was confirmed by FT-IR spectroscopy (disappearance of -N= 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:



Size Exclusion Chromatography of Poly(4-vinylpyridine)

M_n=5060, M_w=5370, M_z=5660, PI=1.06
(Precursor for the Sample # P4VPQ12K:
After quaternization with CH3I Mn: 12000 Mw/Mn:1.06)

DSC thermogram: