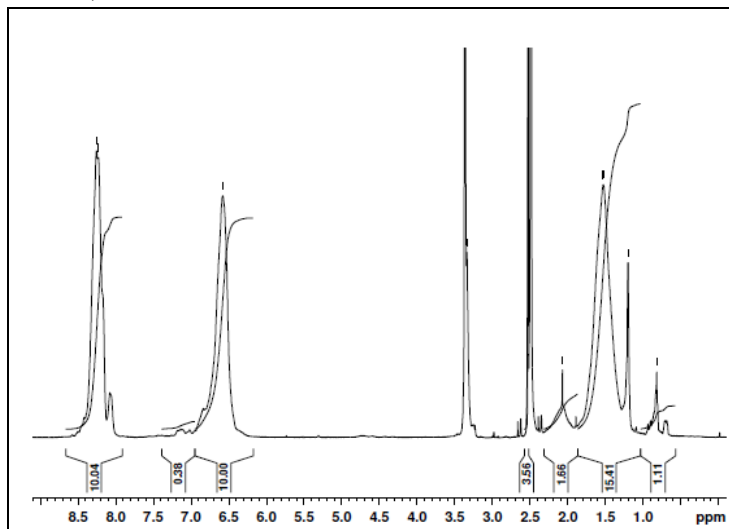


No. AI69

Certificate of Analysis

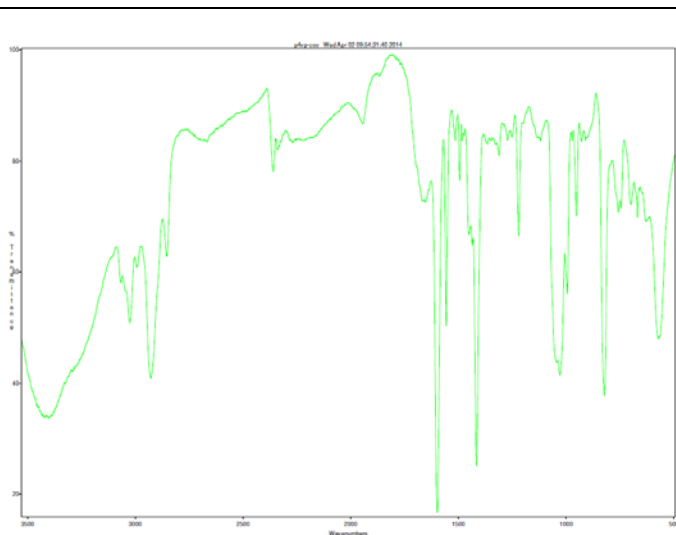
Product Name: Poly(4-vinylpyridine)-carboxylic acid endcap (P4VP-COOH)(IV 0.01-0.1)
(Lot#: 40319JSG)

H-NMR



H-NMR Spectrum of P4VP-COOH copolymers in DMSO-D6
(Varian Inova 500 MHz instrument)

FTIR



Analysis Method: Collected from compressed KBR pellet placed
in Satellite FTIR (Thermo-Mattson) and analyzed
in transmission mode.

- **Viscosity in Ethanol**

Method: 2g/dL solution of P4VP-COOH dissolved in USP grade ethanol and viscosity tested using a Cannon mini-viscometer (C286) in a 30°C water bath. Average of 2 times taken and viscosity compared to literature reported values for pure ethanol at 30°C to obtain inherent viscosity. Data shown as average ± 95% confidence.

P4VP-COOH Inherent Viscosity in Ethanol (30°C)	0.069 ± 0.036
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- **Structure of P4VP-COOH copolymers**

