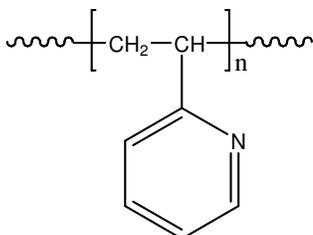


Sample Name: Poly(2-vinyl pyridine)

Sample #: 508P2VP

Structure:

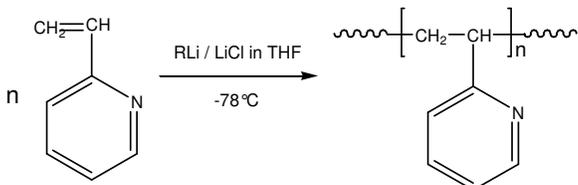


Composition:

$M_n \times 10^3$	PDI
40.6	1.09

Synthesis Procedure:

Poly(2-vinyl pyridine) is obtained by living anionic polymerization of 2-vinyl pyridine using an adduct of Sec. butyllithium and diphenyl ethylene. Polymerization is carried out in THF at -78 oC. Polymerization reaction is terminated using degassed methanol. The reaction scheme is illustrated as follows:



Characterization:

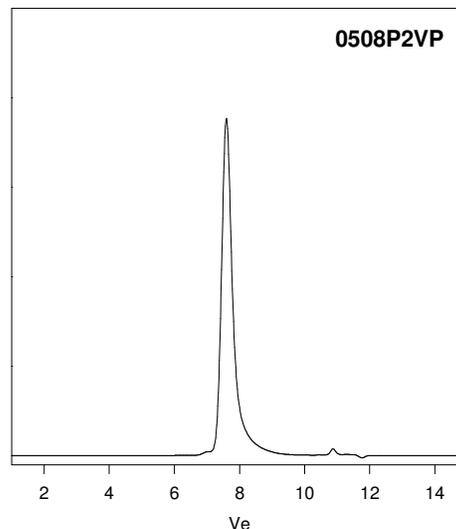
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere. The glass transition temperature (T_g) of the polymer was measured at a scan rate of $10^\circ C/min$ shortly after creating thermal history of the sample.

Solubility:

Poly 2 vinylpyridine is soluble in DMF, THF, toluene, methanol, ethanol and $CHCl_3$. It precipitates from water and hexanes, ether.

SEC elugram of the polymer :



Size exclusion chromatography of poly(2-vinylpyridine) in THF
 $M_n=40600$, $M_w=44300$, $PI=1.09$

Relationship between T_g and M_n of P2VP:

