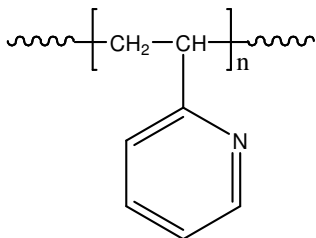


**Sample Name:** Poly(2-vinyl pyridine)

**Sample #:** 408P2VP

**Structure:**

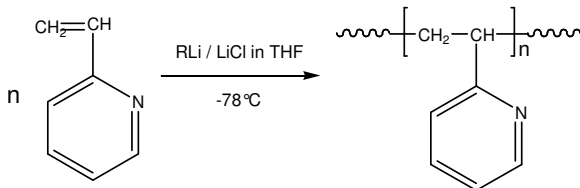


**Composition:**

Mn x 10 <sup>3</sup>	PDI
18.6	1.51

**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 °C. Polymerization reaction is terminated using degassed methanol. The reaction scheme is illustrated as follows:



**Characterization:**

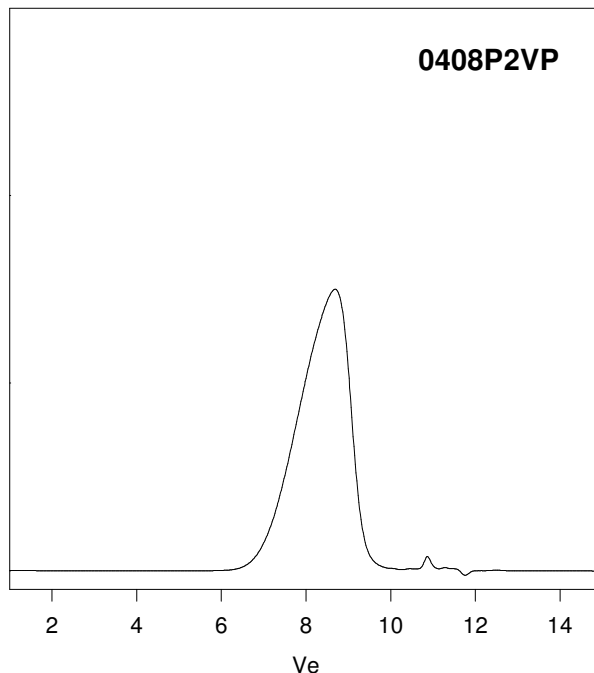
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple 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<sub>g</sub>) of the polymer was measured at a scan rate of 10°C/min shortly after creating thermal history of the sample.

**Solubility:**

Poly 2 vinylpyridine is soluble in DMF, THF, toluene, methanol, ethanol and CHCl<sub>3</sub>. It precipitates from water and hexanes, ether.

**SEC elugram of the polymer:**



Results of size exclusion chromatography analysed in DMF:

$$M_n = 18600, M_w = 28000, PI = 1.51$$

**Relationship between T<sub>g</sub> and Mn of P2VP:**

