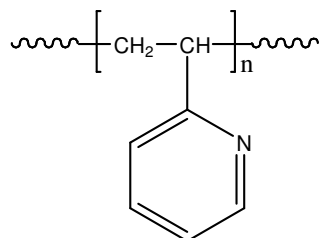


**Sample Name:** Poly(2-vinyl pyridine)

**Sample #:** 508P2VP

**Structure:**

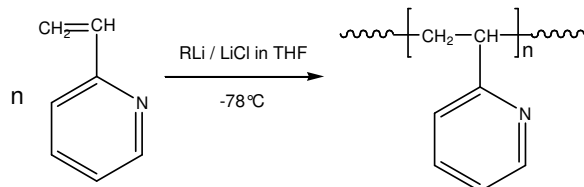


**Composition:**

$M_n \times 10^3$	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  $-78^\circ\text{C}$ . Polymerization reaction is terminated using degassed methanol. The reaction scheme is illustrated as follows:



**Characterization:**

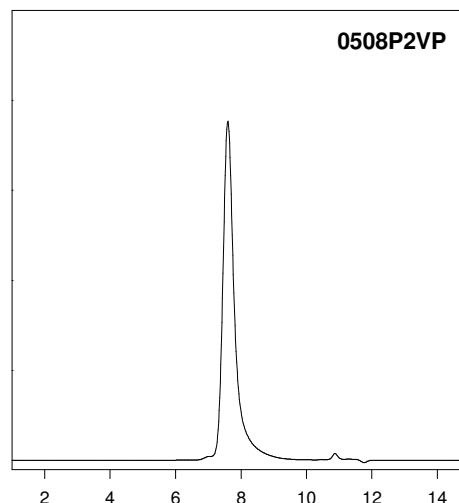
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

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

**Solubility:**

Poly 2 vinylpyridine is soluble in DMF, THF, toluene, methanol, ethanol and  $\text{CHCl}_3$ . 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:**

