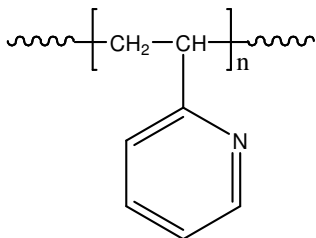


**Sample Name:** Poly(2-vinyl pyridine)

**Sample #:** P10746-2VP

**Structure:**

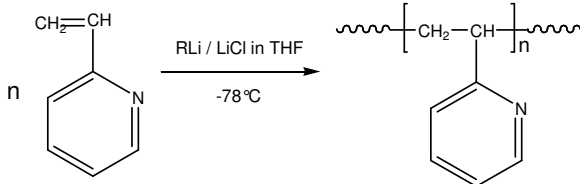


**Composition:**

$M_n \times 10^3$	PDI
546.5	1.18

**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-LiCl. 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.

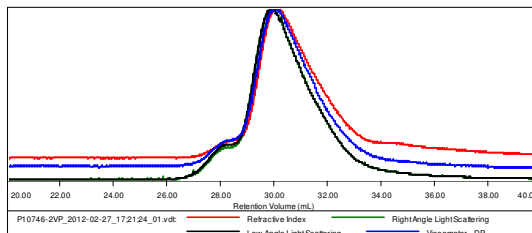
**Solubility:**

Poly 2 vinylpyridine is soluble in DMF, THF, toluene, methanol, ethanol and  $\text{CHCl}_3$ . It precipitates from water and hexanes, ether.

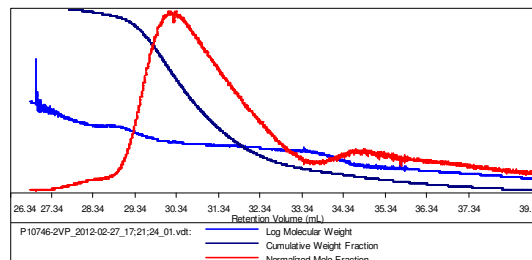
**SEC elugram of the polymer:**

Sample ID: P10746-2VP

Concentration (mg/mL)	3.8699
Sample $dn/dc$ (mL/g)	0.1670
Method File	PS80K-Jan52012-2-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	$M_n$ (Da)	$M_w$ (Da)	$M_p$ (Da)	$M_w/M_n$	IV (dL/g)
P10746-2VP_2012-02-27_17:21:24_01.v	546,441	642,333	668,966	1.175	1.1007



**Relationship between  $T_g$  and  $M_n$  of P2VP:**

