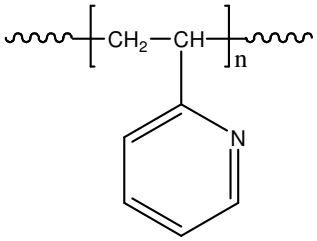
Sample Name: **Poly(2-vinyl pyridine)**

Sample #: **P11412-2VP**

Structure:

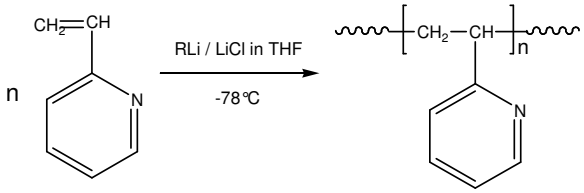


Composition:

Mn x 10^3	PDI
131.5	1.25

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°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 (Tg) of the polymer was measured at a scan rate of 10°C/min shortly after creating thermal history of the sample.

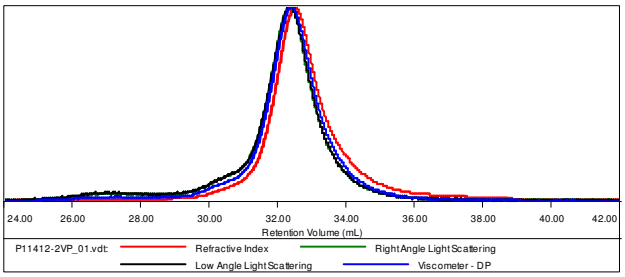
Solubility:

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

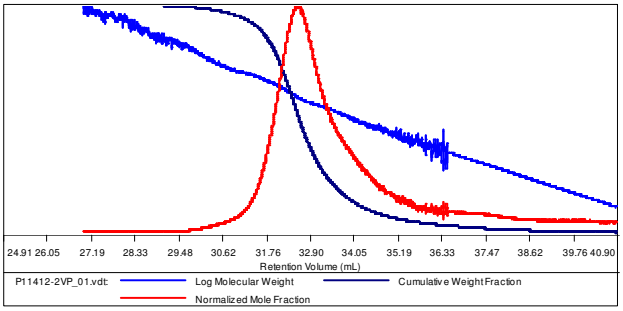
SEC elugram of the polymer:

Sample ID: P11412-2VP

Concentration (mg/mL)	5.4411
Sample dn/dc (mL/g)	0.1670
Method File	PS80K-Mar-2013-0002.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P11412-2VP_01.vdt	131,487	163,827	162,802	1.246	0.5217



Relationship between Tg and Mn of P2VP: