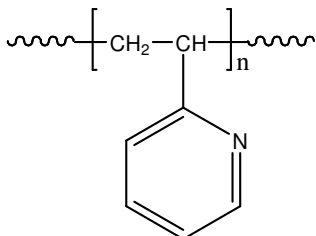


Sample Name: Poly(2-vinyl pyridine)

Sample #: P19141-2VP

Structure:

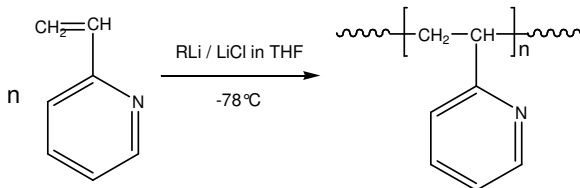


Composition:

Mn x 10 ³	PDI
67.0	1.07

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

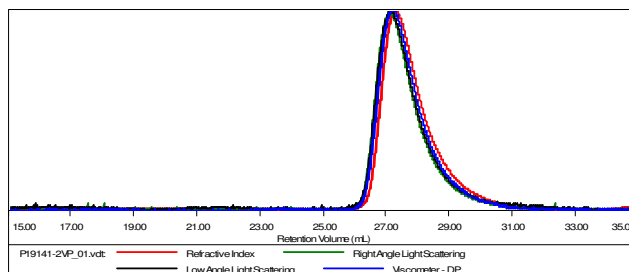
Solubility:

Poly 2 vinylpyridine is soluble in DMF, THF, toluene, methanol, ethanol and CHCl₃. It precipitates from water and hexanes, ether.

SEC elugram of the polymer:

Sample ID: P19141-2VP

Concentration (mg/mL)	7.0966
Sample conc'd: (mL/g)	0.1670
Method File	PS80K-March6-2015-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P19141-2VP_01.vdt	66,826	70,488	71,666	1.055	0.1617

Relationship between T_g and Mn of P2VP:

