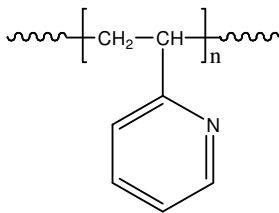


Sample Name: Poly(2-vinyl pyridine)

Sample #: P40009-2VP

**Structure:**

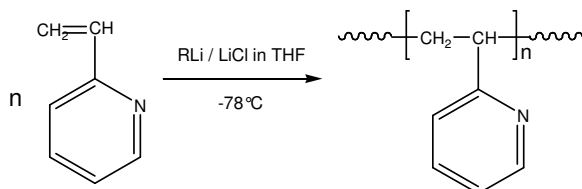


**Composition:**

Mn x 10 <sup>3</sup>	PDI
7.5	1.05

**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 oC. 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.

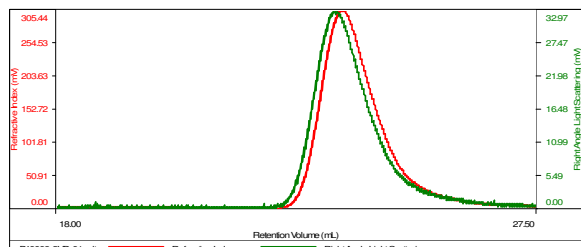
**Solubility:**

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:**  
(Run in THF)

Sample ID: P40009-2VP

Concentration (mg/mL)	7.4245
Sample dn/dc (mL/g)	0.1670
Method File	PS80K-30JUNE2016-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF

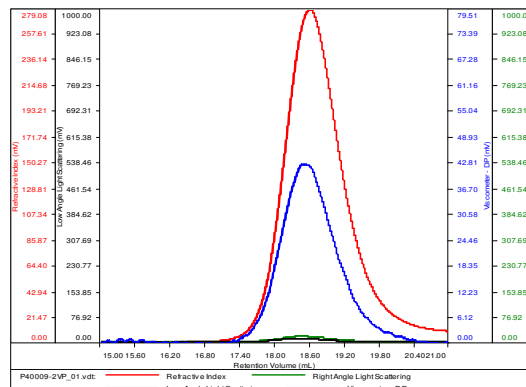


Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P40009-2VP_01.vdt	7,566	7,874	1.041	0.0867	7,612

**SEC elugram of the polymer:**  
(Run in DMF)

P40009-2VP

Conc (mg/mL)	8.0980
dn/dc (mL/g)	0.1530
Method	PS80K-May-25-2016-0000.vcm
Solvent	DMF w 0.023M LiBr
Column	PSS



Sample	Mn	Mw	Mp	Mw/Mn	IV
P40009-2VP_01.vdt	7,667	8,288	7,788	1.081	0.0651

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

