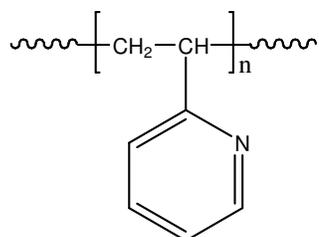


Sample Name: Poly(2-vinyl pyridine)

Sample #: P9772-2VP

Structure:

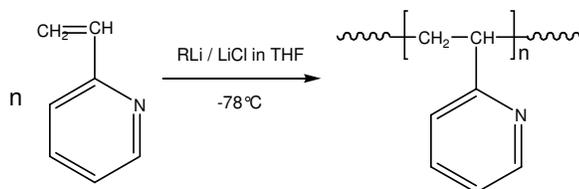


Composition:

$M_n \times 10^3$	PDI
7.3	1.14
5.5 (w.r.t PS reference)	1.14
dn/dc	0.167ml/g

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

$10^\circ\text{C}/\text{min}$ shortly after creating thermal history of the sample.

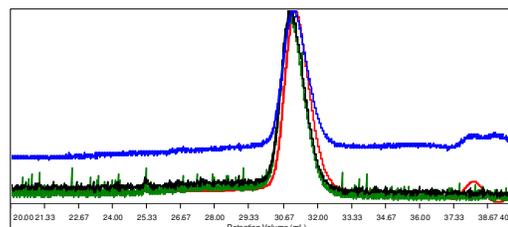
Solubility:

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

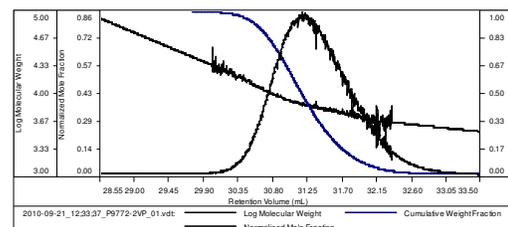
SES elugram of the polymer:

Sample ID: P9772-2VP

Concentration	2.9938
Sample dn/dc	0.1670
Method File	PS99K-0024.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	M_n	M_w	M_z	M_w/M_n	IV	ρ_H
2010-09-21_12:33:37_P9772-2VP_01.vdt	7,377	8,436	11,096	1.144	0.0641	2.63



Relationship between T_g and M_n of P2VP:

