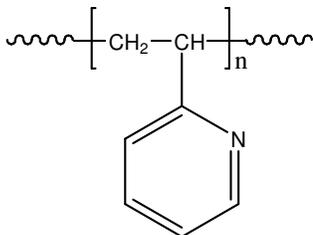


Sample Name: Poly(2-vinyl pyridine)

Sample #: P5308-2VP

Structure:

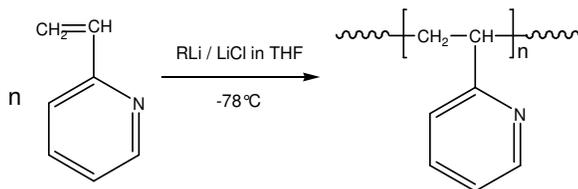


Composition:

$M_n \times 10^3$ (g/mol)	M_w/M_n
5.0	1.5
Glass transition temperature (Tg):	65°C

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.

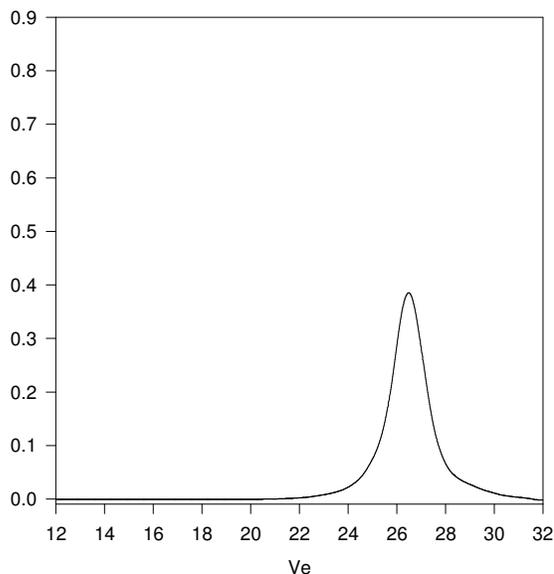
Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere. The glass transition temperature (Tg) of the polymer was measured at a scan rate of $10^\circ\text{C}/\text{min}$ shortly after creating thermal history of the sample.

Solubility:

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

SEC elugram of the polymer :

P5308-2VP



Size exclusion chromatography of poly(2-vinylpyridine) in THF

$M_n=5000$, $M_w=7500$, $PI=1.5$

dn/dc in THF at 35°C : 0.167ml/g

DSC thermogram (2nd heating scan, $10^\circ\text{C}/\text{min}$):

