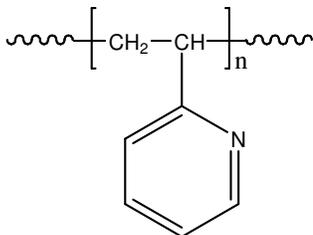


Sample Name: Poly(2-vinyl pyridine)

Sample #: P19143-2VP

Structure:

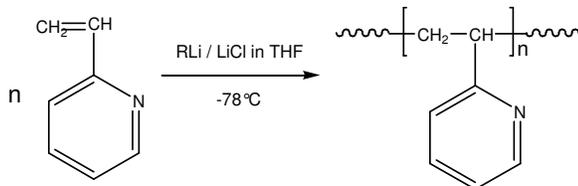


Composition:

| $M_n \times 10^3$ | PDI |
|-------------------|-----|
| 243.0 | 1.2 |

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.

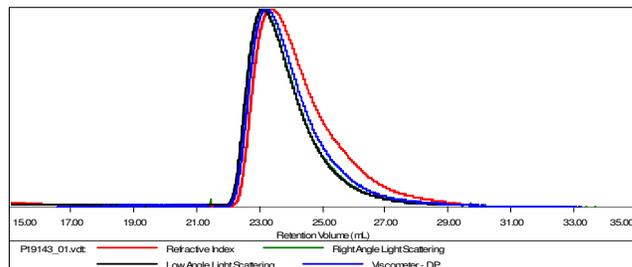
Solubility:

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

SEC elugram of the polymer:

Sample ID: P19143-2VP

| | |
|-----------------------|----------------------------|
| Concentration (mg/mL) | 11.9596 |
| Sample chvd: (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) |
|---------------|------------------------|------------------------|-----------------|----------------|----------------------------|
| P19143_01.vdt | 243,096 | 290,332 | 349,066 | 1.194 | 0.3763 |

Relationship between T_g and M_n of P2VP:

