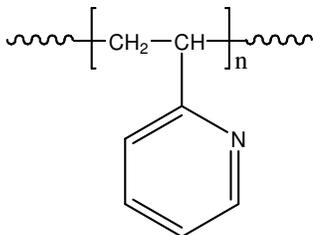


Sample Name: Poly(2-vinyl pyridine)

Sample #: P19498-2VP

Structure:

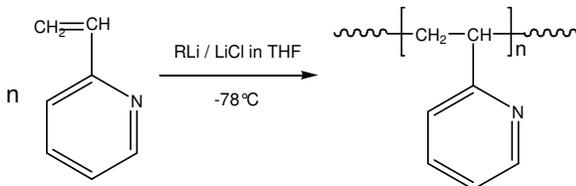


Composition:

| $M_n \times 10^3$ | PDI |
|-------------------|------|
| 7.5 | 1.04 |

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_g) of the polymer was measured at a scan rate of $10^\circ C/min$ shortly after creating thermal history of the sample.

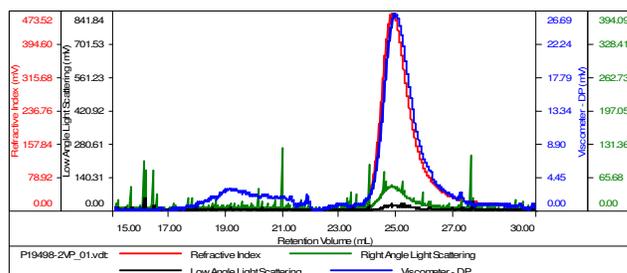
Solubility:

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-P19498-2VP

| | |
|-----------------------|----------------------------|
| Concentration (mg/mL) | 3.5156 |
| Sample dn/dc (mL/g) | 0.1670 |
| Method File | PS80K-June00-2015-0000.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) |
|-------------------|------------------------|------------------------|-----------------|----------------|----------------------------|
| P19498-2VP_01.vcl | 7,602 | 7,861 | 7,611 | 1.034 | 0.3180 |

Relationship between T_g and M_n of P2VP:

