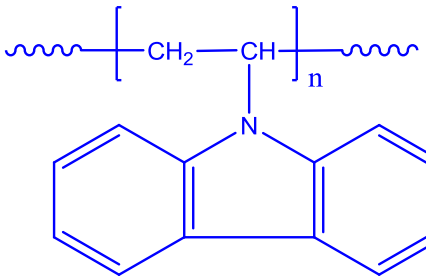
Sample Name:
**Poly(N-vinyl carbazole)**

Sample #: **P8998-VK**

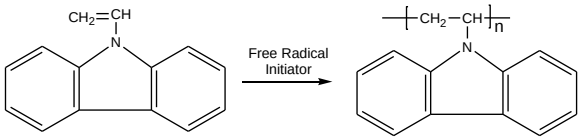
**Structure:**



**Composition:**

| Mw x $10^3$ | PDI |
|---|---|
| 380.0 | 1.6 |

**Synthesis Procedure:**
Poly(N-vinyl carbazole) is obtained by free radical polymerization of N-vinyl carbazole and the reaction scheme is shown below.




**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.

**Solubility:**
Poly(N-vinyl carbazole) is soluble in DMF, THF, toluene and $CHCl_3$. It precipitates from methanol, ethanol, water and hexanes.

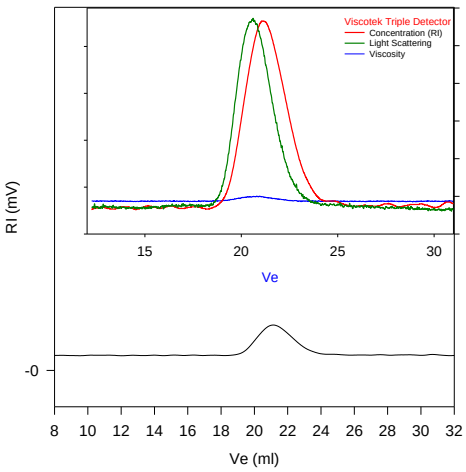
**Purification of the Polymer:**

Since the polymerization was carried out in a methanol and tert-butanol mixture, it is necessary to purify the obtained polymer by removing the un-reacted monomer. Purification carried out as follows:

1. First precipitation in Hexane.
2. Re dissolved in $CHCl_3$ and precipitated in hot methanol.
3. In hot methanol vinyl carbazole monomer is soluble and the absence of monomer in the polymer can be checked by GPC - absence of Vinyl carbazole elution at 29.8 elution count. .

**SEC of Homopolymer:**

**P8998-VK**




Size Exclusion Chromatography of polymer:

—— $M_w$= 380,000 , $M_n$ = 238,000, $M_w/M_n$ = 1.6
dn/dc in THF: 0.222 ml/g
**Solution Viscosity in THF at 35 oC:0.722dl/g**
**Rgw: 19.47 nm**