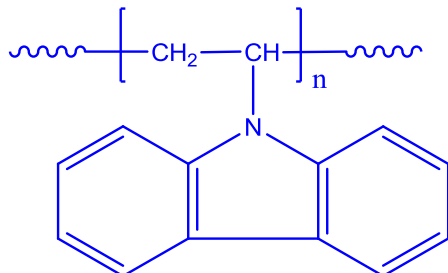


**Sample Name:**  
**Poly(9-vinyl carbazole) or Poly (N-vinyl carbazole)**

**Sample #:** **P8999-VK**

**Structure:**

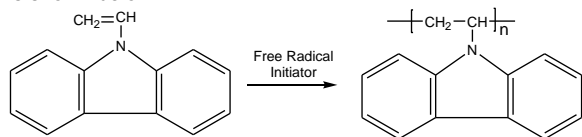


**Composition:**

$M_w \times 10^3$	PDI
1,080.00	1.7

#### 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.

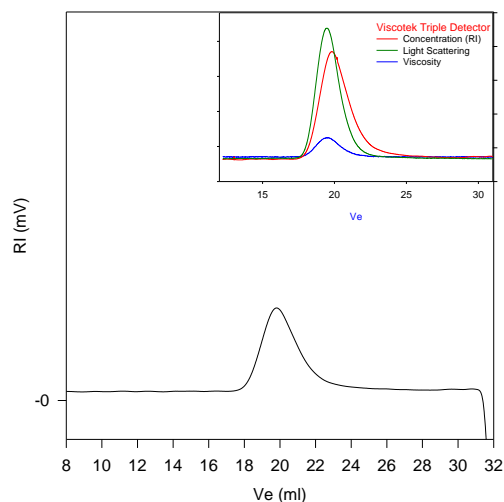
#### Purification of the Polymer:

Since the polymerization was carried out in a methanol and ter.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:

**P8999-VK**



Size Exclusion Chromatography of polymer:

—  $M_w = 1,080,000$ ,  $M_n = 612,000$ ,  $M_w/M_n = 1.7$

$dn/dc$  in THF: 0.222 ml/g

**Solution Viscosity in THF at 35 °C: 1.451 dL/g**

**R<sub>gw</sub>: 34.57 nm**