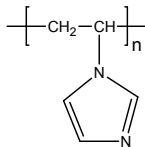


**Sample Name:**  
**Poly(N-vinyl imidazole)**

**Sample #P18150-VIMDZ**

**Structure:**



**Composition:**

$M_n \times 10^3$	PDI
11.7	2.1

**Synthesis Procedure:**

Polymer is obtained by free radical polymerization using AIBN as free radical initiator.

**Characterization:**

The molecular weight and polydispersity index (PDI) of polymer is obtained by size exclusion chromatography in aqueous system (water as eluent with 0.1% trifluoroacetic acid and 0.2M NaCl). The columns were calibrated with poly ethylene glycol.

**Thermal analysis**

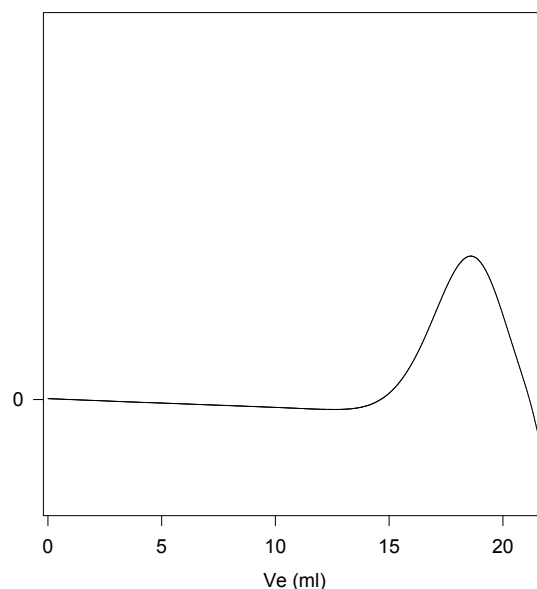
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ( $T_g$ ).

**Solubility:**

Polymer is soluble in water, methanol and precipitated out from hexane, ether.

**SEC of Homopolymer:**

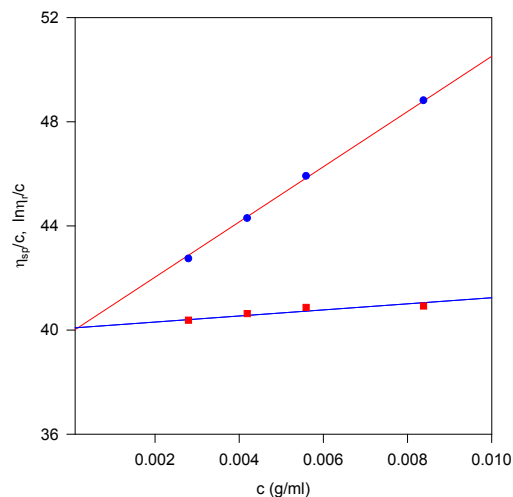
**P18150-VIMDZ**



Size exclusion chromatography of poly(vinylimidazole) with respect to quaternized poly (2 vinyl pyridine) standards:

Eluent: Water with 0.1% trifluoroacetic acid and 0.2M NaCl  
 $M_n=11,700$   $M_w=24,100$ ,  $PI=2.1$

**P18150-VIMDZ**



Intrinsic Viscosity measurement of Poly(N-vinyl imidazole) in Methanol at 25°C  
 $[\eta]=30.96$  ml/g

According to the Mark-Houwink equation for poly(1-vinyl imidazole):

$[\eta]=K M_v^\alpha$ ;  $K=0.0485$   $\alpha=0.63$  (ref: Polymer Handbook, 4th ed.)

The estimated Viscosity Average Molecular Weight

$M_v=28,500$