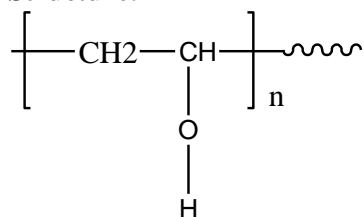


Sample Name:  
**Poly(Vinyl alcohol)**

Sample #: **P11280-VA**

**Structure:**

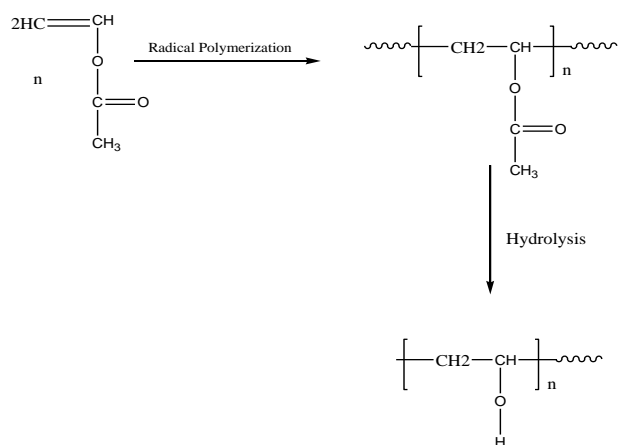


**Composition:**

$M_n \times 10^3$	PDI
1.3	1.55

**Synthesis Procedure:**

Poly vinyl alcohol is obtained from the hydrolysis of poly vinyl acetate under alkaline conditions. Poly vinyl acetate is obtained by free radical polymerization using iodo ethyl acetate as chain transfer reagent. Polymerization was carried out in bulk. The polymerization scheme can be illustrated as follows:



**Characterization:**

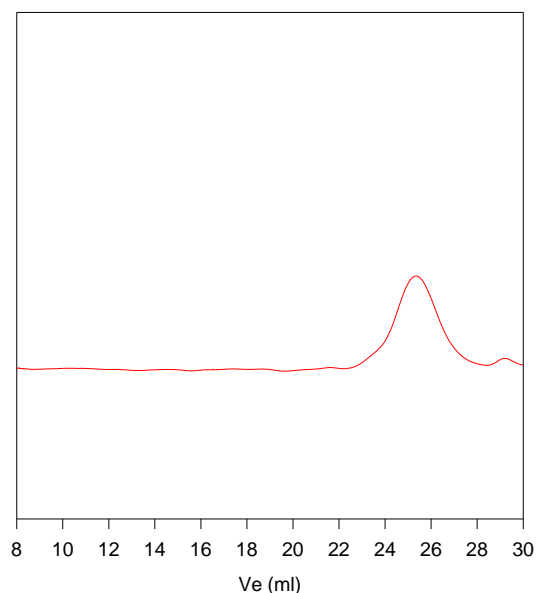
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.  $^1\text{H}$  NMR analysis was carried out on Varian instrument at 500MHz.

**Purification:**

Obtained polymer after hydrolysis of poly vinyl acetate was dissolved in methanol. The solution was filtered and added to cold acetone. Poly vinyl alcohol was precipitated out. It was washed with THF to remove any unreacted NaOH used in the hydrolysis. Polymer was dissolved in water and freeze dried.

**SEC elugram of Homopolymer:**

**P11280-VAc**



Size exclusion chromatograph of Poly vinyl acetate:

$M_n=2,600$   $M_w=4,000$   $PI=1.55$

$dn/dc$  in THF: 0.033 ml/g

Data from Viscotek triple detectors.

After Hydrolysis of acetate group:  $M_w$ : 2200  $M_n$ : 1300  $M_w/M_n$ : 1.55