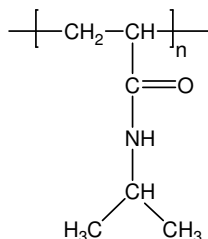


Sample Name: Poly(N-isopropyl acrylamide)

Sample #: P5541-NIPAM

**Structure:**



**Composition:**

$M_n \times 10^3$	$M_w \times 10^3$	PDI
560.00	1680.0	3.0

**Synthesis Procedure:**

Poly(N-isopropyl acrylamide) is obtained by free radical process

**Characterization:**

The molecular weight and polydispersity index (PDI) were 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.

Sample Preparation: Polymer sample for the GPC were prepared as reported in the literature (**Macromolecules, 2000,33,6738**). To avoid the effect of concentration and the amount of water present in the sample, on line triple detectors were used and the  $dn/dc$  was calculated and found : 0.034mL/g in THF at 35 oC.

**Purification of polymer:**

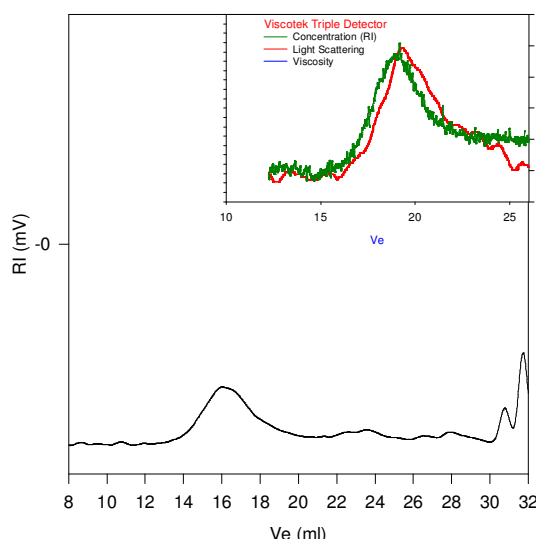
Unreacted monomer was removed by dissolving the product in cold water than warming the solution. The polymer separated out. This procedure was applied 2 times to remove the unreacted monomer. The obtained polymer was dissolved in acetone and reprecipitated in cold ether.

**Solubility:**

Poly(N-isopropyl acrylamide) is soluble in water, DMF, THF, acetone, insoluble in hexane and ether.

SEC of Homopolymer:

**P5541-NIPAM**



Size Exclusion Chromatography of Poly N-isopropylacrylamide(NIPAM)

—  $M_n = 560,000$ ,  $M_w = 1680,000$ ,  $M_w/M_n = 3.0$

Solution Viscosity in THF at 35 oC: 0.463dL/g

$dn/dc$  in THF at 35 oC: 0.034 mL/g

Rgw: 28.84nm