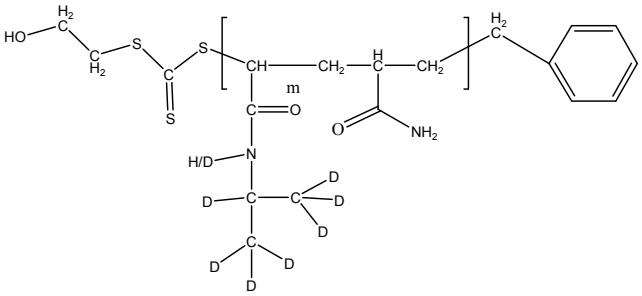
Sample Name: **Hydroxy Terminated Poly(N-isopropyl acrylamide)**
Sample #: **P14499-d7PNIPAMOH**

Structure:

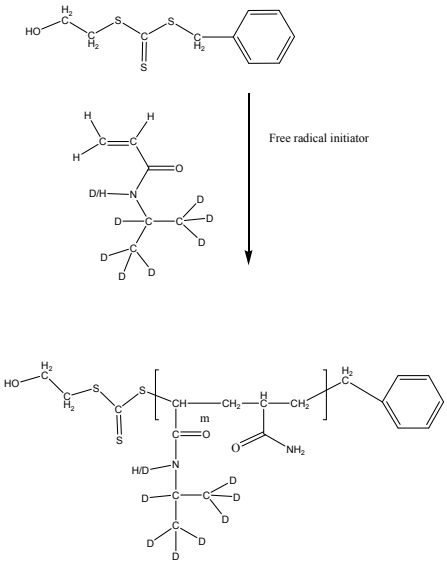


Composition:

Mn x 10^3	Mw/Mn by SEC
9.5	1.15

Synthesis Procedure:

Hydroxy Terminated Poly(N-isopropyl acrylamide) was prepared by RAFT process. The final polymer was purified by fractionation.



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 rprecipitated in cold ether.

Characterization:

Size exclusion chromatography (SEC) was carried out on a Varian liquid chromatograph equipped with a refractive index detector. A Shodex 806L GPC columns from Supelco was used with DMF(0.01M LiBr) and also in THF as the eluent. The columns were calibrated with monodisperse polystyrene standards. The polydispersity index was calculated.

Viscosity measurement was carried out in a Ubbelohde viscometer at 25°C. Four solutions in methanol of different concentrations were measured. The intrinsic viscosity was obtained by extrapolation to c=0. From viscosity-molecular weight relationship $[\eta]= 2.99\times10^{-2}\ M^{0.64}$ (Makromolecular Chem. V180, P969, 1979), the viscosity average molecular weight was calculated accordingly.

Molecular weight was calculated by end group titration by acid base process.

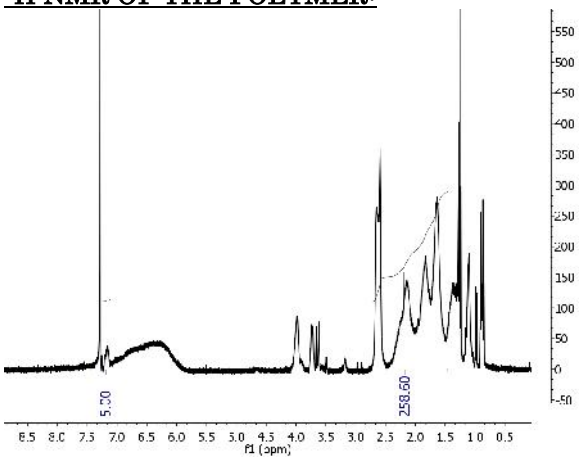
Solubility:

The polymer is soluble in methanol, cold water, THF, CHCl3.

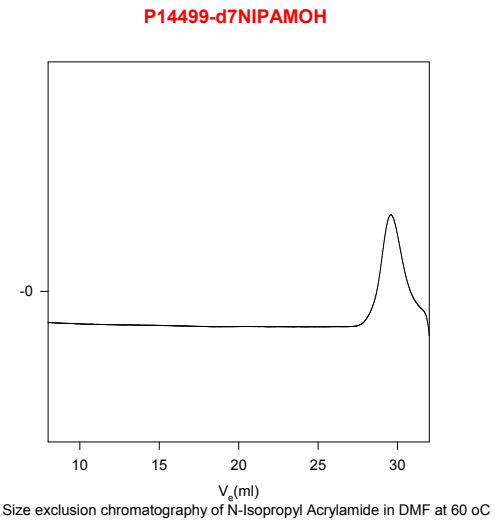
Results ambiguity was characterized in DMF and in THF for the molecular weights determination:

Final polymer after purification was analysed in DMF as a carrier solvent. The obtained values were found three times higher than calculated by titration or by viscosity analysis. The products were also analysed in THF followed by the procedure as reported in (Macromolecues, 2000,33, 6738). The values were found lower than calculated by titration and the viscosity. The molecular for such polymer is greatly influenced the presence of the end group. The viscosity of the polymer solution were taken as more appropriate that is also comparable with the result of the end group titration.

^{1}H NMR OF THE POLYMER:



SEC of Sample:



Size exclusion chromatography of N-Isopropyl Acrylamide in DMF at 60 oC
Molecular Weight Distribution with respect to Polystyrene Standards:
Mn; 9,500 Mw: 11,000 M_w/M_n= 1.15