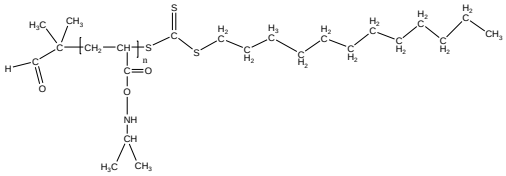
Sample Name: **Poly(N-Isopropyl Acrylamide)**

Sample #: **P43247-NIPAM**

Structure:

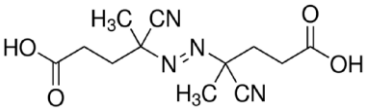


Composition:

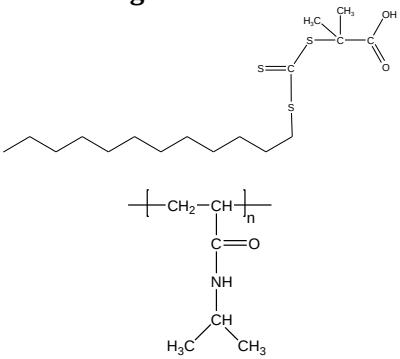
Mn x 10^3	PDI
48.5	1.22

Synthesis Procedure:
Poly(N-isopropyl acrylamide) was prepared by RAFT polymerization process.

Catalyst used:



RAFT reagent structure:



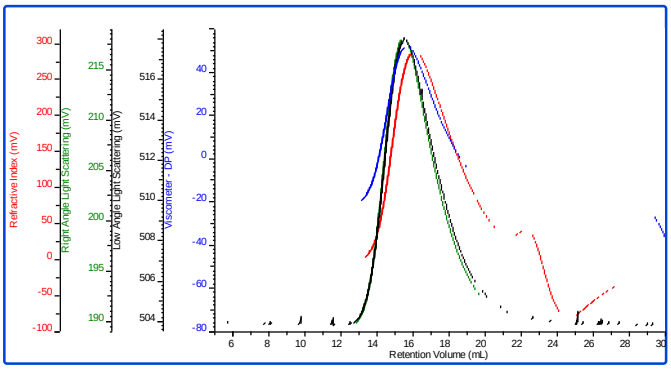
Characterization:
The molecular weight and polydispersity index (PDI) of poly(N-isopropyl acrylamide) were obtained by size exclusion chromatography (SEC) in DMF at 40°C. SEC analysis was performed on a Malvern chromatograph equipped with refractive index and light scattering detectors.
Sample preparation: Polymer sample for the SEC was prepared as reported in the literature (Macromolecules, 2000, 33, 6738).
DMF containing LiBr as an additive was found to be efficient eluent to avoid any adsorption effect of polymer. It was observed 0.05 to 0.1 M solution of LiBr in DMF was efficient to analyze the polymer. dn/dc used in DMF was 0.077 ml/g. In pure DMF without any additive, the molecular weight was found higher and Mw/Mn broad.

Purification of polymer:
Unreacted monomer was removed by dissolving the product in cold water, followed by 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 fractionated from hexane. After several fractionation to remove the low molecular weight fraction (< 10%), narrow molecular weight fraction polymer was obtained. Polymer was finally reprecipitated in cold hexane and dried at room temperature.

SEC elugram of the polymer in DMF:

P43247

dn/dc	0.0770
Flow Rate	0.7000
Solvent	DMF with LiBr
Method	Calibration_2020-11-25_PMMA-85K-0003.vcm



Sample	Mn	Mw	Mp	Mw/Mn
P43247_1_2021-06-03	48,498	59,605	61,126	1.229