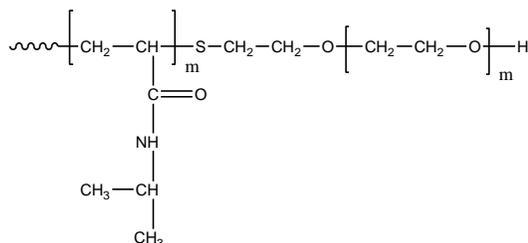


### Sample Name:

**Poly(N-isopropylacrylamide -b- ethylene oxide)**

Sample #: **P7237-NIPAMEO**

### Structure:

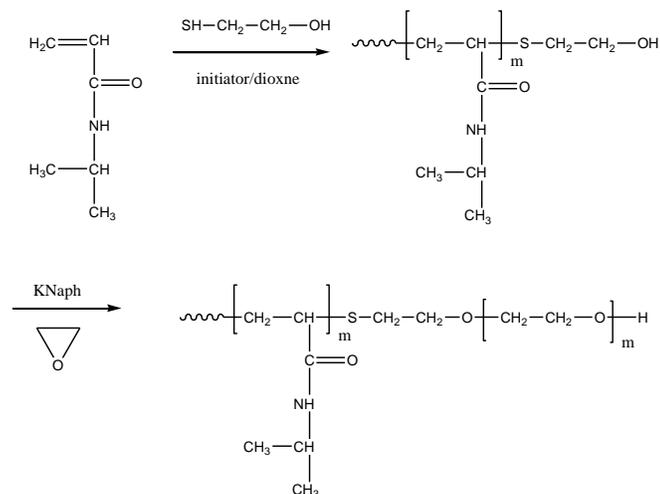


### Composition:

Mn x 10 <sup>3</sup> PNIPAM-b-PEO	PDI
27.5-b-66.8	1.8

### Synthesis Procedure:

The polymer is prepared by radical polymerization of N-isopropylacrylamide at the presence of chain transfer agent, followed by anionic polymerization of ethylene oxide with potassium naphthalene as catalyst. The scheme of the reaction is illustrated below:



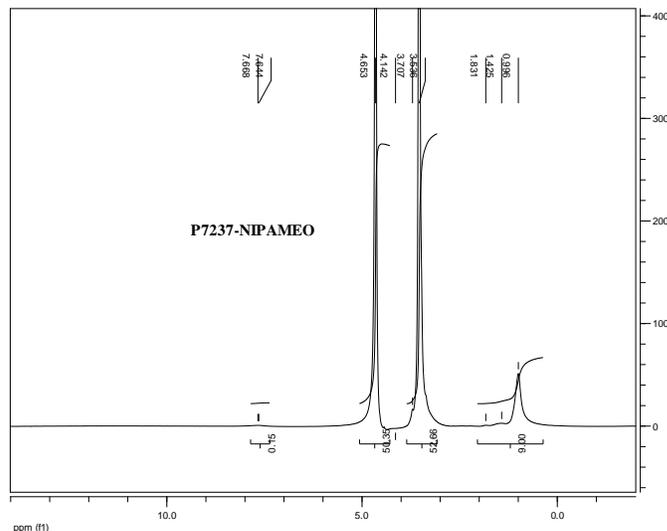
### Characterization:

An aliquot of the hydroxyl ended poly(N-isopropylacrylamide) block was terminated before addition of ethylene oxide and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the methylene protons at about 3.5 ppm with the poly(N-isopropylacrylamide) protons at about 1-2 ppm.

### Solubility:

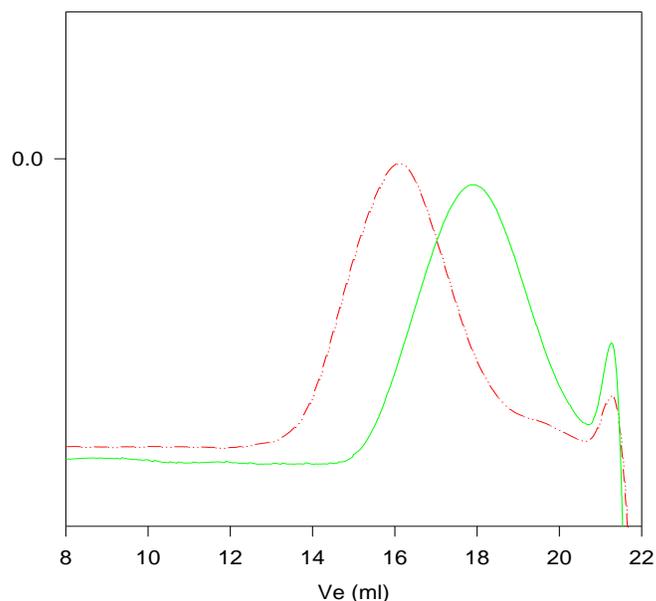
The polymer is soluble in THF, DMF, water and precipitates from hexane.

### H-NMR Spectrum of the block copolymer:



### SEC of the block copolymer:

#### P7237-NIPAMEO



Size exclusion chromatography(DMF eluent):

- Poly(N-isopropylacrylamide), Mn=27500, Mw=44000, PI=1.6
- - - Block copolymer PNIPAM(27500)-b-PEO(66800) PI 1.8  
Composition from NMR  
Dp: NIPAM (243units)-b-EO(1518units)