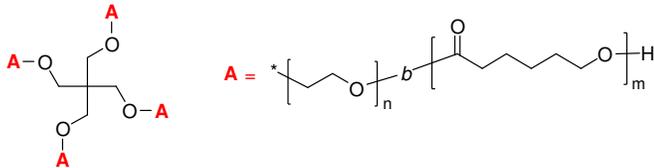


### Sample Name:

Four-arm poly(ethylene oxide-*block*- $\epsilon$ -caprolactone) star polymer with pentaerythritol core

Sample # P3131-4EOCL

### Structure:

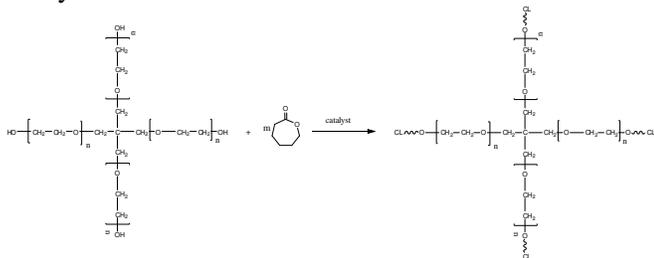


### Composition:

$M_n \times 10^3$ (g/mol) of each PEO- <i>b</i> -PCL arm	$M_w/M_n$
2.5- <i>b</i> -6.0	1.08

### Synthesis procedure:

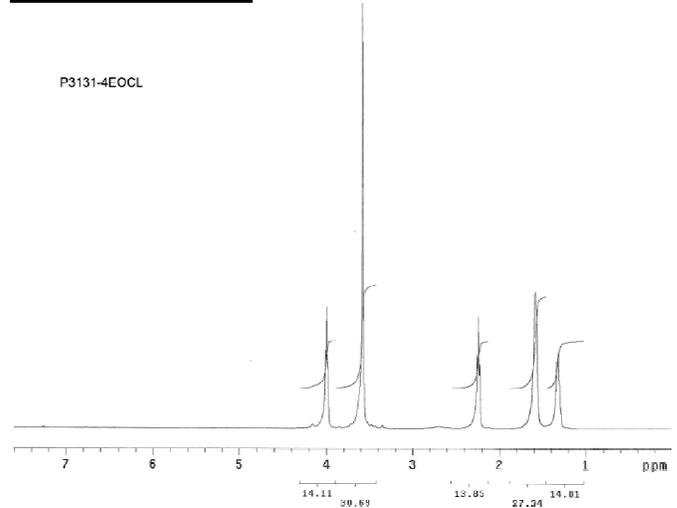
The polymer was prepared by ring opening polymerization of caprolactone using Tin octoate catalyst. The scheme of the reaction is shown below:



### Characterization:

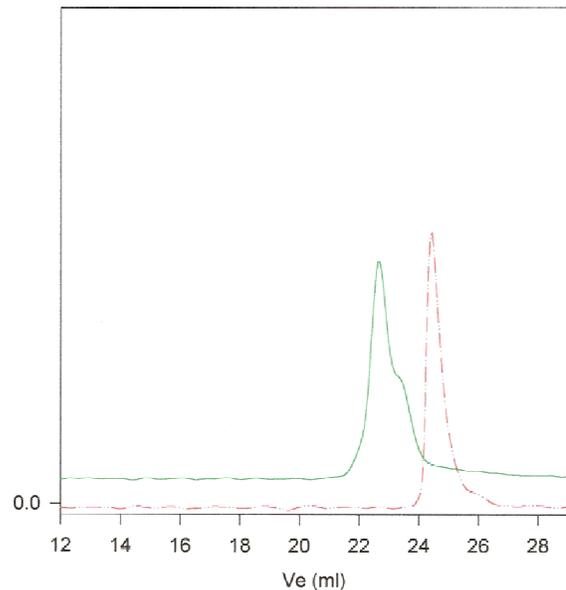
The molecular weight of the polymer was calculated by  $^1\text{H-NMR}$  spectroscopy by comparing the integration of protons assigned to core (~3.6 ppm) and to  $\epsilon$ -caprolactone (~4.1 ppm). Polydispersity index ( $M_w/M_n$ ) was determined by size exclusion chromatography (SEC) on Varian liquid chromatograph equipped with triple detector, Supelco columns, and using THF (cont. 2 vol%  $\text{Et}_3\text{N}$ ) as an eluent.

### $^1\text{H NMR}$ spectrum:



### SEC elugrams:

P3131- 4EOCL



Size exclusion chromatography of Four arm block copolymer of Poly(ethylene oxide-*b*-caprolactone):

--- Four arm Poly(ethylene oxide),  $M_n=10000$ ,  $M_w=10800$ ,  $PI=1.08$

— Four arm Block Copolymer PEO(10000)-*b*-PCL(24000),  $M_w/M_n$  ( $PI$ )=1.20 Composition from  $^1\text{H NMR}$   
Mn: of each Branch: PEO (2500) PCL(6000)