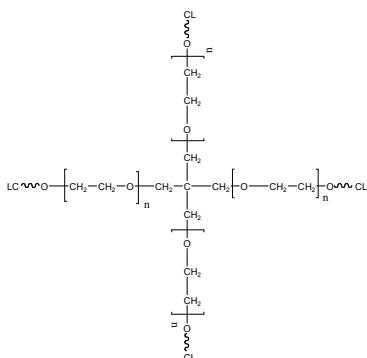


Sample Name:

**Four arm Poly(ethylene oxide –b-ε-caprolactone)**

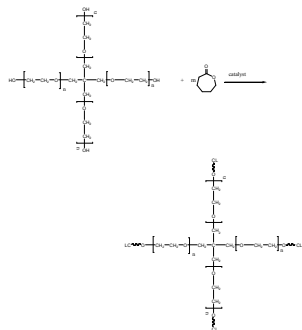
**Sample #: P10502-4EOCL**



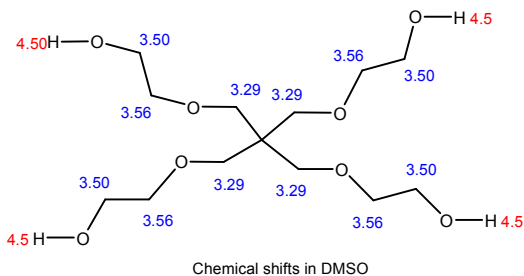
Mn x 10 <sup>3</sup> Total (branch)	PDI
0.40-b-1.1 (0.1-b-0.28)	1.15
Dp of each branch: EO-b-CL 2.5-b-2.5 (average)	

#### Synthesis Procedure:

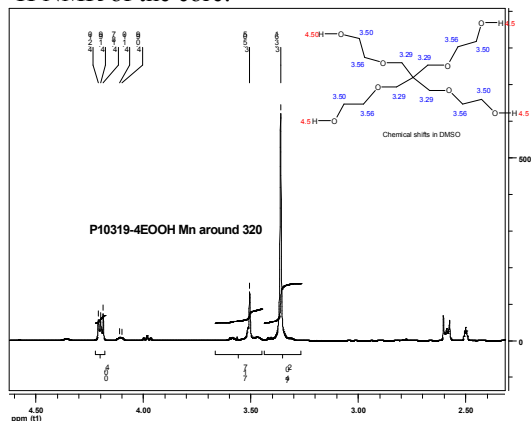
The polymer was prepared by ring opening polymerization of caprolactone using Tin octoate as the catalyst and pentaerthritol ethoxylate that bears Mn of 320. The scheme of the reaction is illustrated below:



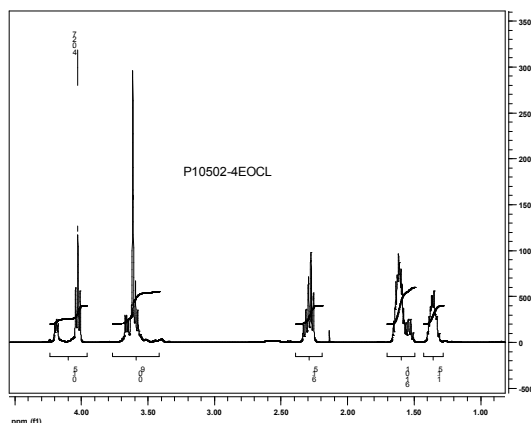
#### Characterization data for the core bearing Mn: 320



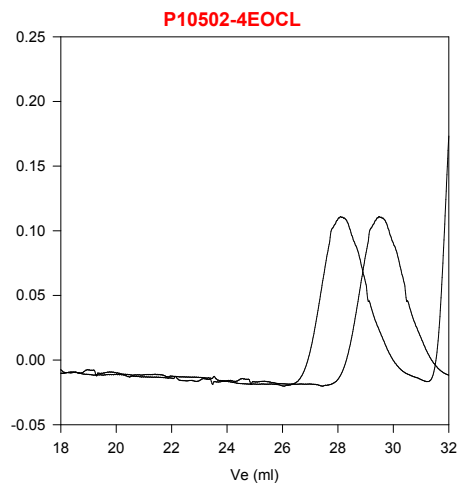
#### <sup>1</sup>H NMR of the core:



#### <sup>1</sup>H NMR of the Polymer:



#### SEC of the polymer:



Size Exclusion Chromatogram of  
core based on pentaerythritol ethoxylate  
— M<sub>1</sub>=400 M<sub>2</sub>=450, M<sub>w</sub>/M<sub>n</sub>=1.10  
4EOCL : Mn 400-b-1150 Mw/Mn 1.15  
Each branch Dp: 2.5-b-2.5

#### Characterization:

The Mn of the polymer is calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the core protons at about 3.6 ppm with the ε-caprolactone protons at about 4.1 ppm. Polydispersity is determined by size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF containing 2 vol% (Et)<sub>3</sub>N as the eluent.