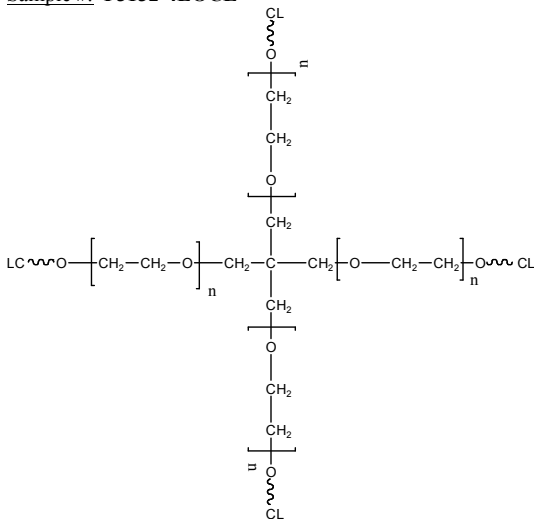


Sample Name:

**Four-Arm Poly(ethylene oxide-b-ε-caprolactone), Pentaerythritol Core**

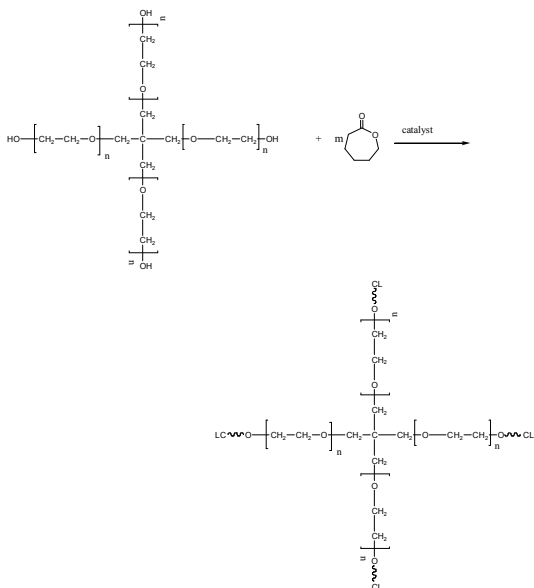
Sample #: P3132-4EOCL



Mn x 10 <sup>3</sup> (branch)	PDI
2.5-11.5	1.09

#### Synthesis Procedure:

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



#### Characterization.

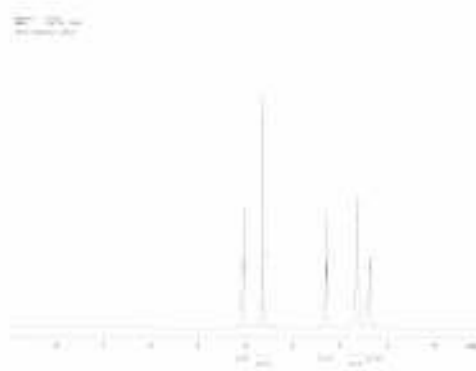
The Mn of the polymer is calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the core protons at about 3.6 ppm with the ε-caprolactone protons at

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.

#### Solubility:

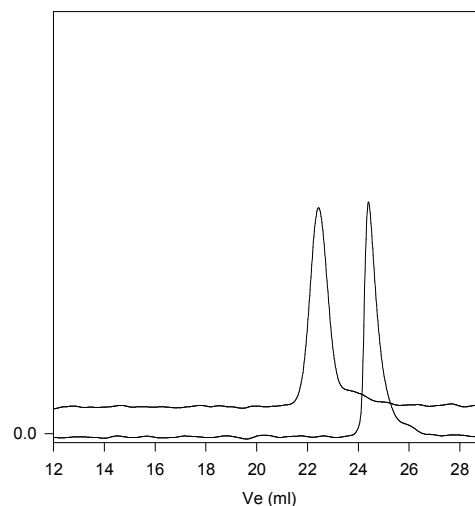
Polymer is soluble in toluene, THF, water and CHCl<sub>3</sub>. The polymer is insoluble in hexane, ether, cold isopropanol and ethanol.

#### NMR of the product



#### SEC of the product

P3132- 4EOCL



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

— Four arm Poly(ethylene oxide), M<sub>n</sub>=10000, M<sub>w</sub>=10800, PI=1.08

— Four arm Block Copolymer PEO(10000)-b-PCL(46000),  
M<sub>w</sub>/M<sub>n</sub> (PI)=1.99 Composition from <sup>1</sup>H NMR  
Mn: of each Branch: PEO (2500) PCL(11500)