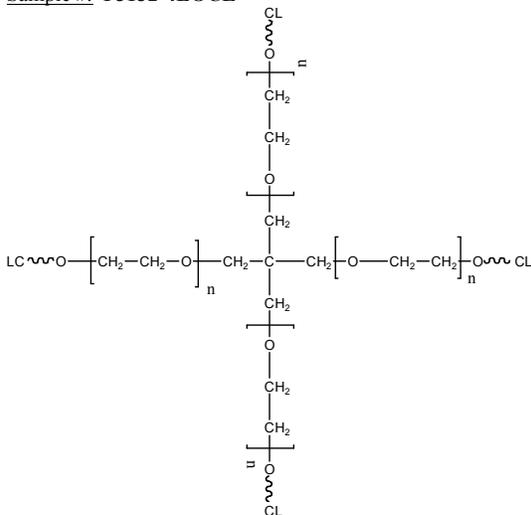


Sample Name:

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

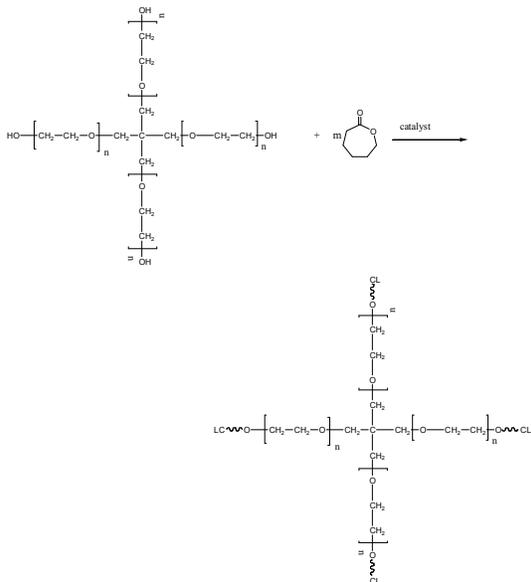
Sample #: P3132-4EOCL



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

**Synthesis Procedure:**

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



**Characterization.**

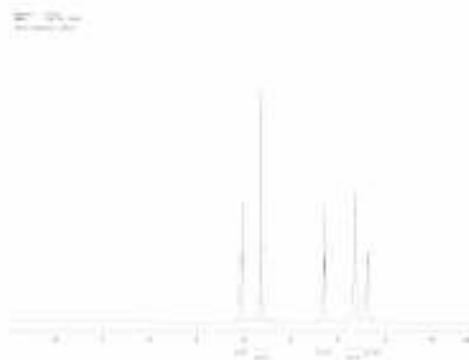
The Mn of the polymer is calculated from 1H-NMR spectroscopy by comparing the peak area of the core protons at about about 3.6 ppm with the ε-caprolactone protons at

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)3N as the eluent.

**Solubility:**

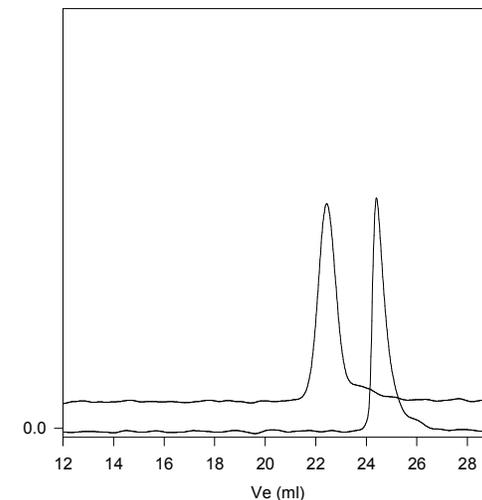
Polymer is soluble in toluene, THF, water and CHCl<sub>3</sub>. The polymer is insoluble in hexane, ether, cold isopropanol and ethanol.

**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), Mn=10000, Mw=10800, PI=1.08

— Four arm Block Copolymer PEO(10000)-b-PCL(46000),

Mw/Mn (PI)=1.99 Composition from <sup>1</sup>H NMR

Mn: of each Branch: PEO (2500) PCL(11500)