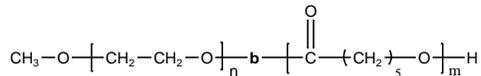


Sample Name:

**Poly(ethylene oxide -b-  $\epsilon$  -caprolactone)**

Sample #: P44471-EOCL

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> PEO-b-PCL	PDI
20.0-b-1.5	1.10

**Synthesis Procedure:**

Poly(ethylene oxide -b-  $\epsilon$  -caprolactone) is prepared by living anionic polymerization of ethylene oxide and coordination polymerization of  $\epsilon$  -caprolactone.

**Characterization:**

The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the ethylene oxide protons at about 3.6 ppm with the  $\epsilon$ -caprolactone protons at about 4.1 ppm.

**Solubility:**

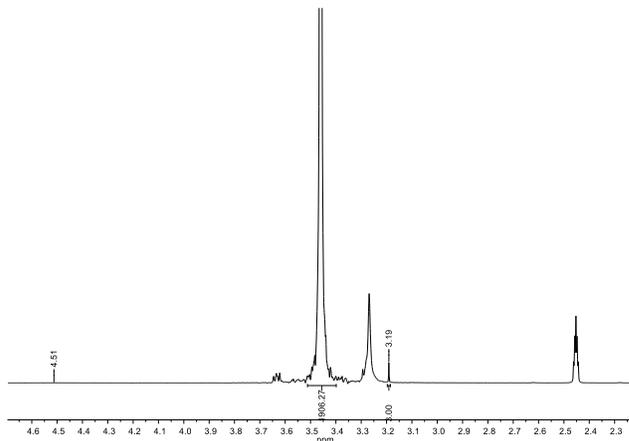
Poly(ethylene oxide -b-  $\epsilon$  -caprolactone) is soluble in CHCl<sub>3</sub>, THF, DMF, toluene and precipitated out from cold ethanol, diethyl ether.

**Purification of Polymer:**

1. Crude Polymer dissolved in DCM and washed with water.
2. Polymer solution in DCM was passed through a column packed with silica.
3. Unreacted Polyethylene glycol adsorbed on silica surface. The traces amount of the unreacted PEG was separated out.
4. Polymer solution concentrated by rotaevaporator, and the highly viscous mass was dissolved in absolute ethanol.
5. Polymer solution left at 0°C overnight. Polymer separated out. Product separated from absolute ethanol and dried under vacuum at 50°C for 24h.

6. Polymer was packed in a pre cleaned vial (backed at 100°C for 4h) and sealed under clean environment under vacuum.

**HNMR spectrum of the PEG Sample run in DMSO:**



**HNMR spectrum of the Block Copolymer run in DMSO:**

