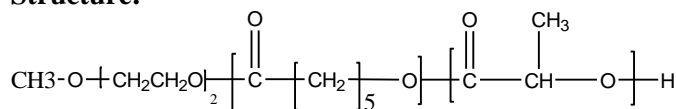


**Sample Name:** Poly( $\epsilon$ -caprolactone-b- Lactide)

**Sample #:** P7642-CLLA (L form)

**Structure:**

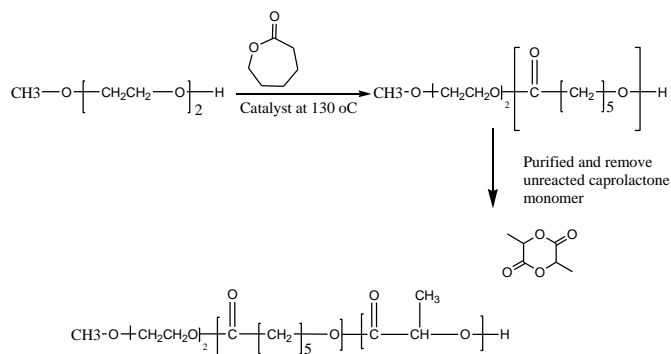


**Composition:**

Mn x 10 <sup>3</sup> CL-b-LA	Mw/Mn (PDI)
20.0-b-20.0	1.15

**Synthesis Procedure:**

Poly( $\epsilon$ -caprolactone-b-Lactide) is prepared by ring opening polymerization using Sn catalyst and monofunctional methoxy diethylene glycol as initiator. The reaction scheme is shown below:



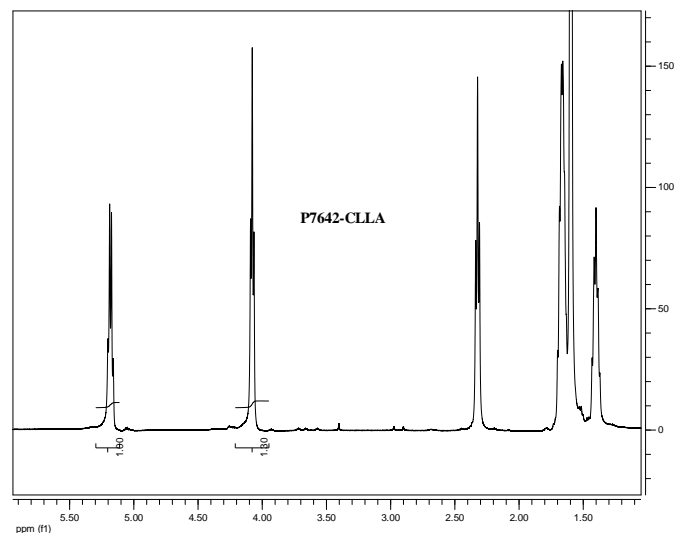
**Characterization:**

An aliquot of the polystyrene block was terminated before addition of  $\epsilon$ -caprolactone and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area of  $\epsilon$ -caprolactone protons at 4.1 ppm. Block copolymer PDI is determined by SEC.

**Solubility:**

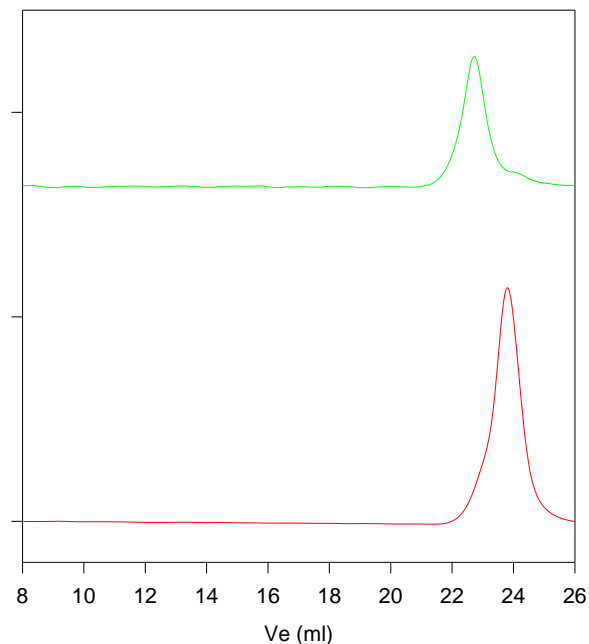
Poly(styrene-b-  $\epsilon$ -caprolactone) is soluble in THF, Chloroform, DMF, and precipitated in methanol and hexanes.

**<sup>1</sup>H NMR spectrum of the sample:**



**SEC profile of the block copolymer:**

**P7642-CLLA (L form LA)**



Size exclusion chromatography of poly(styrene-b-2-vinyl pyridine)

— Poly caprolactone, M<sub>n</sub>=20,000 Mw:22,000 PI=1.10  
— Poly caprolactone (20,000)-b-Poly(lactide)(20,000),PI=1.15

