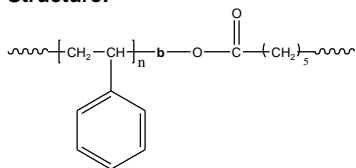


**Sample Name:** Poly(styrene-b-ε-caprolactone)

**Sample #:** P2076-SCL

**Structure:**

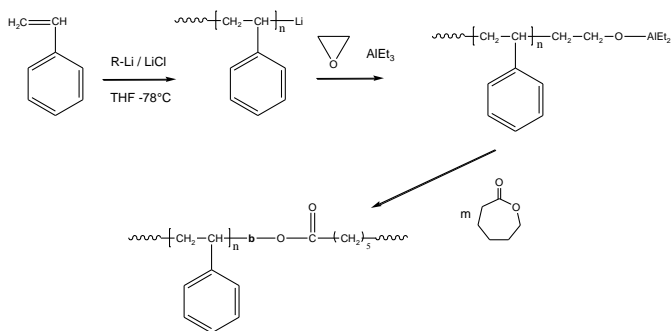


**Composition:**

Mn x 10 <sup>3</sup> S-b-CL	Mw/Mn (PDI)
29.0-b-31.0	1.13

**Synthesis Procedure:**

Poly(styrene-b-ε-caprolactone) is prepared by anionic polymerization with sequence addition of styrene followed by n-butyl methacrylate. The reaction scheme is shown below:



**Characterization:**

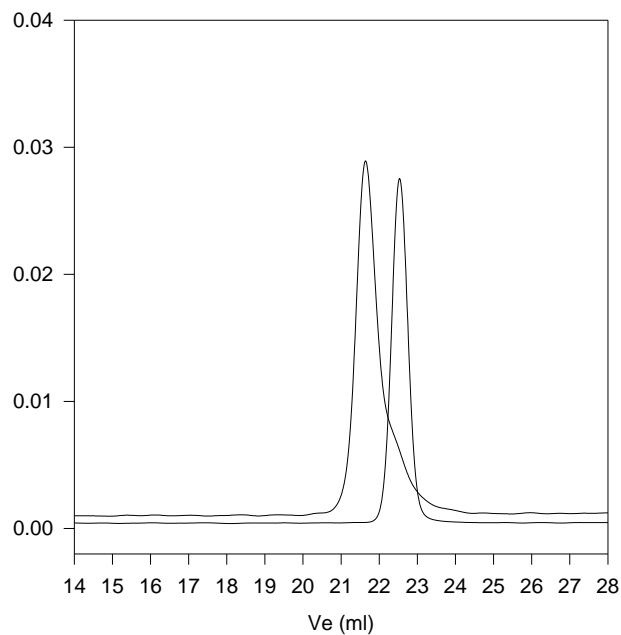
An aliquot of the polystyrene block was terminated before addition of ε-caprolactone and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing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

**Solubility:**

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

Figure: SEC profile of the block copolymer

**P2076-SCL**



— SEC profile of Poly(Styrene-b-ε-caprolactone):

— Polystyrene, M<sub>n</sub>=29000, M<sub>w</sub>=29800, PI=1.03

— Block Copolymer PS(29000)-b-PεCL(31000), PI=1.13