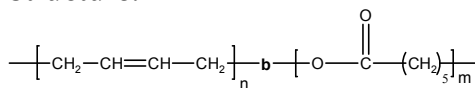


Sample Name: Poly(1,4-butadiene-b-ε-caprolactone)

Sample #: P10441-BdCL

Structure:

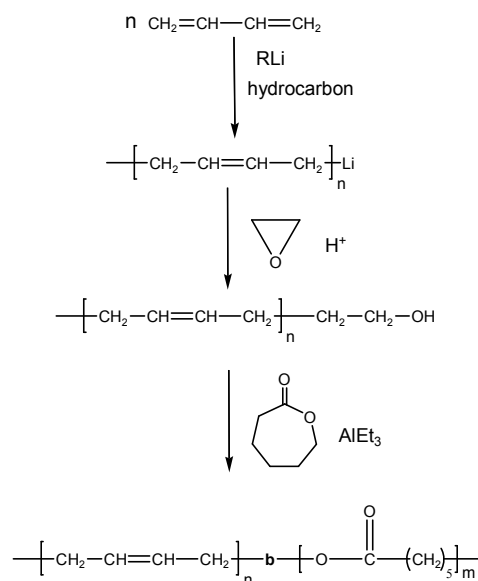


Composition:

$M_n \times 10^3$ Bd-b-CL	M_w/M_n (PDI)
1.2-b-3.2	1.09

Synthesis Procedure:

Poly(1,4-butadiene-b-ε-caprolactone) is prepared by living anionic polymerization addition of butadiene followed coordination polymerization of ε-caprolactone. The reaction scheme is shown below:



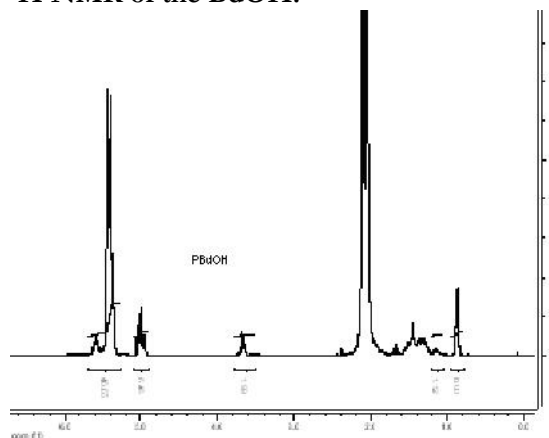
Characterization:

An aliquot of the anionic poly(butadiene) 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 ¹H-NMR spectroscopy by comparing the peak area of the vinylic butadiene protons at about 5.4 ppm with the ε-caprolactone protons at about 4.1 ppm. Block copolymer PDI is determined by SEC.

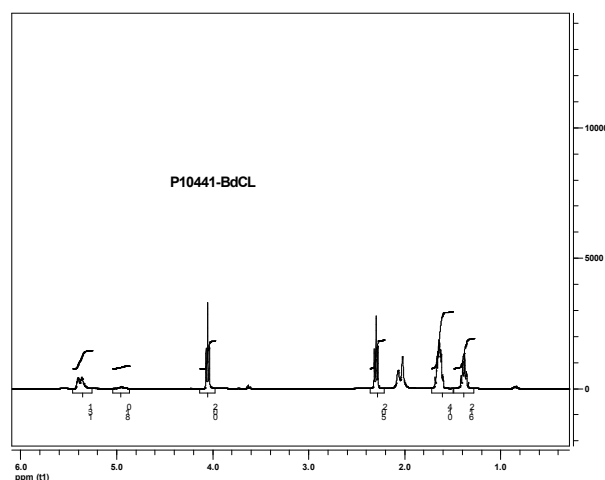
Solubility:

The polymer is soluble in tetrahydrofuran (THF) and chloroform (CHCl₃).

¹H NMR of the BdOH:



¹H NMR of the block polymer:



SEC of the block copolymer:

