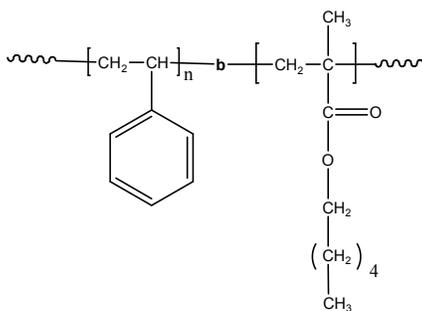


Sample Name:Poly(styrene-*b*-*n*-hexyl methacrylate)**Sample #:** P10927-SHexMA**Structure:****Composition:**

Mn × 10 ³ S- <i>b</i> - <i>n</i> HexMA	Mw/Mn (PDI)
48.0- <i>b</i> -45.0	1.15
Microstructure for poly <i>n</i> -Hexyl MA block	Sndio:hetero:iso contents 55:35:10

Glass transition temperature at a glance

T _g for PS block	102 °C
T _g for <i>n</i> HexMA block	10 °C

Synthesis Procedure:

Poly(styrene-*b*-*n*-hexylmethacrylate) is prepared by living anionic polymerization by sequence addition of styrene followed by *n*-hexyl methacrylate .

Characterization:

An aliquot of the polystyrene block was terminated before addition of *n*-Hexyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI).

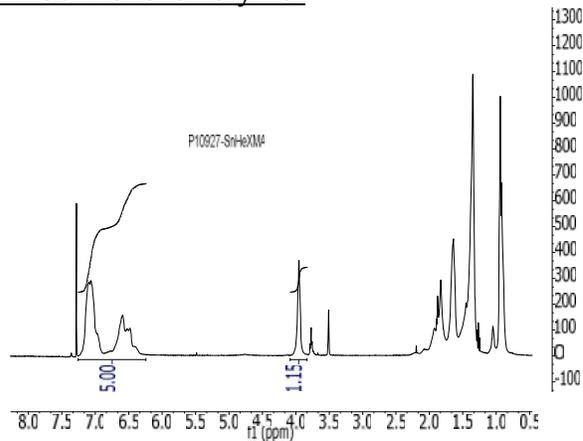
The final block copolymer composition by ¹H-NMR spectroscopy in CdCl₃ . For *n*-hexyl methacrylate the CH₃ protons from alpha methyl was considered to calculate the compositions and its microstructure. The ester OCH₂ protons indicate that the commercial *n*-Hexyl methacrylate might contain some other isomers of *n*-Hexyl methyl ester. Block copolymer PDI is determined by SEC.

Thermal analysis:

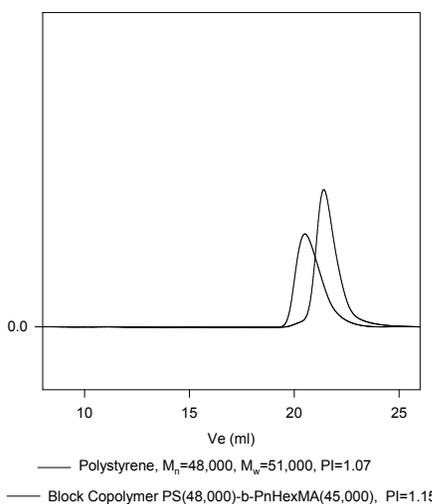
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

Poly(styrene-*b*-*n*-hexylmethacrylate) is soluble in toluene, THF CHCl₃, and precipitated in methanol.

¹H NMR of the Polymer**SEC profile of the block copolymer**

P10927-SnHexMA

**Thermograms for PS block and *n*HexMA block:**