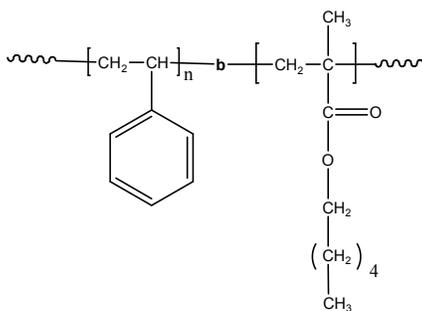


## Sample Name:

Poly(styrene-b-n-hexyl methacrylate)

Sample #: P10922A-SHexMA

Structure:



## Composition:

Mn × 10 <sup>3</sup> S-b-nHexMA	Mw/Mn (PDI)
45.0-b-38.0	1.16
Microstructure for poly n-Hexyl MA block	Sndio:hetero:iso contents 55:35:10

## Glass transition temperature at a glance

T <sub>g</sub> for PS block	102 °C
T <sub>g</sub> for nHexMA 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 <sup>1</sup>H-NMR spectroscopy in CdCl<sub>3</sub> . For n-hexyl methacrylate the CH<sub>3</sub> protons from alpha methyl was considered to calculate the compositions and its microstructure. The ester OCH<sub>2</sub> 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.

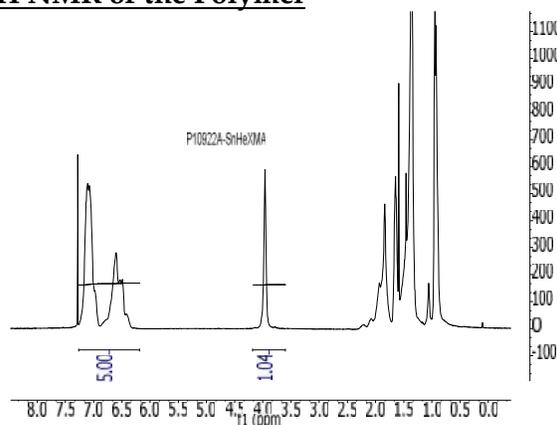
## Thermal analysis:

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<sub>g</sub>).

## Solubility:

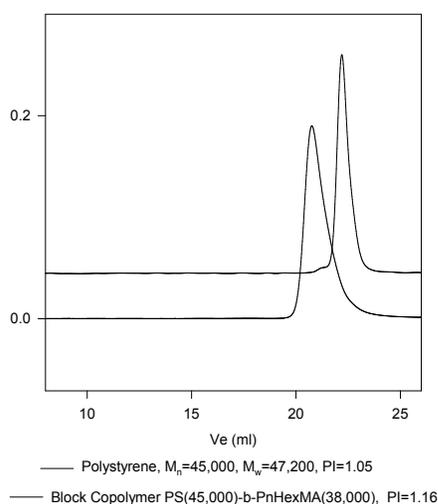
Poly(styrene-b-n-hexylmethacrylate) is soluble in toluene, THF CHCl<sub>3</sub>, and precipitated in methanol.

## <sup>1</sup>H NMR of the Polymer



## SEC profile of the block copolymer

P10922A-SnHexMA



## Thermograms for PS block and nHexMA block:

