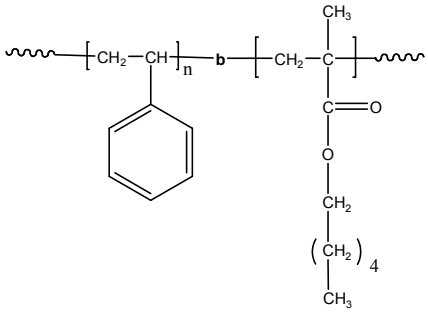
Sample Name:
Poly(styrene-b-n-hexyl methacrylate)
Sample #: P9302-SHexMA
Structure:



Composition:

Mn × 10^3 S-b-nHexMA	Mw/Mn (PDI)
21.0-b-60.0	1.16
Microstructure for poly n-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 nHeXMA block	10 °C

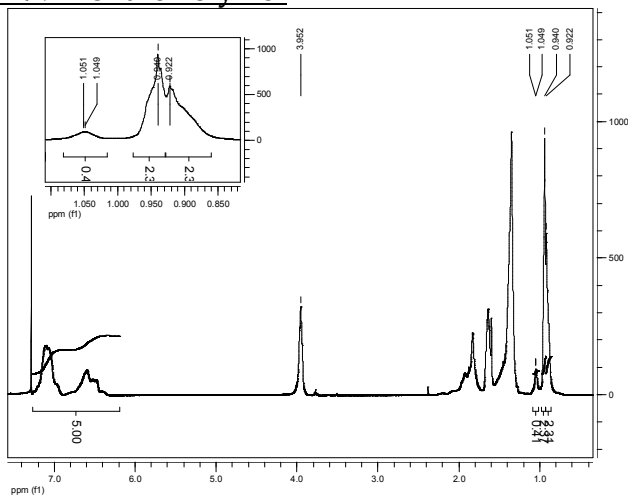
Synthesis Procedure:
Poly(styrene-b-n-hexylmethacrylate) is prepared by living anionic polymerization by sequence addition of styrene followed by n-hexyl methacrylate .

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 ^{1}H-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.

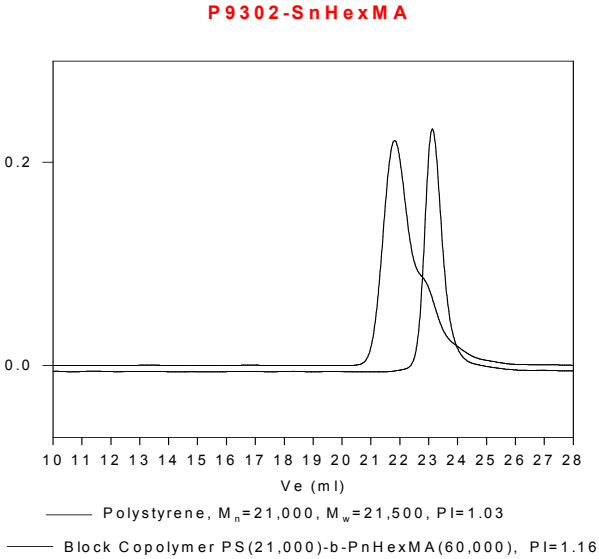
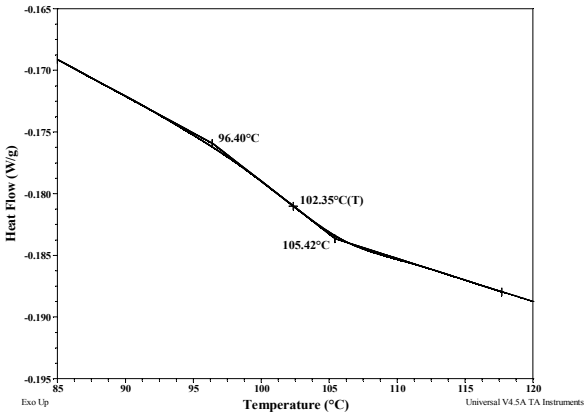
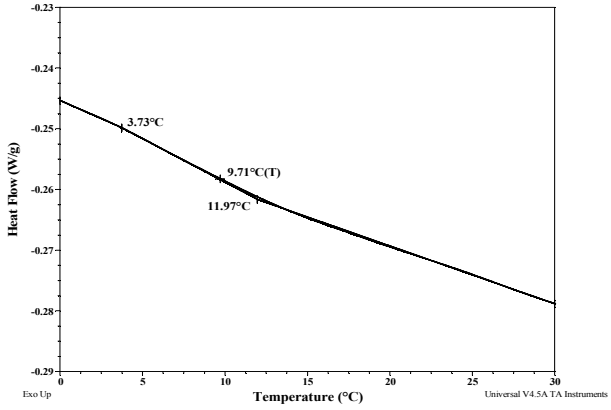
Thermal analysis:
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min.The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

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

HNMR of the Polymer



SEC profile of the block copolymer



Thermograms for PS block and nHeXMA block: