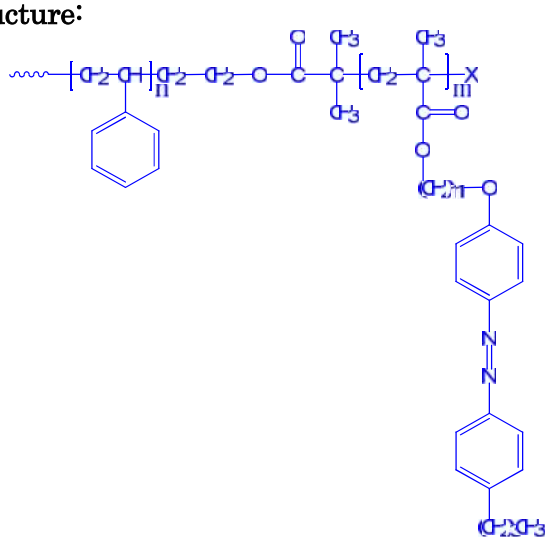
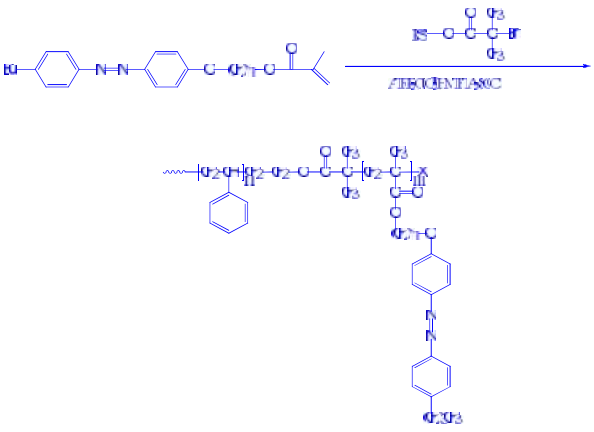
Sample Name: **Poly(styrene-b- AzoMA)**
(AzoMA=11-[4-(4-butylphenylazo)phenoxy]-undecyl methacrylate)
Sample #: **P6676-SAzoMA**
Structure:



Composition:

Mn x 10^3 PS-b-PAzoMA	PDI
6.0-14.0	1.27
58 units-28 units	

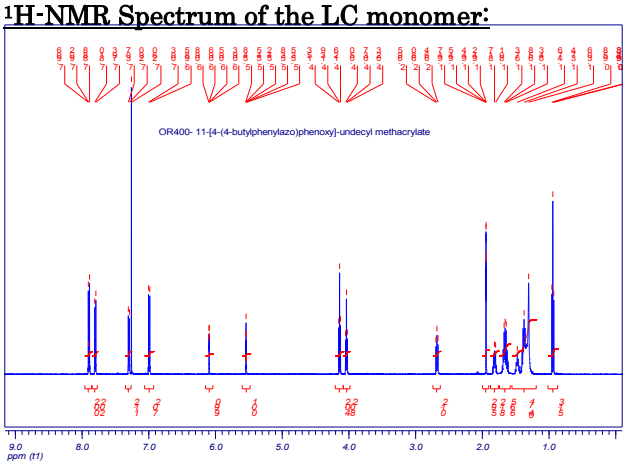
Synthesis Procedure:
Poly(styrene-b-AzoMA) is prepared by ATRP using bromo-terminated polystyrene as the macro-initiator. The scheme of the reaction is illustrated below:



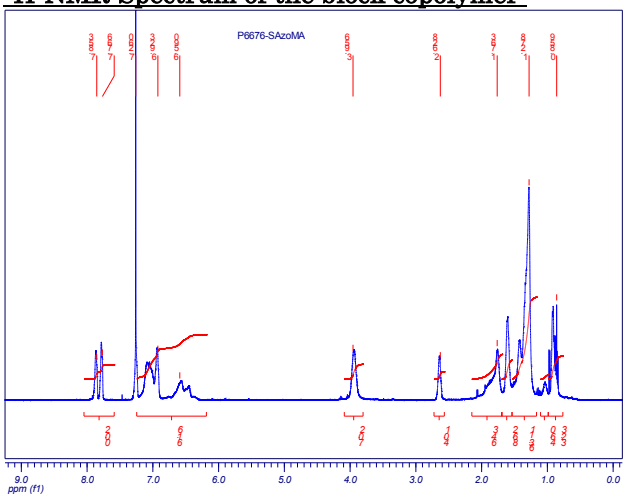
Characterization:
PS-Br and final block copolymer were analyzed by size exclusion chromatography (SEC) to obtain the molecular weight of styrene block and polydispersity index (PDI) for both PS and block copolymer. The final block copolymer composition was calculated from ^{1}H-NMR spectroscopy by comparing the peak area of the styrene protons at about 6.5-7.2 ppm with the benzene ring protons at about 7.8 ppm.

Solubility:
Poly(styrene-b-BPAPOUMA) is soluble in THF, toluene, and chloroform and it precipitates out in hexane or methanol.

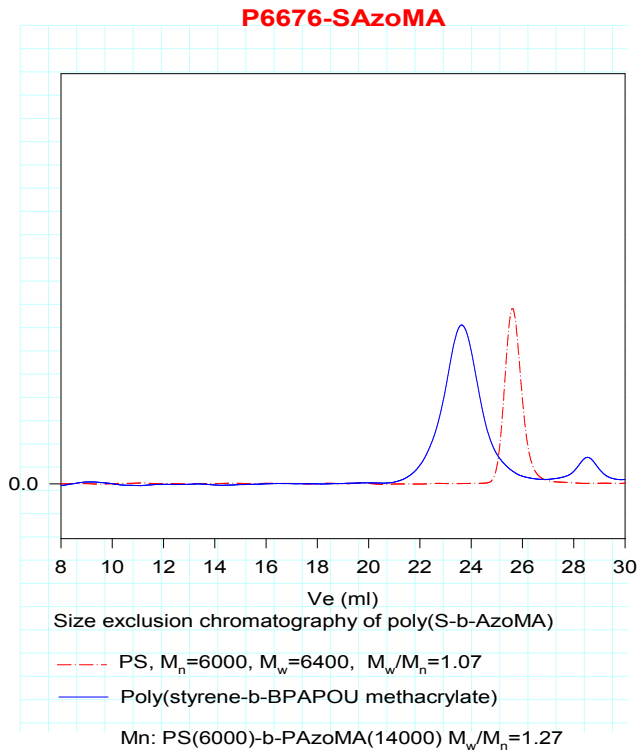
^{1}H-NMR Spectrum of the LC monomer:



^{1}H-NMR Spectrum of the block copolymer:



SEC of the block copolymer:



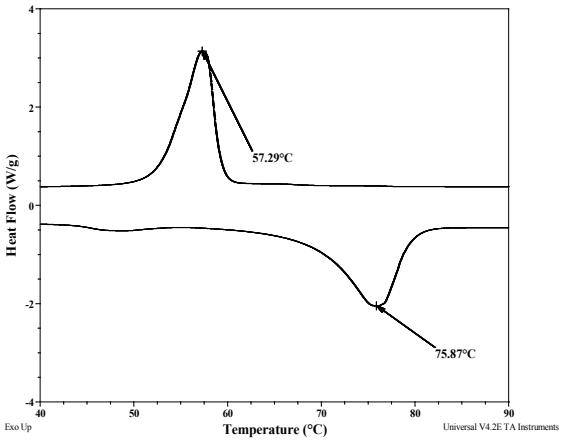
Thermal analysis for sample#6676-SAzoMA

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).

Melting and crystallization curve for the sample

The melting temperature (T_m) was taken as the maximum of the endothermic peak where as the crystallization temperature (T_c) was considered as the minimum of the exothermic peak.

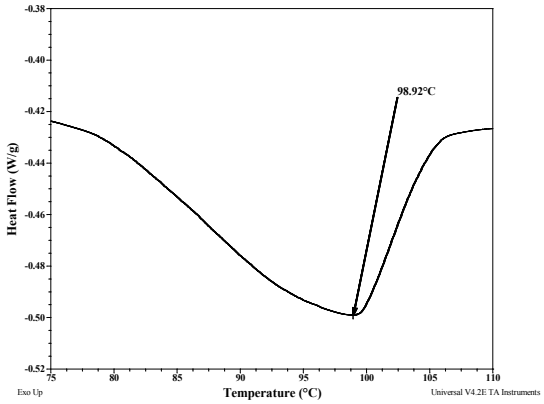
Thermograms for AzoMA monomer



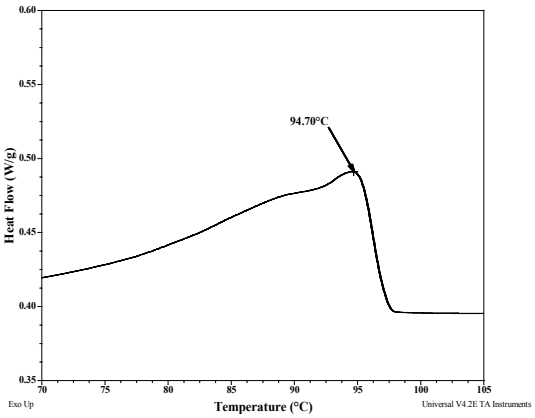
Thermal analysis results at a glance

Sample	T_m (°C)	T_c (°C)	T_g (°C)
AzoMA monomer	76	57	
PAzoMA:	99	95	-
PS block:	-	-	47

Melting curve for AzoMA block:



Crystallization peak for AzoMA block:



Thermogram for PS block: