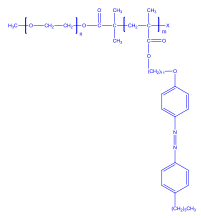
Sample Name: **Poly(ethylene oxide-b-AZoMA)** *(AZoMA=11-[4-(4-butylphenylazo)phenoxy]-undecyl methacrylate)*

Sample #: **P16240B-EOAzoMA**

Structure:



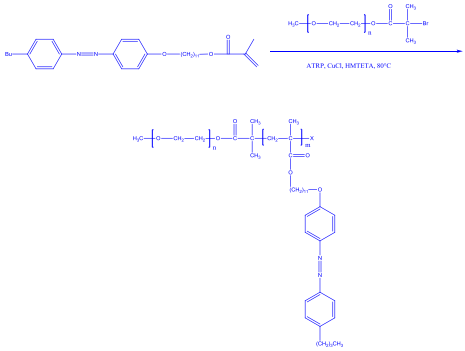
Composition:

Mn x 10^3 PEO-b-PAzoMA	PDI
12.0-b- 32.0	1.9

Melting point, T_{m1} (PEO):	59 °C
Melting point, T_{m2} (PAzoMA):	117 °C

Synthesis Procedure:

Poly(ethylene oxide-b-AZoMA) is prepared by ATRP using bromo-terminated poly(ethylene glycol) as the macro-initiator. The scheme of the reaction is illustrated below:



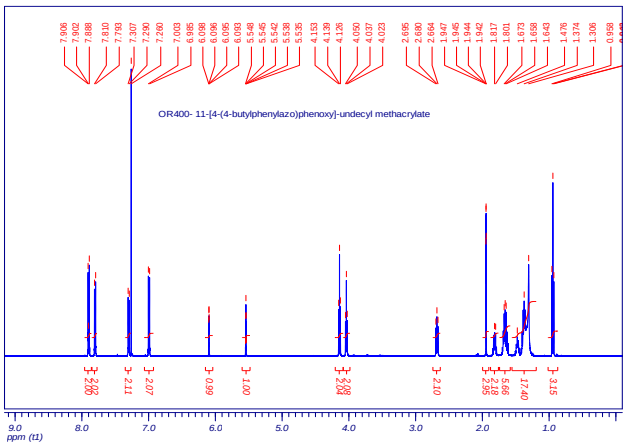
Characterization:

The product was characterized by size exclusion chromatography (SEC) and ^{1}H NMR. The compositions and molecular weight were determined by HNMR analysis. The SEC was used to determine its distribution and absence of PEG starting polymer.

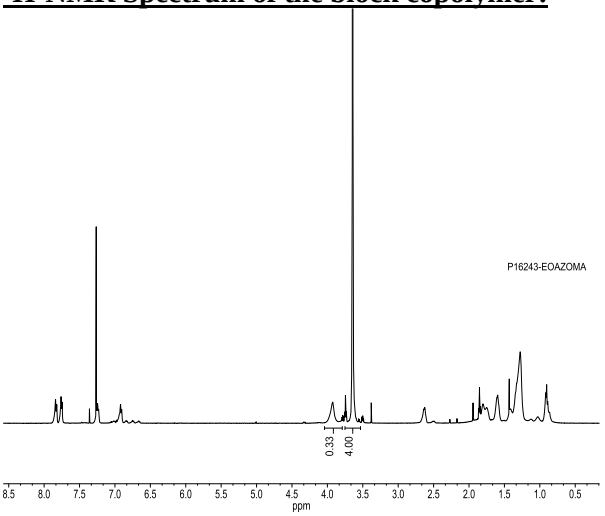
Thermal analysis:

Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere. The glass transition temperature (T_g), melting point (T_m) and crystallization temperature (T_{cr}) of the copolymer were measured at a scan rate of 10°C/min shortly after creating thermal history of the sample.

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



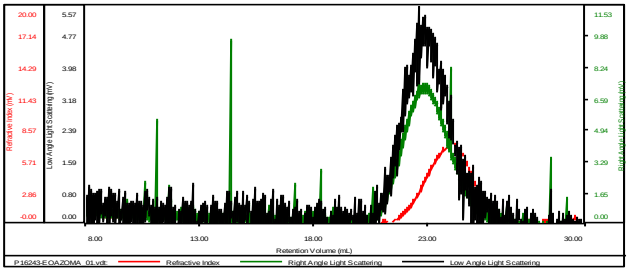
^{1}H-NMR Spectrum of the block copolymer:



SEC of the block copolymer:

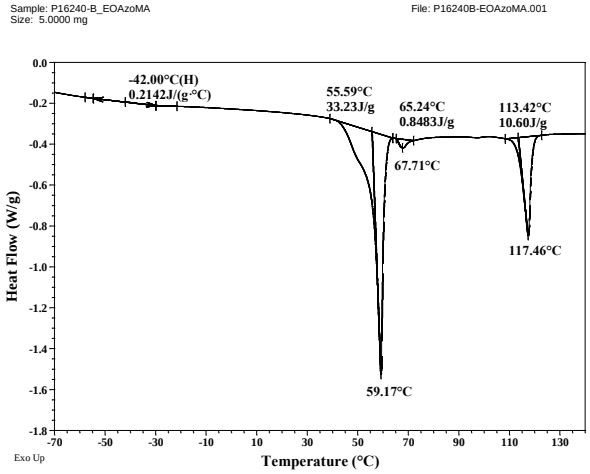
P16243-EOAZOMA

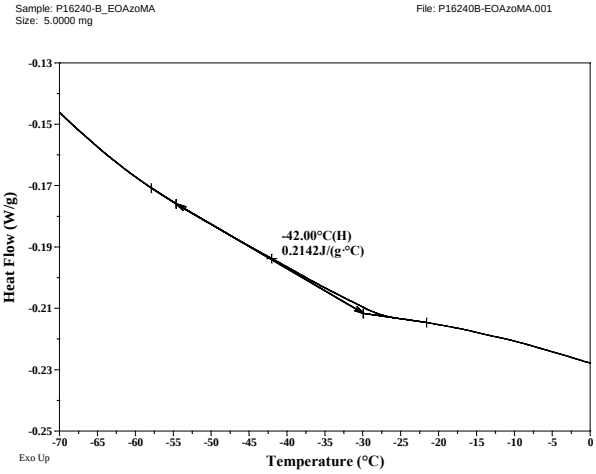
Concentration (mg/mL)	0.6079
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-august2017-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P16243-EOAZOMA_01.vdt	39,438	74,332	1.885	0.1769	36,702

DSC thermogram of the polymer (2nd heating scan, 10°C/min):





DSC thermogram (cooling and heating scans, 10°C/min):