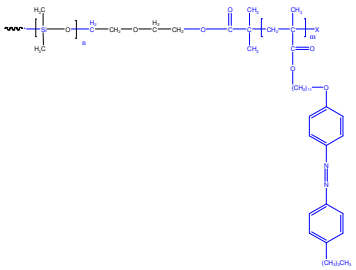
Sample Name: **Poly(dimethylsiloxane-b- AzoMA)**
(AzoMA=11-[4-(4-butylphenylazo)phenoxy]-undecyl methacrylate)

Sample #: **P19783-DMSAzoMA**

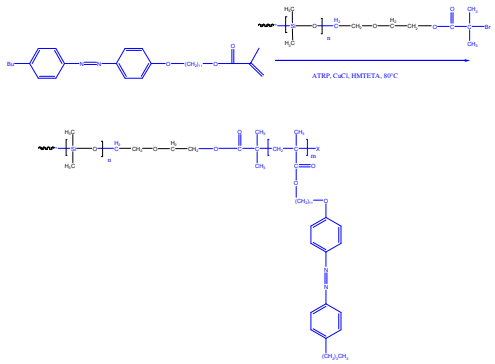
Structure:



Composition:

Mn x 10^3 PDMS-b-PAzoMA	PDI
8.0-b-115.0	1.6

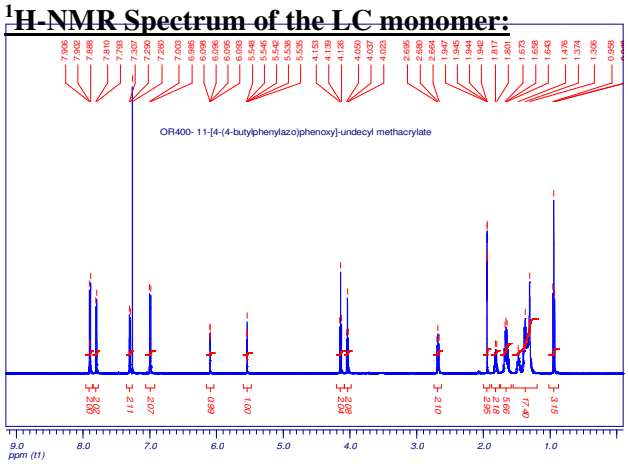
Synthesis Procedure:
Poly(dimethylsiloxane-b-AzoMA) is prepared by ATRP using bromo-terminated polydimethylsiloxane as the macro-initiator. The scheme of the reaction is illustrated below:



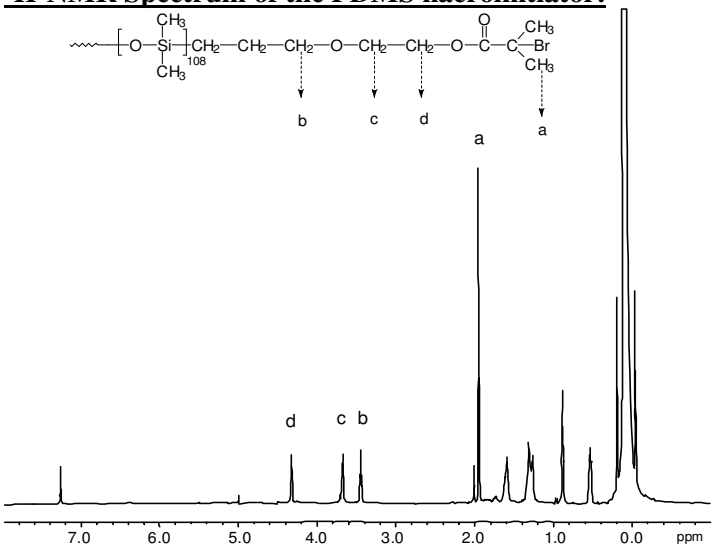
Characterization:
PDMS-Br and final block copolymer were analyzed by size exclusion chromatography (SEC) to obtain the molecular weight of polydimethylsiloxane block and polydispersity index (PDI) for both PDMS and block copolymer. The final block copolymer composition was calculated from ^{1}H-NMR spectroscopy by comparing the peak area of the dimethylsiloxane about 0 pm with the benzene ring protons at about 6.6-7.2ppm.

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

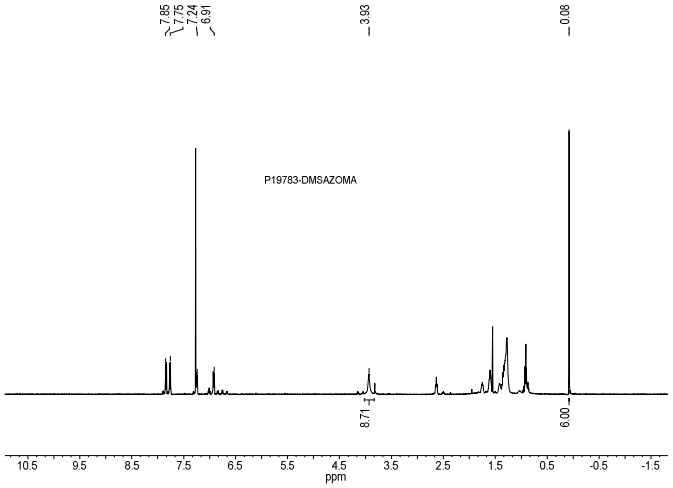
^{1}H-NMR Spectrum of the LC monomer:



^{1}H-NMR Spectrum of the PDMS nacroinitiator:



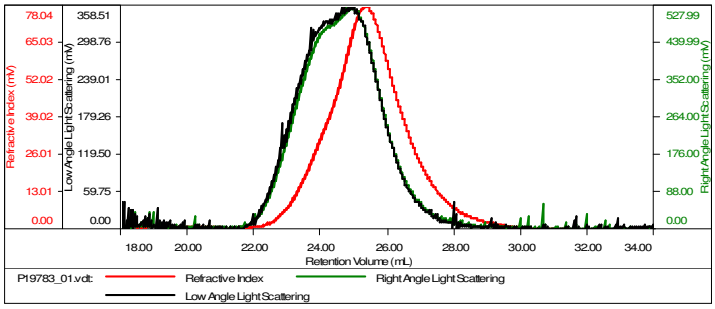
^{1}H NMR ($CDCl_3$) spectrum of monofunctional 2-bromoisobutyryloxy terminated polydimethylsiloxane macroinitiator used for the polymerization (Mn 8000 Mw/Mn 1.09).



SEC elugram of the block copolymer:

Sample ID-P19783-DMSAZOMA

Concentration (mg/mL)	0.3489
Sample dn/dc (mL/g)	0.3420
Method File	PS80K-March2016-0001.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Rh (nm)	Ret Vol (mL)
P19783_01.vdt	191,702	314,412	1.640	2.4883	27.20	25.289

Thermal analysis of the sample# P5655-DMSAzoMA

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).

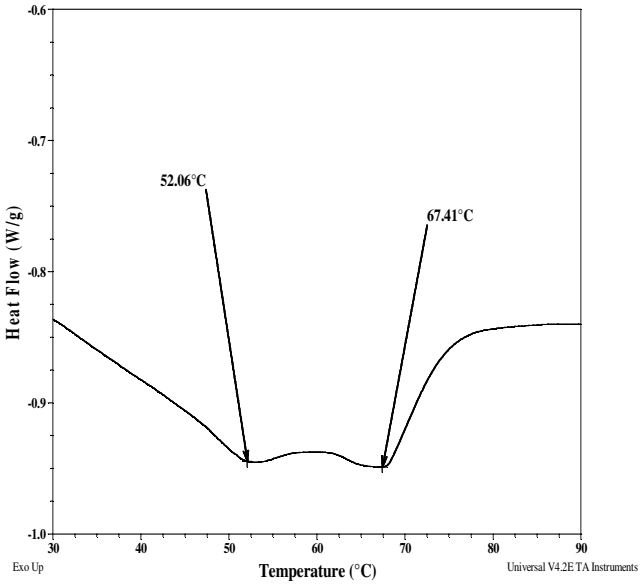
Melting and crystallization curve for the sample

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.

Thermal analysis results at a glance

Sample	T_m (°C)	T_c (°C)	T_g (°C)
AzoMA	67	61	-
DMS	52	47	-71

Melting peaks for DMS and AzoMA blocks:



Crystallization peak for the AzoMA block: