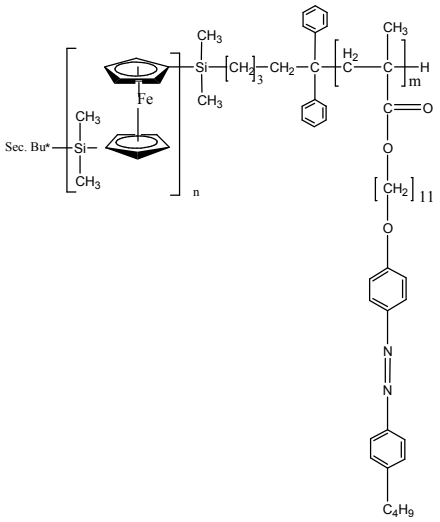
Sample Name:
Poly(ferrocenyldimethylsilane-b-11-(4-4(4-butylphenylazo)phenoxy)-undecyl methacrylate)

Sample #: P9451B-FESAzoMA
Structure:



Composition:

Mn × 10^3 FES-b-AZOMA	Mw/Mn (PDI)
9.5-b-3.5	1. 3
T_g for FES block:	T_g for AZOMA block:

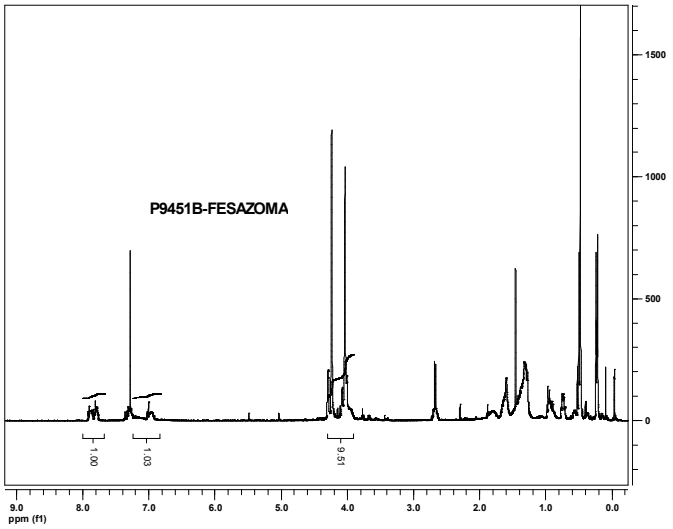
Synthesis Procedure:

Poly(ferrocenyldimethylsilane-b-11-(4-4(4-butylphenylazo)phenoxy)-undecyl methacrylate) is prepared by anionic living polymerization by successive addition of ferrocenyldimethylsilane monomer (FES) followed by the addition of -11-(4-4(4-butylphenylazo)phenoxy)-undecyl methacrylate (AzoMA).

Characterization:
Polymer is analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ^{1}H-NMR spectroscopy by comparing the peak area of the phenyl protons at 6.3-7.2 ppm with the peak area of Si(CH3) at 0.2ppm or Ferrocene protons at 4.0 and 4.2ppm.

Solubility:
Polymer is soluble in THF, $CHCl_3$, toluene and precipitate out from ether and hexanes.

^{1}H NMR spectrum of the sample



SEC profile of the block copolymer

Thermal analysis of the P9451 FESAzOMA

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).

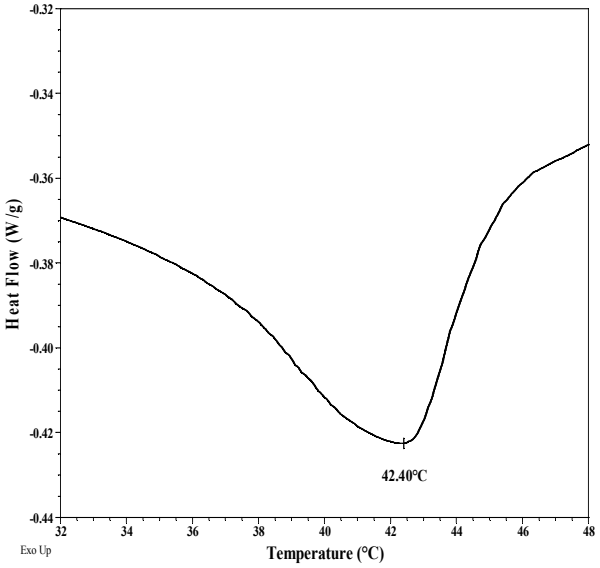
Melting and crystallization curve for the sample

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.

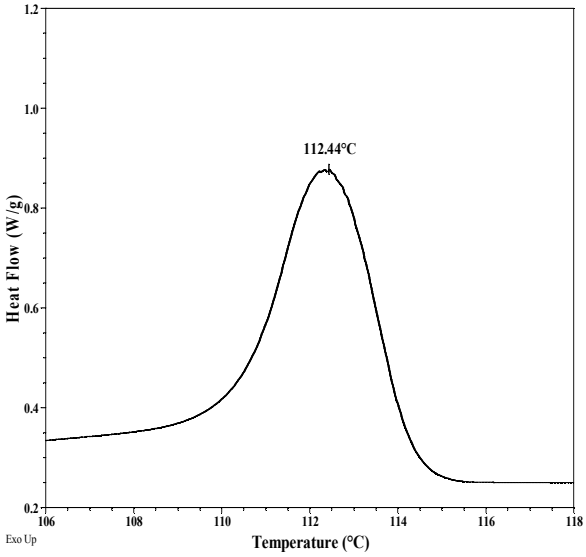
Typical thermal analysis results at a glance:

Sample	T_m (°C)	T_c (°C)	T_g (°C)
SFE	42	-	-
AzoMA	117	112	-

Melting curve for SFE block



Crystallization curve for AzoMA block:



Melting curve for AzOMA block: