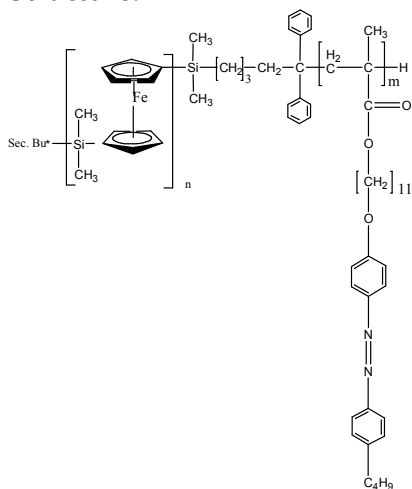


Sample Name:

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

Sample #: P9435-FESAzoMA

Structure:**Composition:**

Mn × 10 ³ FES-b-AZOMA	Mw/Mn (PDI)
13.0-b-6.0	1.25

Synthesis Procedure:

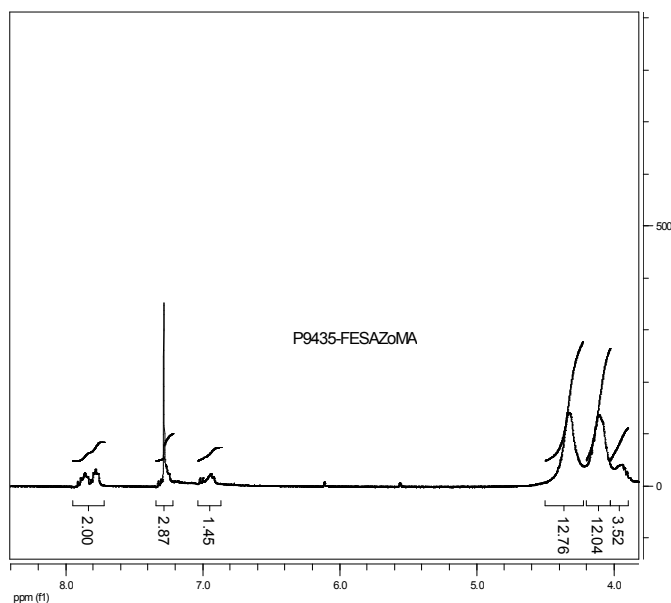
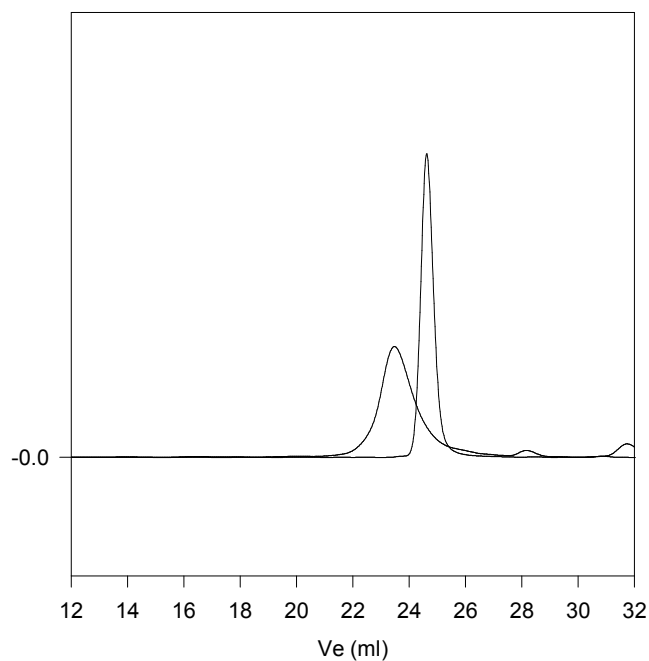
Poly(ferrocenyldimethylsilane-b-11-(4-(4-butylphenylazo)phenoxy)-undecyl methacrylate) is prepared by anionic living polymerization by successive addition of ferrocenyldimethylsilane monomer (FES) followed by the addition of -11-(4-(4-butylphenylazo)phenoxy)-undecyl methacrylate (**AzoMA**)

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 ¹H-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, CHCl₃, Toluene and precipitate out from ether and hexanes.

¹H NMR spectrum of the sample**SEC profile of the block copolymer****P9435-FESAzoMA**

SEC profile of the Block copolymer:

— Poly FES, M_n=13000, M_w=13800, PI=1.06

— Diblock Copolymer FES(13,000)-b-PAzoMA(6,000), PI=1.25

Thermal analysis of the P9435 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).

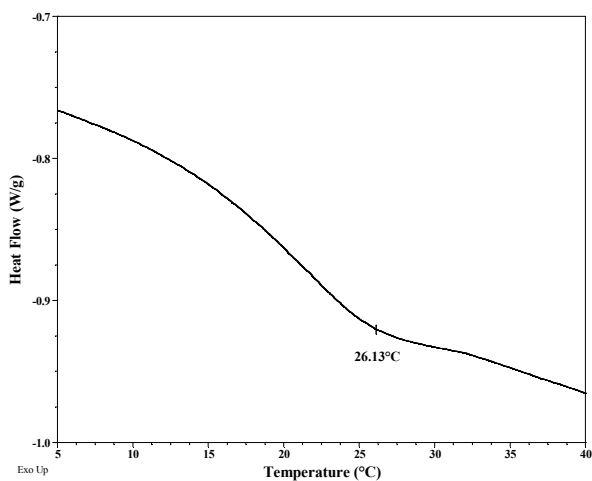
Melting and crystallization curve for the sample

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.

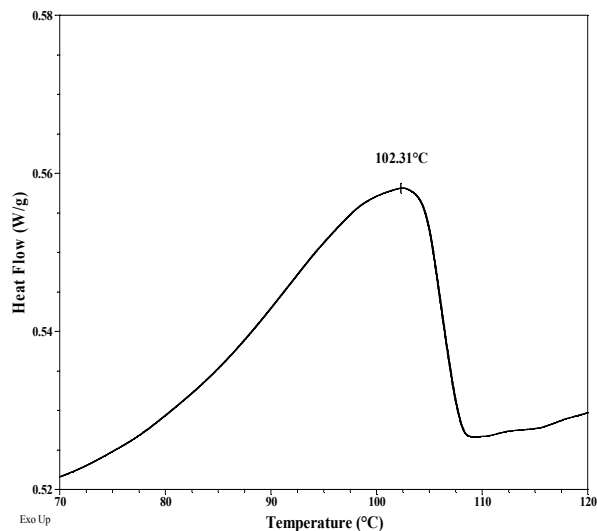
Typical thermal analysis results at a glance:

Sample	T_m (°C)	T_c (°C)	T_g (°C)
SFE	26	-	-
AzoMA	128	102	-

Melting curve for SFE block



Crystallization curve for AzoMA block:



Melting curve for AzOMA block:

