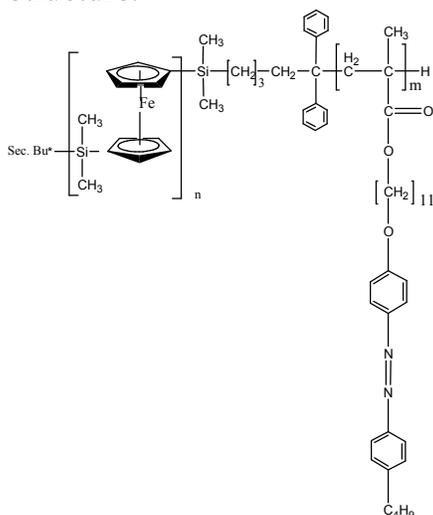


Sample Name:

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

Sample #: P9430-FESAzoMA

Structure:**Composition:**

$M_n \times 10^3$ FES-b-AZOMA	Mw/Mn (PDI)
8.5-b-2.0	1.3
T_g for FES block:	T_g for AZOMA block:

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:

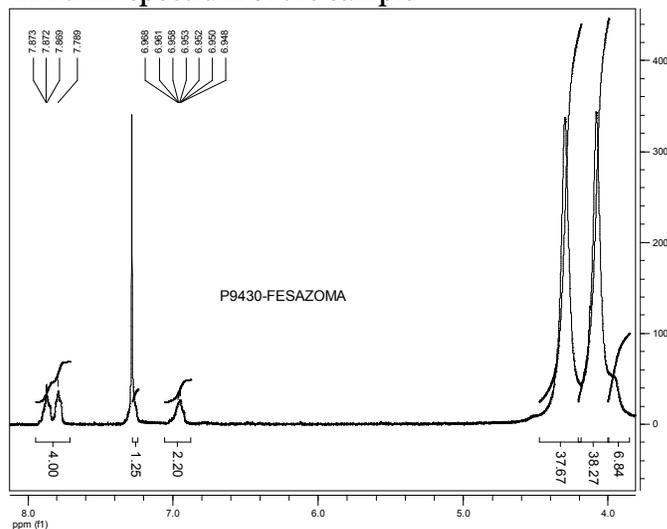
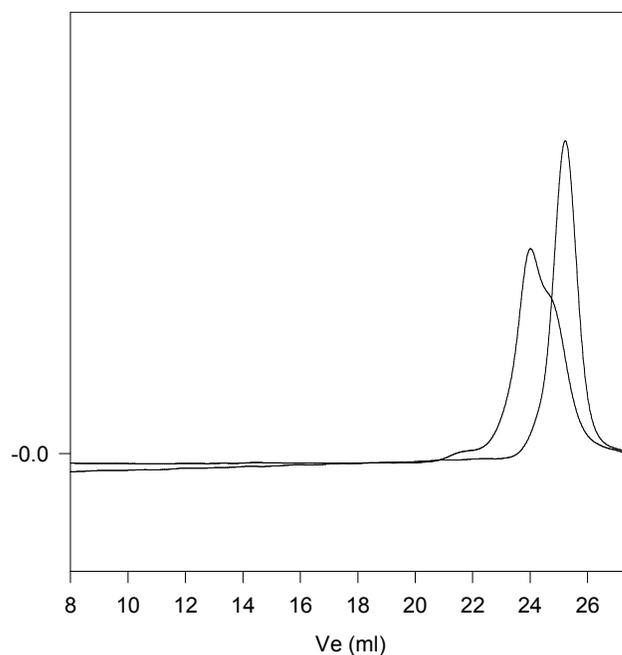
Polymer is analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from $^1\text{H-NMR}$ spectroscopy by comparing the peak area of the phenyl protons at 6.3-7.2 ppm with the peak area of Si(CH₃)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

Thermal analysis:

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).

Solubility:

Polymer is soluble in THF, CHCl₃, Toluene and precipitate out from ether and hexanes.

 $^1\text{H NMR}$ spectrum of the sample**SEC profile of the block copolymer****P9430-FESAzoMA****SEC profile of the Block copolymer:**

— Poly FES, $M_n=8500$, $M_w=7,200$, PI=1.2

— Diblock Copolymer FES(8500)-b-PAzoMA(2,000), PI=1.3