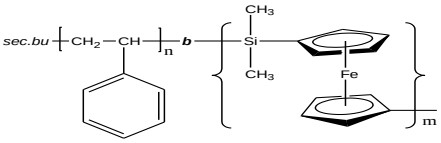
Sample Name:
Poly(styrene-b-ferrocenyldimethylsilane)

Sample #: **P10019-SFES**

Structure:



Composition:

Mn ×10^3 S-b-FES	Mw/Mn (PDI)
38.0-b-11.0	1.25

Synthesis Procedure:

Poly(styrene-b- ferrocenyldimethylsilane**)** is prepared by anionic living polymerization by successive addition of styrene followed by the addition of ferrocenyldimethylsilane monomer.

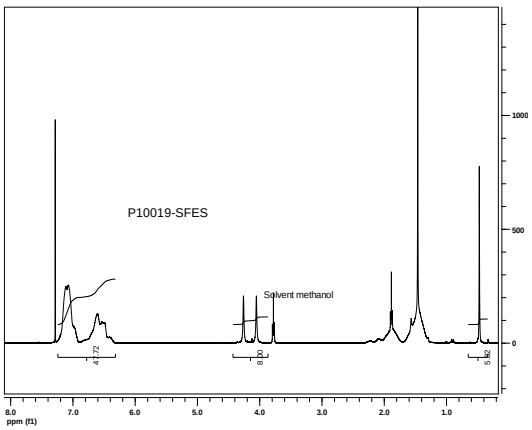
Characterization:

An aliquot of the polystyrene block was terminated before addition of hexamethyl cyclotrisiloxane and 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 styrene protons at 6.3-7.2 ppm with the peak area of Si(CH3) at 0.2ppm.

Solubility:

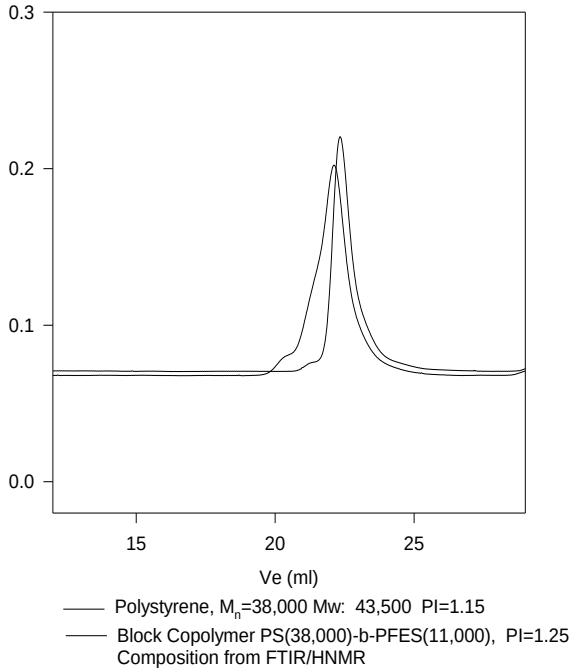
Polymer is soluble in THF, $CHCl_3$, Toluene and precipitate out from ether and hexanes.

^{1}H NMR spectrum of the sample:



SEC profile of the block copolymer:

P10019-SFES



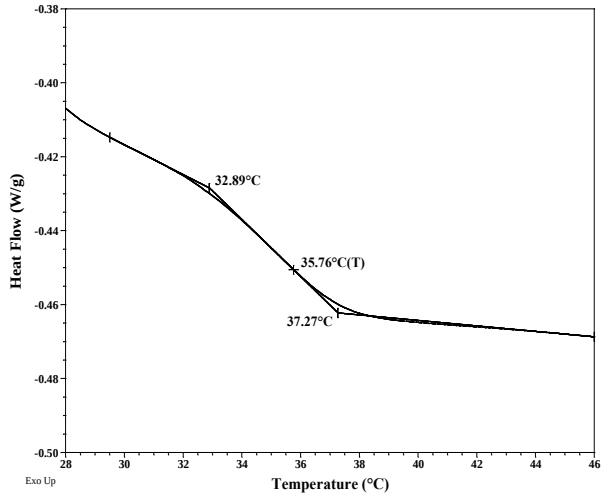
Thermal analysis of the sample P10019-SFES

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10ºC/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).

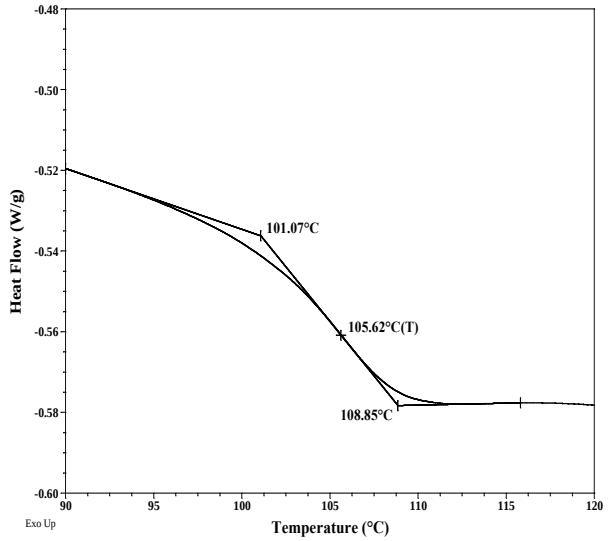
Melting and crystallization curve for the sample

The melting temperature (Tm) was taken as the maximum of the endothermic peak where as the crystallization temperature (Tc) was considered as the minimum of the exothermic peak.

Thermogram for FES block



Thermogram for PS block



Thermal analysis results at a glance

For PS block		
T_g: 106 ºC	T_m: -	T_c: -
For FES block		
T_g: 36ºC	T_m: 139ºC	T_c: 104 ºC