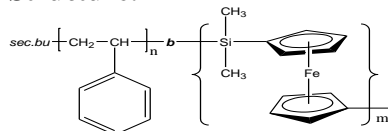


**Sample Name:**  
**Poly(styrene-b-ferrocenyldimethylsilane)**

**Sample #: P10029C-SFES**

**Structure:**



**Composition:**

| Mn $\times 10^3$ | Mw/Mn (PDI) |
|------------------|-------------|
| S-b-FES          |             |
| 89.0-b-10.0      | 1.2         |

**Synthesis Procedure:**

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

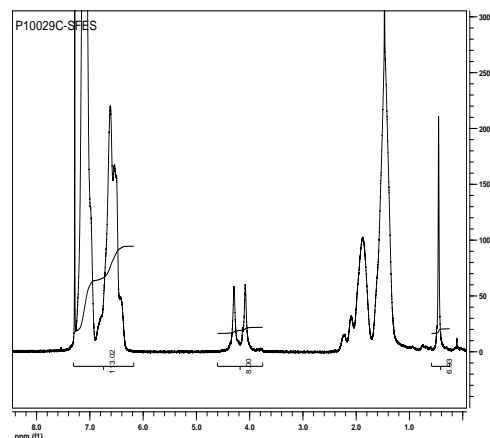
**Characterization:**

An aliquot of the polystyrene block was terminated before addition of hexamethylcyclotrisiloxane and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from  $^1\text{H-NMR}$  spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area of  $\text{Si}(\text{CH}_3)$  at 0.2 ppm.

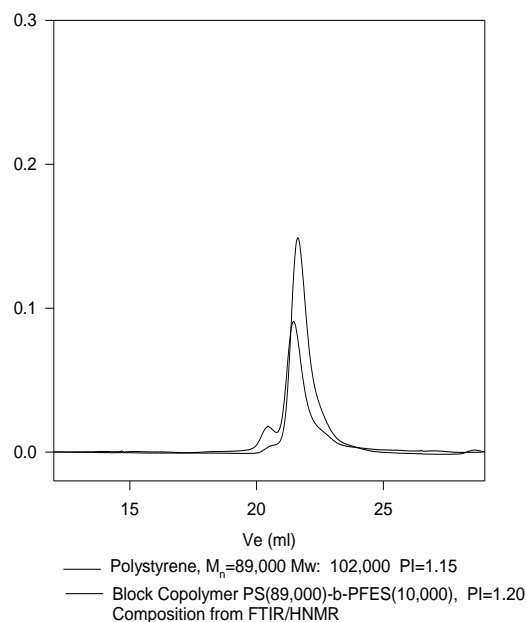
**Solubility:**

Polymer is soluble in THF,  $\text{CHCl}_3$ , Toluene and precipitate out from ether and hexanes.

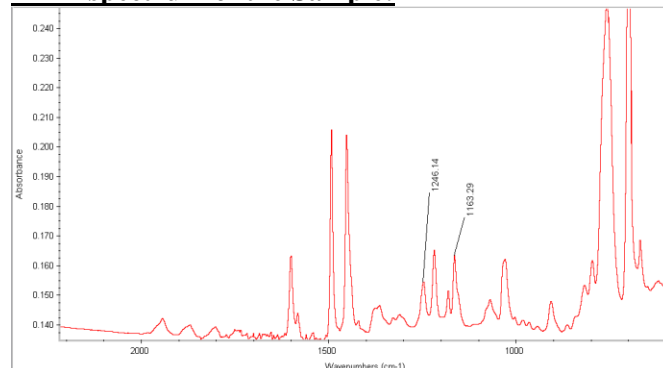
**$^1\text{H}$  NMR spectrum of the sample:**



**SEC profile of the block copolymer:**



**FTIR spectrum of the Sample:**



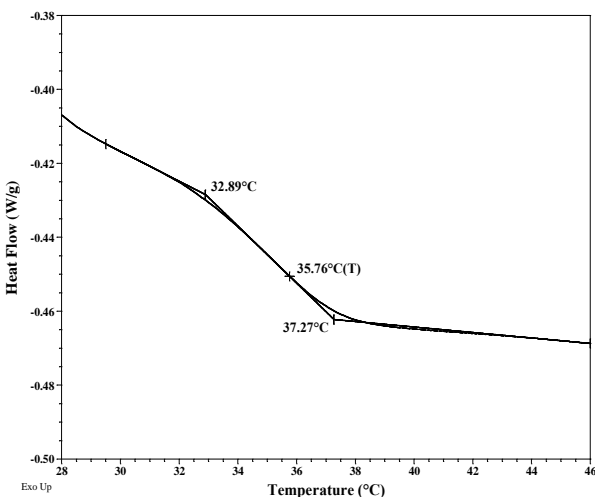
## Thermal analysis of the sample P10029C-SFES

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 ( $T_g$ ).

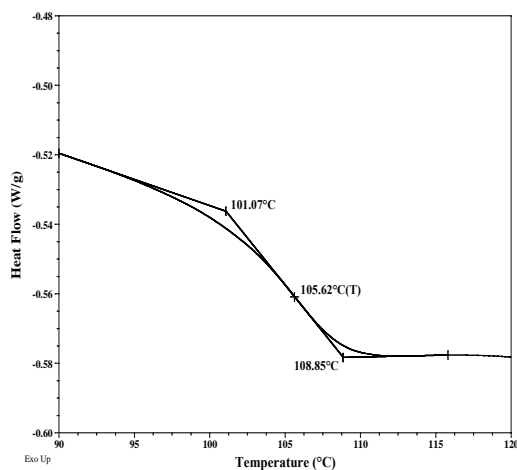
## Melting and crystallization curve for the sample

The melting temperature ( $T_m$ ) was taken as the maximum of the endothermic peak whereas the crystallization temperature ( $T_c$ ) 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 °C | $T_m$ : -     | $T_c$ : -      |
| For FES block  |               |                |
| $T_g$ : 36°C   | $T_m$ : 139°C | $T_c$ : 104 °C |