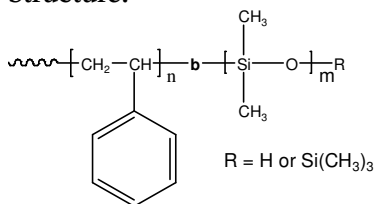


**Sample Name:**

Poly(styrene-b-dimethyl siloxane)

**Sample #:** P2331-SDMS (R=H)**Structure:****Composition:**

Mn x 10 <sup>3</sup> S-b-DMS	Mw/Mn (PDI)
1.4-b-0.4	1.8
T <sub>g</sub> for PS block: 81°C	DMS block: T <sub>m</sub> : -45°C; T <sub>c</sub> : -76°C; T <sub>g</sub> : -121°C (Lit.)

**Synthesis Procedure:**

Poly(styrene-b-dimethyl siloxane) is prepared by living anionic polymerization with sequence addition of styrene followed by hexamethyl cyclotrisiloxane. For the details please see the references.

**Characterization:**

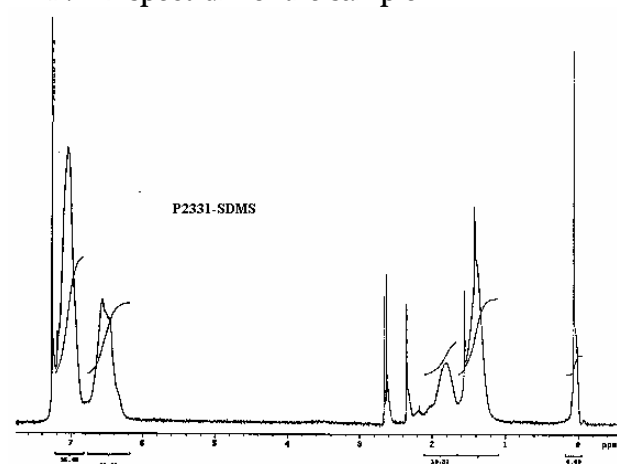
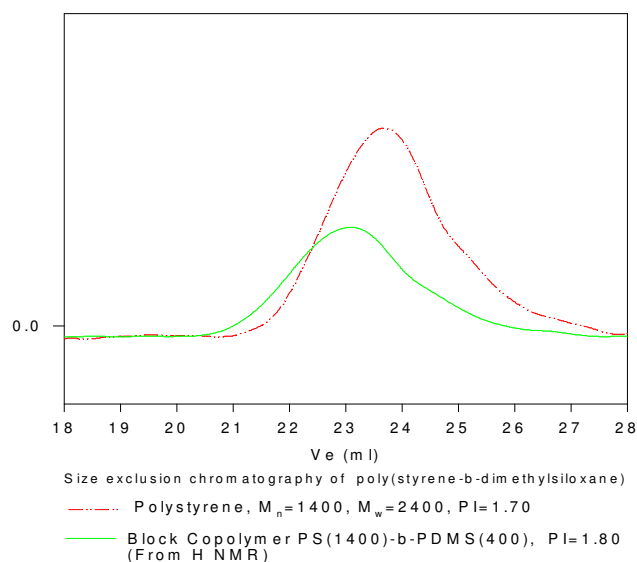
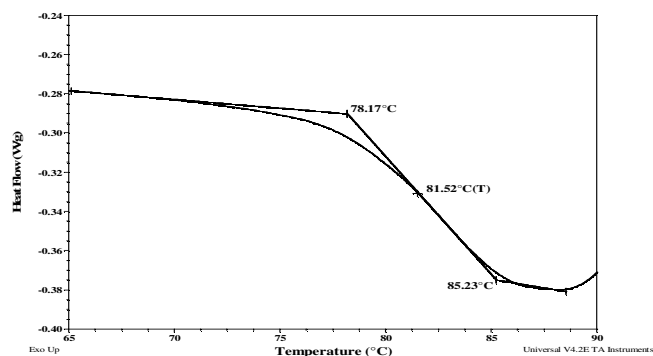
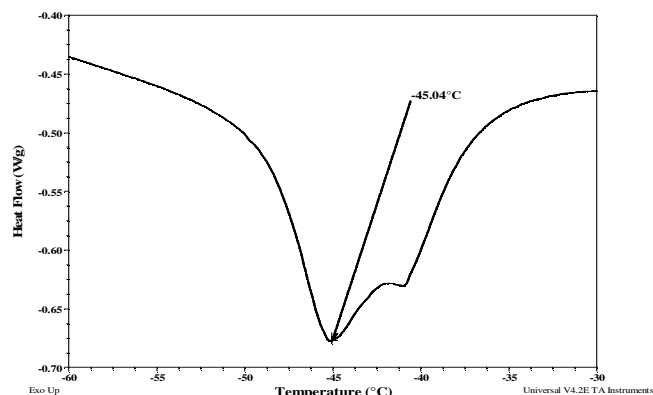
An aliquot of the polystyrene block was terminated before addition of hexamethyl cyclotrisiloxane and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area of siloxane protons near 0.13 ppm. Block copolymer PDI is determined by SEC.

**Thermal analysis:**

Thermal analysis of the samples was carried out on a TA Q100 DSC at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow was considered as the glass transition temperature (T<sub>g</sub>). The melting temperature (T<sub>m</sub>) was taken as the maximum of the endothermic peak and crystallization temperature (T<sub>c</sub>) was considered as the minimum of the exothermic peak.

**Solubility:**

Poly(styrene-b-dimethyl siloxane) is soluble in CHCl<sub>3</sub>, toluene, THF.

**<sup>1</sup>H NMR spectrum of the sample****SEC profile of the block copolymer****P2331-SDMS****Thermogram for PS block:****Melting curve for DMS block:****Crystallization curve for DMS block:**