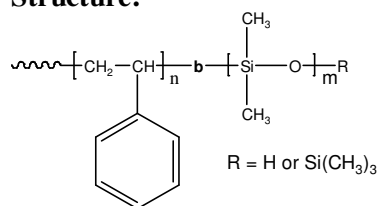


Sample Name:
Poly(styrene-b-dimethyl siloxane)

Sample #: **P208-SDMS (R=H)**

Structure:



Composition:

Mn x 10 ³ S-b-DMS	Mw/Mn (PDI)
284.0-b-1.3	1.07
T _g for PS block: 106°C	T _g for DMS block: -127°C (Lit. value)

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 consult the references.

Characterization:

The polymer was characterized by SEC and ¹H NMR

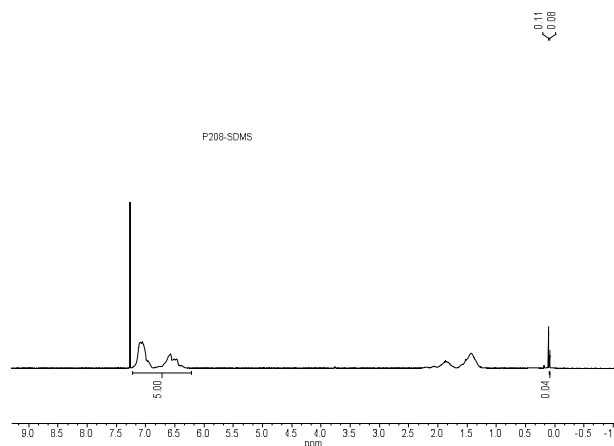
Thermal analysis

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 20°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:

Poly(styrene-b-dimethyl siloxane) is soluble in CHCl₃, toluene, THF.

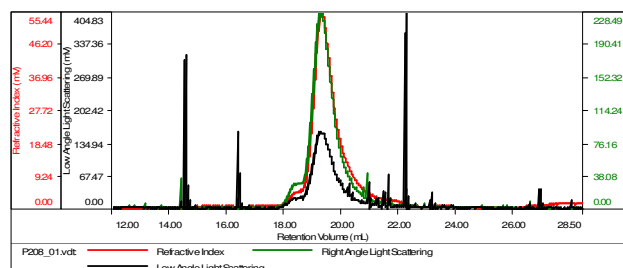
¹H NMR



SEC profile of the block copolymer

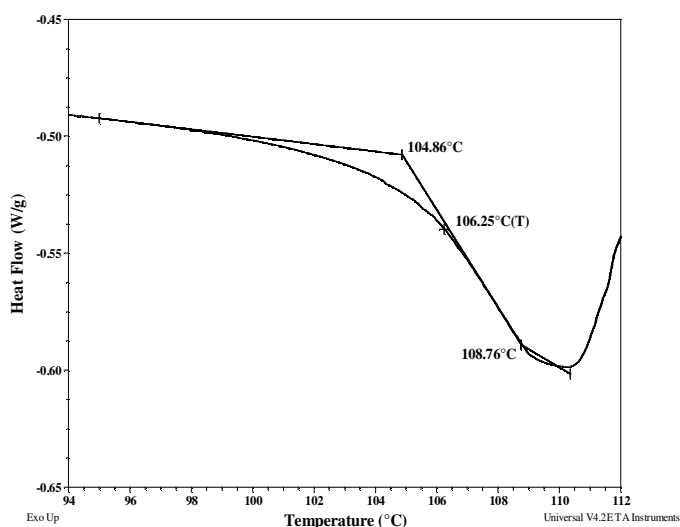
Sample ID-P208-SDMS

Concentration (mg/mL)	0.2971
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-June30-2015-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P208_01.volt	284,266	300,072	313,184	1.056	3.9754

Thermogram for PS block:



References:

A) S. K. Varshney, D. N. Khanna
"Hexamethylcyclotrisiloxane-Styrene Block
Copolymers and their Chemical Composition" *CA Vol. 093, 26, 240325, J. Appl. Polym. Sci., 1980, 25, 2501-2511.* B) P. Bajaj, S. K. Varshney, "Morphology and Properties of Poly(Dimethylsiloxane-b-Styrene-b-Dimethylsiloxane) Polymers" *CA Vol. 093, 02, 008652, Polymer, 1980, 21, 201-206.* (C) S. K. Varshney, C. L. Beatty "Synthesis and Characterization of Polymethylmethacrylate and Polydimethylsiloxane Block Copolymers Polymerizes with an Organometallic Initiator" *Org. Coat. Appl. Polym. Sci., 1981, 45, 151-157.* D). S. K. Varshney, C. L. Beatty, and P. Bajaj "Morphology and Properties of Styrene and Dimethylsiloxane Triblock and Multiblock Copolymers" *CA Vol. 098, 139, 017855, Am. Chem. Soc. Polym. Prepr., 1981, 22, 321-323.*