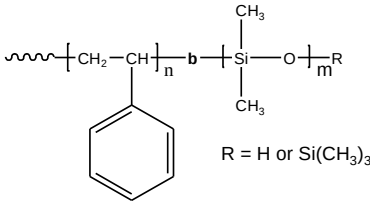
Sample Name: **Poly(styrene-b-dimethyl siloxane)**

Sample #: **P41334-SDMS (R=H)**

Structure:



Composition:

Mn x 10^3 S-b-DMS	Mw/Mn (PDI)
29.0-b-19.0	1.05
Tg for PS block: 77 °C	Tg for DMS block: -127°C (Lit. value)

Synthesis :

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.

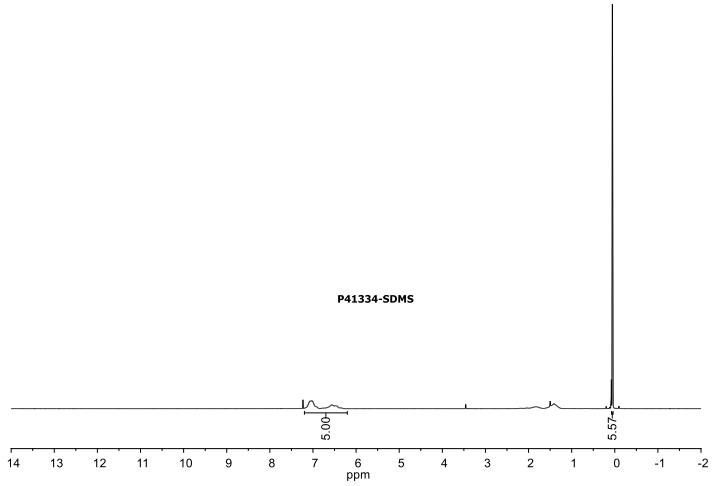
Characterization:

The product was characterized by size exclusion chromatography (SEC) and ^{1}H NMR.

Solubility:

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

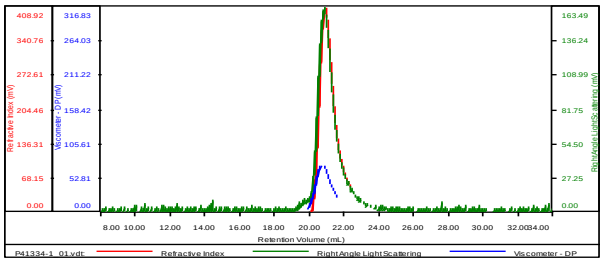
^{1}H NMR spectrum of the sample:



SEC profile of the S block:

P41334-S

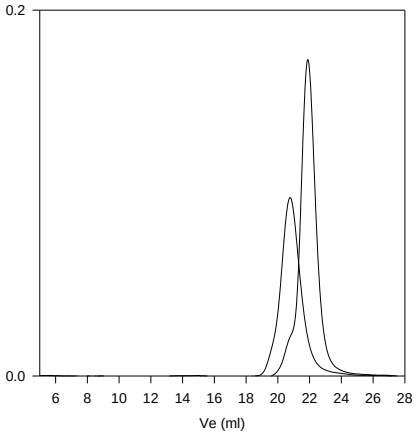
Concentration (mg/mL)	15.6538
Sample dn/dc (mL/g)	0.1850
Method File	PS80K_2017-12-21-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P41334-1_01.vdt	29,135	29,647	1.018	0.1314	29,411

SEC profile of the block copolymer:

P41334-SDMS



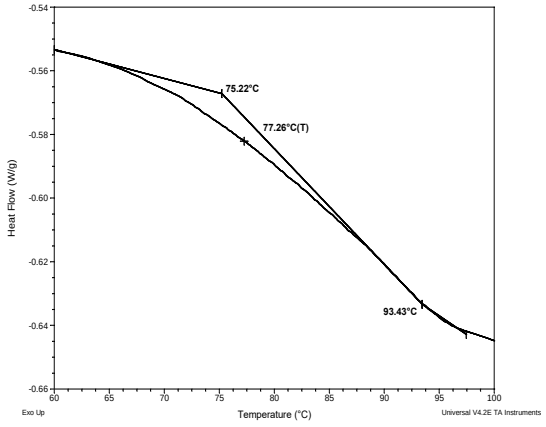
Size exclusion chromatography of poly(styrene-b-dimethylsiloxane)

—— Polystyrene, M_n=29,000, M_w=29,800, M_w/M_n=1.02

—— Poly(styrene-b-dimethylsiloxane)

M_n: PS(29,000)-b-PDMS(19,000) M_w/M_n=1.05

DSC 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.*