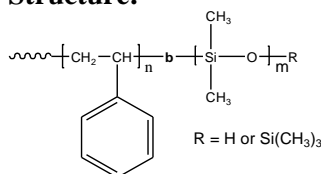


Sample Name: Poly (styrene-b-dimethyl siloxane)

Sample #: P41356-SDMS (R=H)

Structure:



Composition:

Mn x 10 ³ S-b-DMS	Mw/Mn (PDI)
27.0-b-18.0	1.08
Tg for PS block: 83 °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.

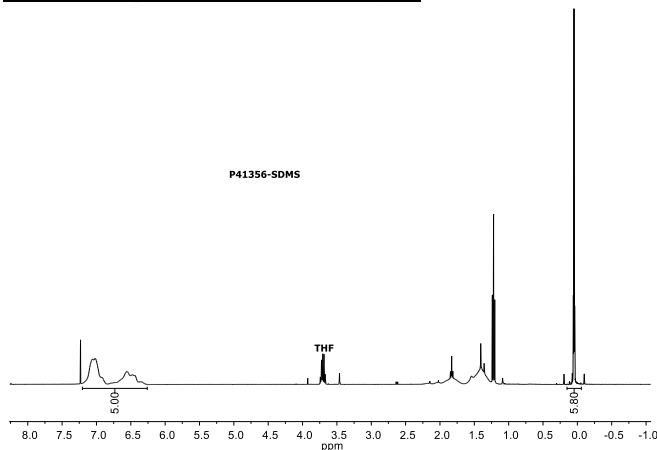
Characterization:

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

Solubility:

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

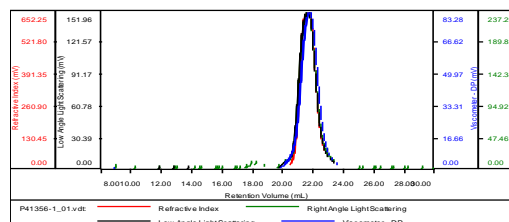
¹H NMR spectrum of the sample:



SEC profile of the S block:

P41356-1

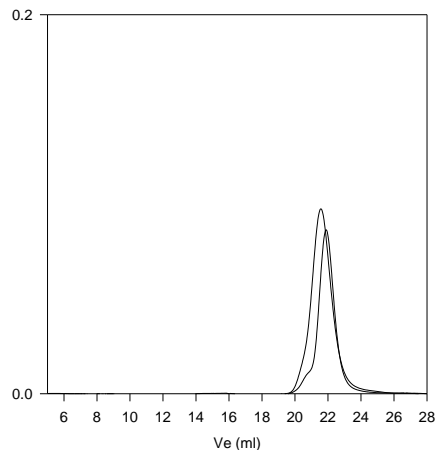
Concentration (mg/mL)	29.3636
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-sept-2018-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P41356-1_01.vdt	26,763	27,678	1.034	0.1204	26,199

SEC profile of the block copolymer:

P41356-SDMS



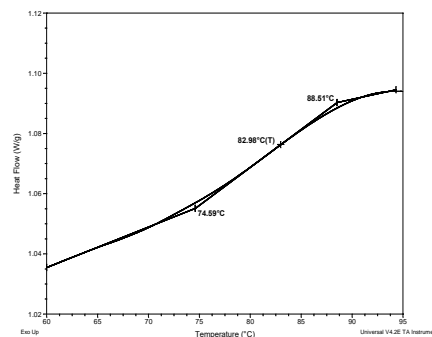
Size exclusion chromatography of poly(styrene-b-dimethylsiloxane)

— Polystyrene, M_n=27000, M_w=27,800, M_w/M_n=1.03

— Poly(styrene-b-dimethylsiloxane)

M_n: PS(27,000)-b-PDMS(18,000) M_w/M_n=1.08

Thermogram for PS block:



References:

- 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.*
- 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.*