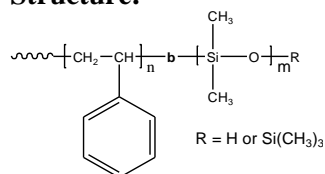


Sample Name: Poly(styrene-b-dimethyl siloxane)

Sample #: P41350L-SDMS (R=H)

Structure:



Composition:

Mn x 10 ³ S-b-DMS	Mw/Mn (PDI)
30.0-b-35.0	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.

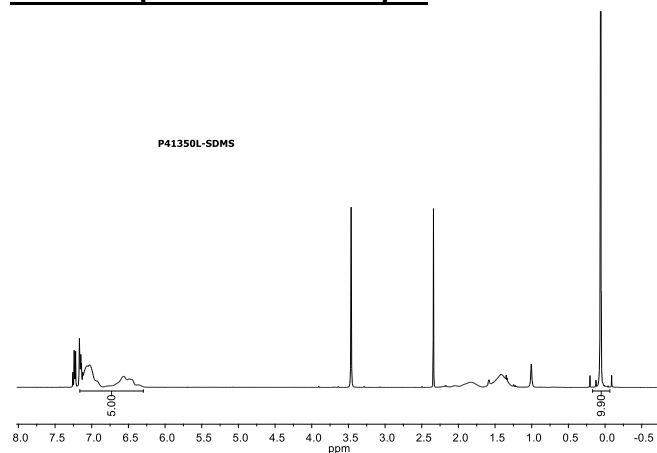
Characterization:

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

Solubility:

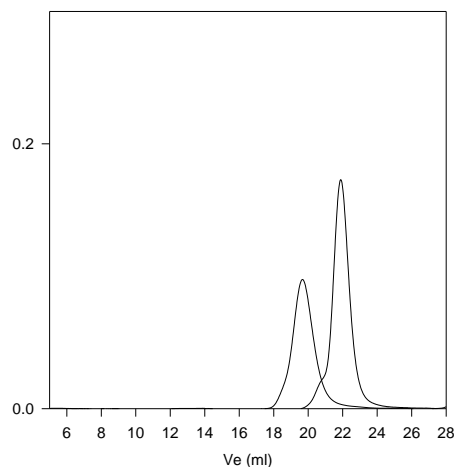
Poly(styrene-b-dimethyl siloxane) is soluble in CHCl₃, toluene, and THF.

¹H NMR spectrum of the sample:



SEC profile of the block copolymer:

P41350L-SDMS



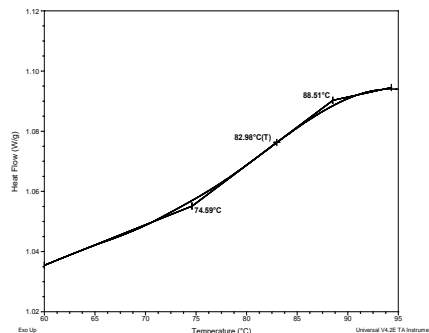
Size exclusion chromatography of poly(styrene-b-dimethylsiloxane)

— Polystyrene, M_n=30,000, M_w=30,800, M_w/M_n=1.02

— Poly(styrene-b-dimethylsiloxane)

M_n: PS(30,000)-b-PDMS(35,000) M_w/M_n=1.08

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.