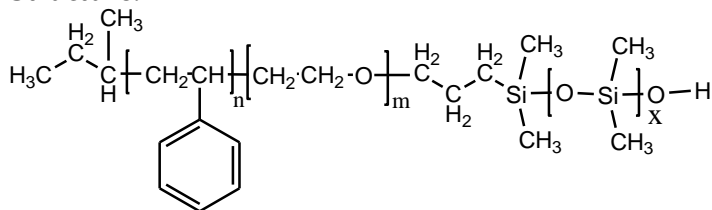


Sample Name: Poly(styrene-b-ethylene oxide-b-dimethylsiloxane)

Sample #: P18990-SEODMS

Structure:



Composition:

Mn x 10 ³ S-b-EO-b-DMS	PDI
1.3-b-5.6-7.0	1.14

Synthesis Procedure:

Poly(styrene-b-ethylene oxide-b-Dimethylsiloxane) triblock copolymer is prepared by living anionic polymerization.

Characterization:

The molecular weight and polydispersity index (PDI) of the block copolymer are characterized by size exclusion chromatography (SEC). The composition of the block copolymer was calculated from ¹H-NMR by comparing the peak area of the phenyl polystyrene protons between 6.4 to 7.2 ppm and the ethylene oxide protons at 3.65 ppm.

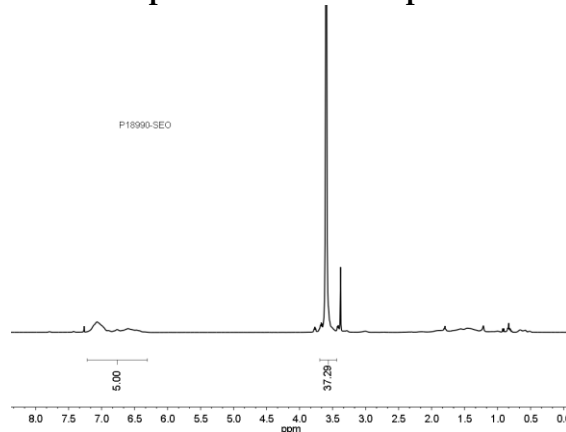
Solubility:

The polymer is soluble in THF (at 35 °C), CHCl₃, benzene, toluene, dioxane.

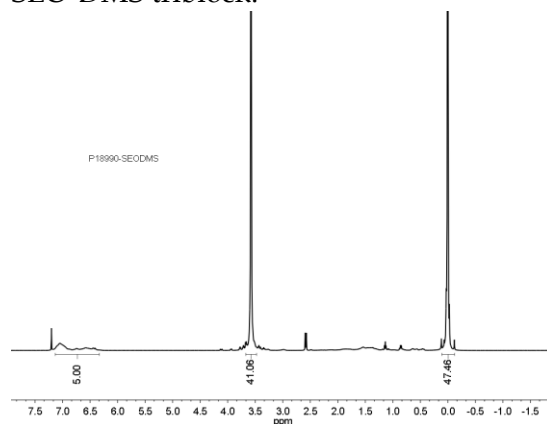
Purification of the Polymer:

Since these polymers are synthesized using modification of terminal hydroxyl group of PS-b-EO. The unreacted diblock copolymer or any homopDMS fractions were removed from solvent-non solvent precipitation. Polymer solution was eluted from a column packed with neutral Al₂O₃. Polymer was precipitated from cold hexane. Polymer was dried at 60 oC under vacuum.

¹H NMR spectrum of the sample:SEO diblock

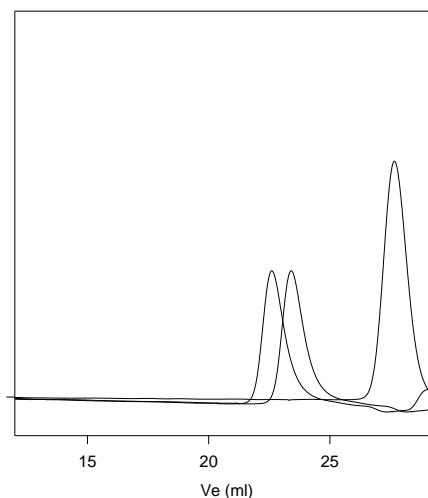


SEO-DMS triblock:



SEC profile of the block copolymer

P18990-SEODMS



Size exclusion chromatography of poly(styrene-b-ethylene oxide)

— Poly(styrene), M_n=1300, M_w=1500, PI=1.12
 — Block Copolymer PSt(1300)-b-PEO(5600), PI=1.10
 — S-b-EO-b-DMS: 1300-b-5600-b-7,000 Mw/Mn 1.14
 The composition determined from HNMR.