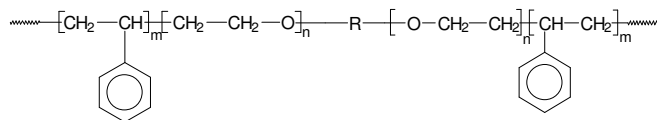


Sample Name:

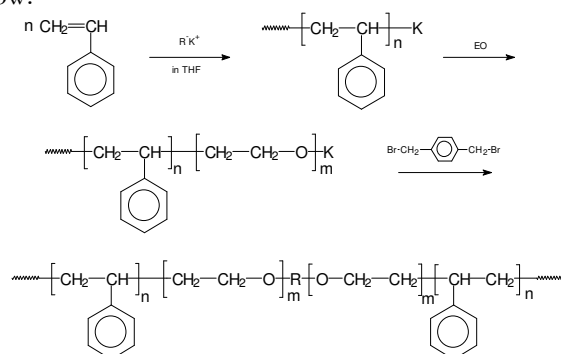
Poly(styrene-b-ethylene oxide-b-styrene))

Sample #: P18610A-SEOS**Structure:****Composition:**

Mn x 10 ³ S-b-EO-b-S	PDI
12.5-b-70.0-b-12.5	1.25

Synthetic Procedure:

The detailed synthesis of this polymer has been reported.¹ The triblock copolymer was prepared by coupling reaction of poly(styrene-b-ethylene oxide) anion with α - ω -dibromoxylene. The scheme of the reaction is presented below:

**Characterization:**

Polymer was analyzed by size exclusion chromatography (SEC) and by NMR.

Solubility:

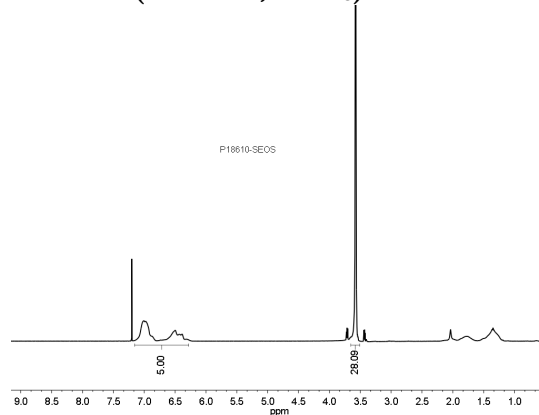
The polymer is soluble in THF, toluene, and CHCl₃.

Purification of the polymer to remove unlinked fraction:

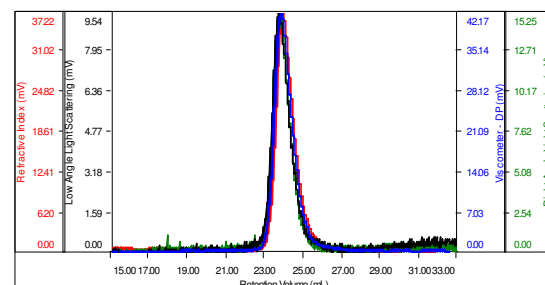
Product was purified to remove the unlinked fraction of the diblock copolymer by passing the polymer solution (by taking different solvent mixture) through Silica column to remove unlinked fraction of Poly(St-b-EO).

References:

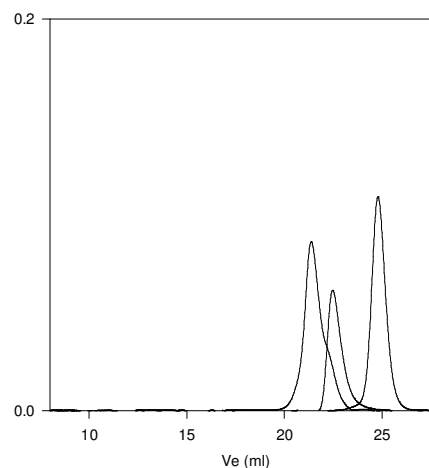
1. S.K. Varshney, Xing Fu, Zhong, P. Kesani, N.Varshney; "Architecturally control polymers from Academia to the Industry"; ACS-Symposium, Orlando, August, 1996.

¹H-NMR (500 MHz, CDCl₃)**SEC:****Sample ID: P18610-SEO diblock copolymer**

Concentration (mg/mL)	0.9797
Sample dilution (mL/g)	0.1000
Method File	PS80K-March13-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18610-SEO_01.vdt	44,368	48,903	48,396	1.102	0.9538

P18610A-SEOS

Size Exclusion Chromatography:

- Polystyrene, M_n=12,500, PI=1.05
- Block Copolymer Polystyrene-b-Poly(ethylene oxide)
- Mw: PS(12,500)-b-PEO(35,000), PI=1.08
- After Linking Reaction:
- PS-b-EO-b-S: Mn 12,500-b-70,000-b-12,500 Mw/Mn 1.25