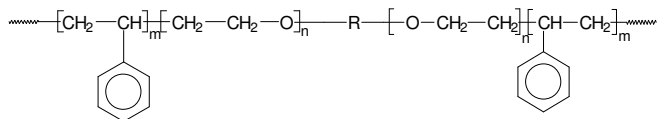


### Sample Name:

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

Sample #: P18574-SEOS

### Structure:



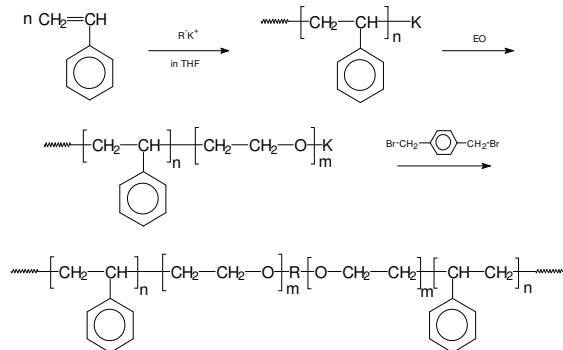
### Composition:

Mn x 10 <sup>3</sup> S-b-EO-b-S	PDI
9.0-b-20.0-9.0	1.09
Contain < 20% unlinked fraction	

### Synthesis Procedure:

The detail synthesis of such polymer has been reported.<sup>1</sup>

The triblock copolymer was prepared by a coupling reaction of poly(styrene-b-ethylene oxide) anion with  $\alpha$ - $\omega$ -dibromoxylene. The scheme of the reaction is illustrated below:



### Characterization:

Polymer analyzed by size exclusion chromatography and by HNMR..

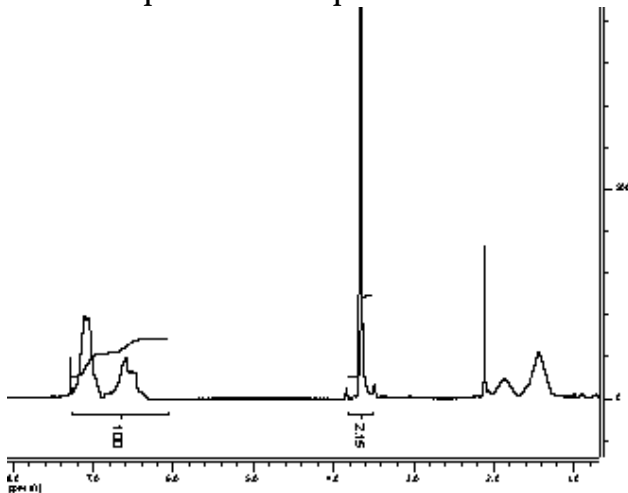
### Solubility:

The polymer is soluble in THF, toluene, and CHCl<sub>3</sub>.

### 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) by taking advantage of the end group (OH) present in the diblock copolymer. This is a unique process to remove the unlinked fraction from the triblock copolymer. The fractional precipitation procedure could not achieve to remove the unlinked diblock copolymer from the required ABA triblock copolymer.

### <sup>1</sup>H-NMR Spectrum of the product

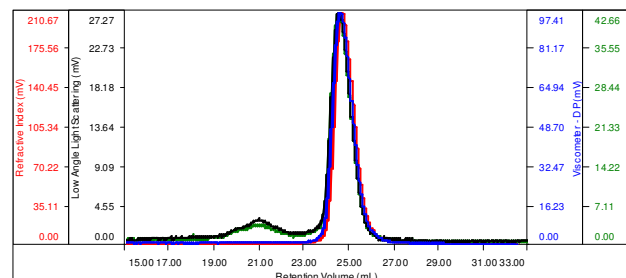


### SEC of the polymer:

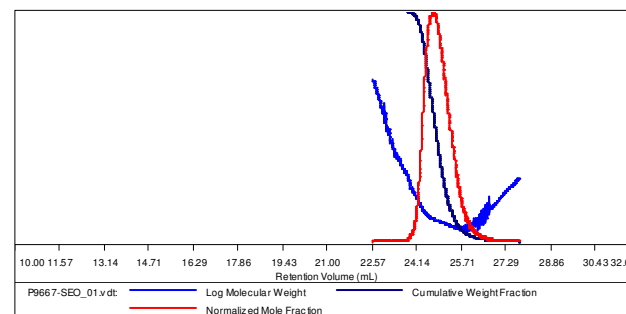
Precursor for P 18571-SEOS

### Sample ID: P9667-SEO

Concentration (mg/mL)	4.4246
Sample dn/dc (mL/g)	0.1200
Method File	PS80K-March13-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1

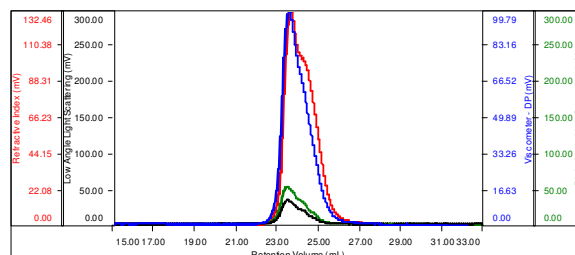


Sample	Mn	Mw	Mp	Mw/Mn	IV
P9667-SEO_01.vdt	19,798	21,909	20,017	1.107	0.4578



### Sample ID: P18574-SEOS

Concentration (mg/mL)	2.2908
Sample dn/dc (mL/g)	0.1270
Method File	PS80K-March13-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18574-0_05g_more_01.vdt	38,353	41,160	37,765	1.073	0.8115

S.K. Varshney, Xing Fu. Zhong, P. Kesani, N.Varshney  
“Architecturally control polymers from Academia to the Industry”

ACS-Symposium, Orlando, August, 1996.