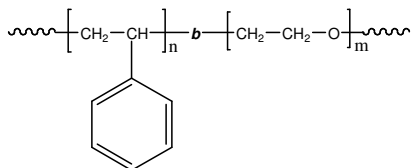


**Sample Name:** Poly(styrene-b-ethylene oxide)

**Sample #:** P18916-SEO

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup>	PDI
15.5-b-30.0	1.16

### Synthesis Procedure:

Poly(styrene-b-ethylene oxide) diblock copolymer was prepared by living anionic polymerization.

### Characterization:

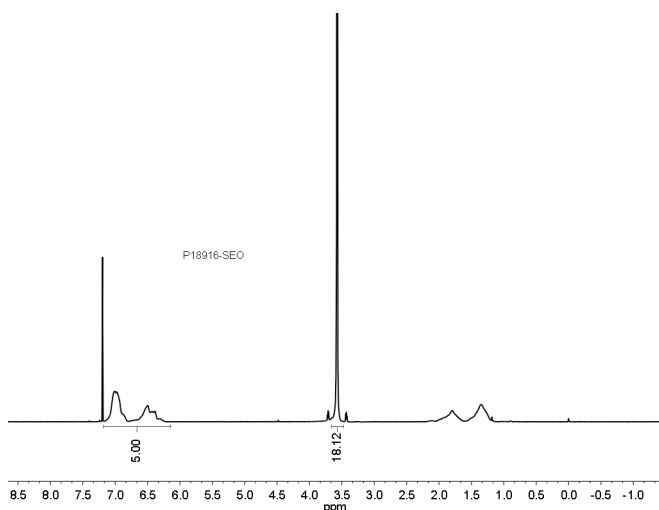
By size exclusion chromatography (SEC) and by <sup>1</sup>H-NMR.

Thermal analysis was done on a TA Q100 differential scanning calorimeter at a heating rate of 20°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T<sub>g</sub>). The melting temperature (T<sub>m</sub>) was taken as a maximum of the endothermic peak.

### Solubility:

The polymer is soluble in THF (at 35 °C), CHCl<sub>3</sub>, benzene, toluene, dioxane. Low molecular weight SEO with high contents of the polyethylene oxide block can also be solubilized in methanol and water.

**<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) spectrum of the sample:**



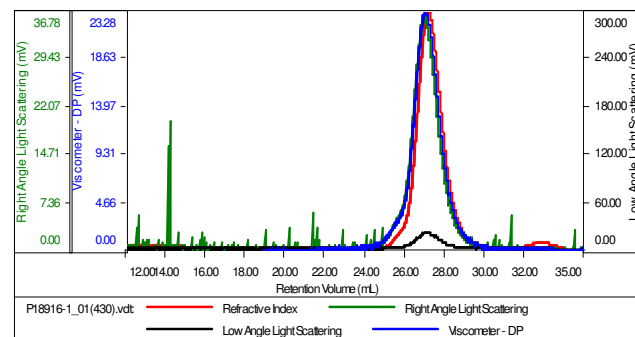
### Thermal analysis results:

For PS block: T <sub>g</sub> : 85°C	
For PEO block:	
T <sub>g</sub> : -63°C	T <sub>m</sub> : 61°C

### SEC elugram of the block copolymer:

Sample ID: P18916-1

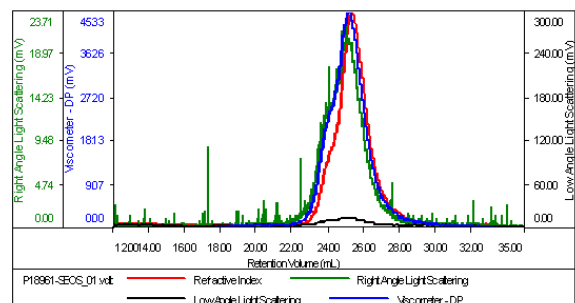
Concentration (mg/mL)	2.1112
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-Dec17-2014-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P18916-1_01(430).vdt	15,619	16,751	15,681	1.072	0.4212

Sample ID: P18916-SEO

Concentration (mg/mL)	1.4788
Sample dn/dc (mL/g)	0.1130
Method File	PS80K-Dec17-2014-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P18916-SEO_01.vdt	44,928	52,370	43,488	1.166	1.6462