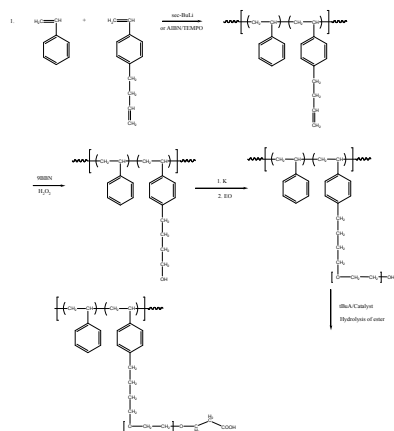


**Sample #: P15019-SEOCOOHcomb**

$$\left[ \text{CH}_2 - \underset{\text{C}_6\text{H}_5}{\text{CH}} - \text{CH}_2 - \underset{\text{C}_6\text{H}_4}{\text{CH}} \right]_n \text{---} \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \left[ \text{O} - \text{CH}_2 - \text{CH}_2 - \text{O} - \underset{\text{H}}{\underset{|}{\text{C}}} - \underset{\text{H}}{\underset{|}{\text{C}}} - \text{COOH} \right]_m$$

Mn x 10 <sup>3</sup> (Main Chain)	Mn x 10 <sup>3</sup> (Graft Chain)	Mn x 10 <sup>3</sup> (Total Chain)	Mw/Mn (Total)
6.5	4.6	30.0	1.3
Mn total 36.5			

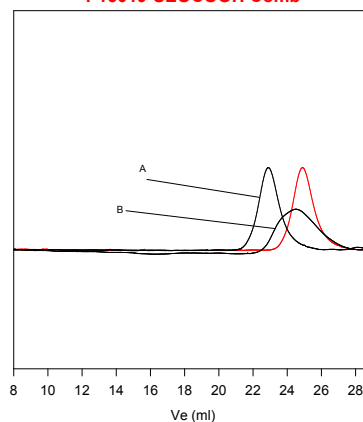
Polystyrene-g-poly(ethylene oxide) is synthesized by polymerization of ethylene oxide on the polystyrene bearing hydroxyl functions. The brief synthetic route is illustrated as following scheme.



The molecular weight and polydispersity index (PDI) of polymers are obtained by size exclusion chromatography. The composition of grafting polymer is determined by NMR.

Polystyrene-g-poly(ethylene oxide) is soluble in THF, DMF, chloroform, and Toluene. It precipitates from hexanes and cold ether.

**P15019-SEOCOOH Comb**



Size exclusion chromatography of copolymer:  
Back Bone  $M_n=6500$ ,  $M_w=8000$ ,  $PI=1.24$

A: SEO comb like Mn of each branch of PEO 4600 and Mn of PEO total: 30,000  
Mw/ Mn 1.3  
B: SEOCCOH comb like Elution retarded due to COOH end groups