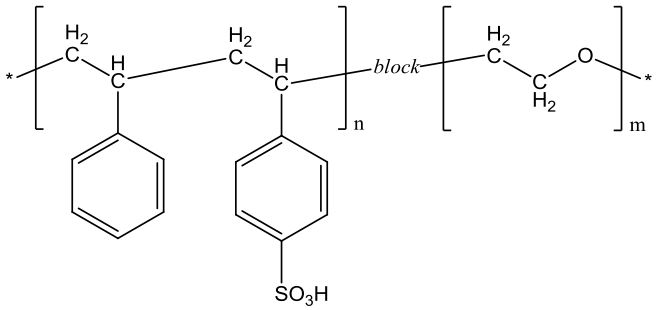
Sample Name:

Poly(styrene sulfonic acid–*b*–ethylene oxide)

Sample #: **P5079B-SSAEO**

Structure:



Composition:

Mn x 10^3 SSA–b–EO	M_w/M_n	Degree of sulfonation:
11.5–b-8.4	1.07	14.3%

Synthesis Procedure:

Poly(styrene sulfonic acid–b–ethylene oxide) diblock copolymer was prepared by sulfonation of poly(styrene-b-ethylene oxide), which was synthesized by living anionic polymerization method.

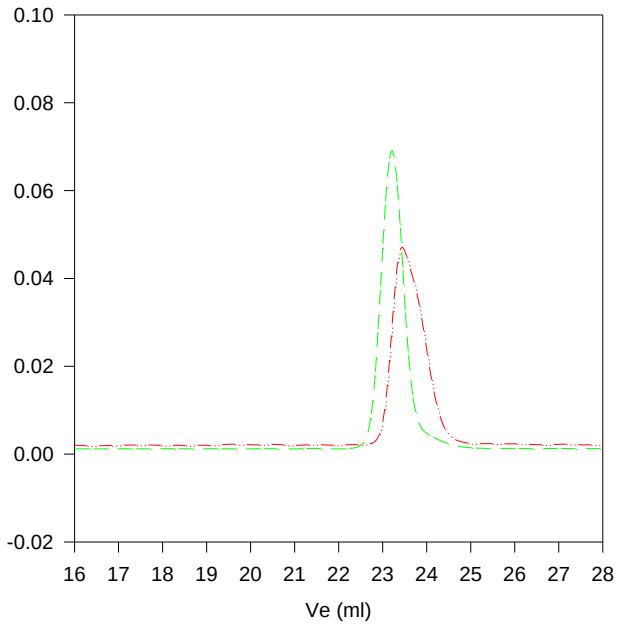
Characterization:

The molecular weight of the poly(styrene sulfonic acid–b–ethylene oxide) diblock copolymer was calculated using molecular weight of poly(styrene–b–ethylene oxide) determined by size exclusion chromatography (SEC).

The ratio between blocks in the diblock copolymer was calculated from ^{1}H-NMR by comparing peak area of the phenyl polystyrene protons at 6.4–7.2 ppm and the ethylene oxide protons at 3.65 ppm.

SEC of polystyrene (first block) and poly(styrene-b-ethylene oxide) diblock copolymer:

P5079B-SSO3EO
(precursor P2666-SEO)



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

Poly(styrene), M_n=9500, M_w=10100, PI=1.07

Block Copolymer PSt(9500)-b-PEO(8400), PI=1.07
Composition from H NMR
After sulfonation: (11500)-b-PEO(8400)
Degree of sulfonation : 14.3% from titration