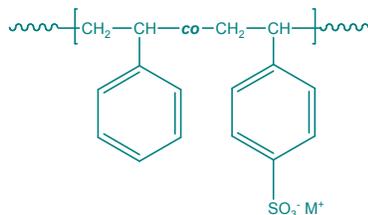


**Sample Name:** Poly(styrene-co-4-styrene sulfonic acid) sodium salt form

**Sample #:** P3016-5-SSO3H

**Structure:**



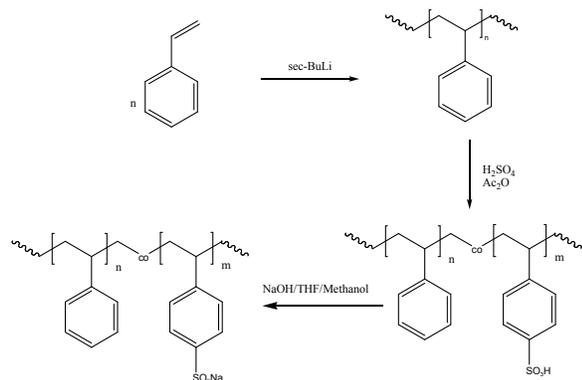
M = H

**Composition:**

Mn x 10 <sup>3</sup>	Mole% of SO <sub>3</sub> H	PDI
20.5	38.3	1.03

**Synthesis Procedure:**

Poly(styrene-co-4-styrene sulfonic acid) is synthesized by partially sulfonation of monodispersed polystyrene and the reaction scheme is shown below.



**Characterization:**

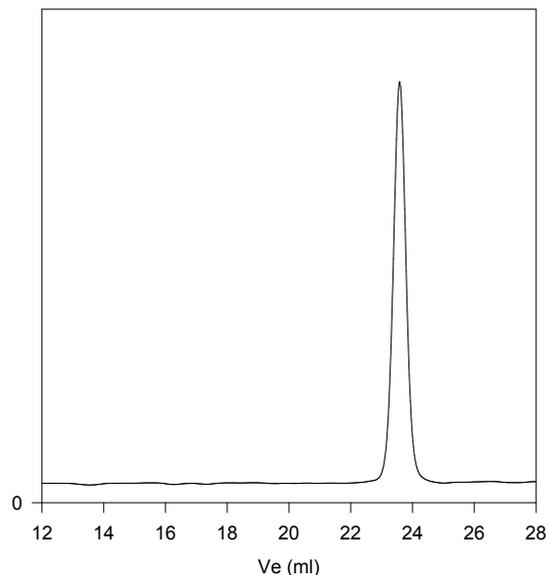
The molecular weight and polydispersity index (PDI) of parent polymer are obtained by size exclusion chromatography. The degree of sulfonation is determined by element analysis or titration.

**Solubility:**

Poly(styrene-co-4-styrene sulfonic acid) is soluble in DMF, chloroform, dichloroethane or alcohols dependent on its chemical composition. It precipitates hexanes.

**SEC of Homopolymer:**

**P3011-S**  
(Precursor of P3016-5-SSO<sub>3</sub>H/Na)



Size exclusion chromatograph of polystyrene:

M<sub>n</sub>=14800 M<sub>w</sub>=15300, PI=1.03

Sulfonation Degree: 38.3mol%, M<sub>n</sub>=20500, M<sub>w</sub>=21200, PI=1.043  
after conversion to sodium salt: Mn:21500