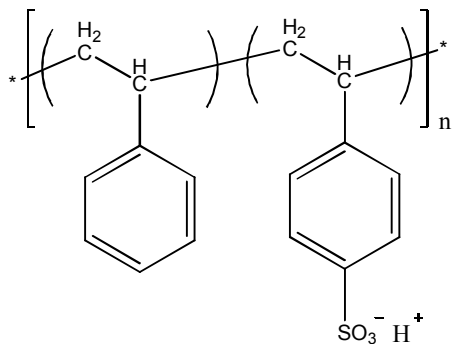


**Sample Name: Ionomer of  
Poly(styrene-co-4-styrene sulfonic acid)**

**Sample #: P3008-SSO3H**

**Structure:**

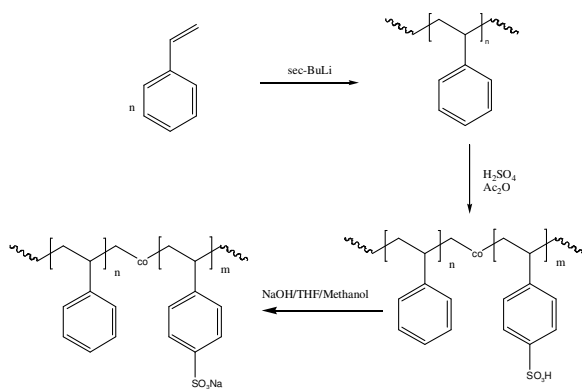


**Composition:**

Mn x 10 <sup>3</sup> (g/mol)	M <sub>w</sub> /M <sub>n</sub>	Sulfonated polystyrene (-SO <sub>3</sub> H)
14.7	1.04	44 mol%

**Synthesis Procedure:**

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



**Characterization:**

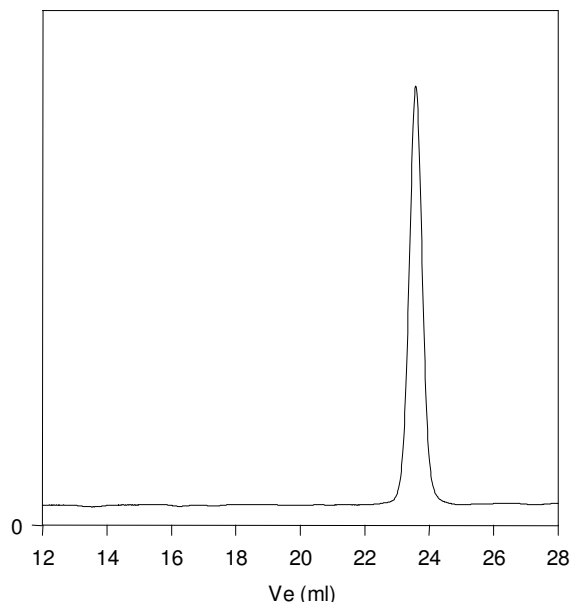
The molecular weight and polydispersity index (PDI) of parent polymer are obtained by size exclusion chromatography. The degree of sulfonation is determined by element analysis or titration.

**Solubility:**

Poly(styrene-co-4-styrene sulfonic acid) is soluble in DMF, chloroform, dichloroethane, and alcohols (depending on its chemical composition). The polymer precipitates from hexane.

**SEC elugram:**

**P3011-S**  
(Precursor for P3008-SSO<sub>3</sub>H/Na)



Poly(SSO<sub>3</sub>H) ionomer:

M<sub>n</sub>=14700 M<sub>w</sub>=15300, PDI=1.04

Sulfonation Degree: 44.0 mol%