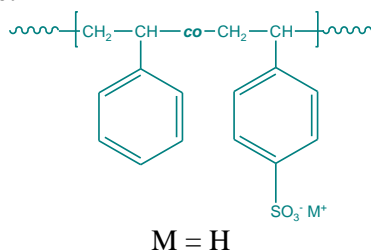


Sample Name: Ionomer of Poly (styrene-co-4-styrene sulfonic acid)

Sample #: P16313A-SSO3H

Structure:

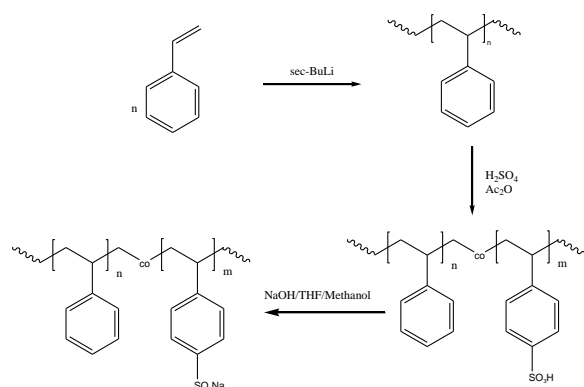


Composition:

| $M_n \times 10^3$ | Mole% of SO ₃ H | PDI |
|-------------------|----------------------------|------|
| 22.5 | 27% | 1.09 |

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:

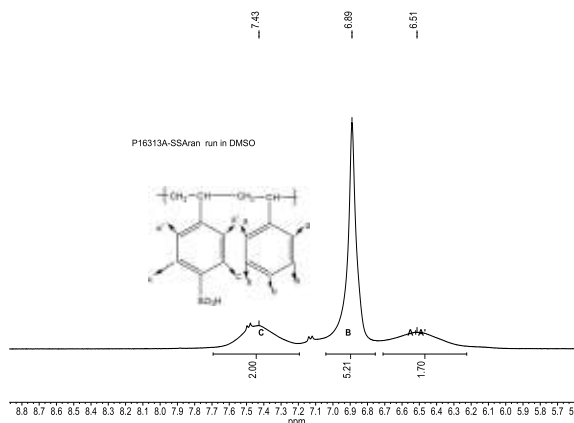
The product was characterized by size exclusion chromatography (SEC) and ¹H NMR.

Solubility:

The polymer is soluble in methanol.

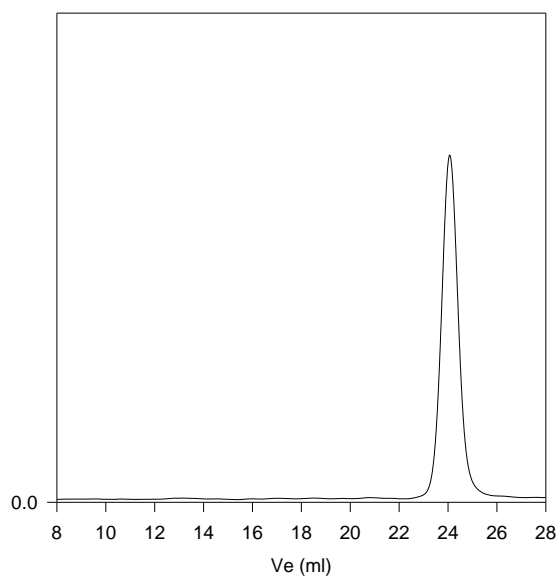
¹H NMR spectrum of the Sample runs in DMSO:

P16313A-SSAran run in DMSO



SEC elugram of Polystyrene used for sulfonation process:

P16313-S used for sulfonation



Size exclusion chromatograph of polystyrene:

$M_n=15,500$, $M_w=16,000$, $PI=1.03$