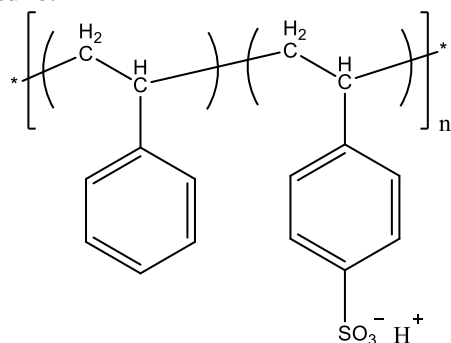


**Sample Name:** Ionomer of Poly (styrene-co-4-styrene sulfonic acid)

**Sample #:** P16408-SSO3H

**Structure:**

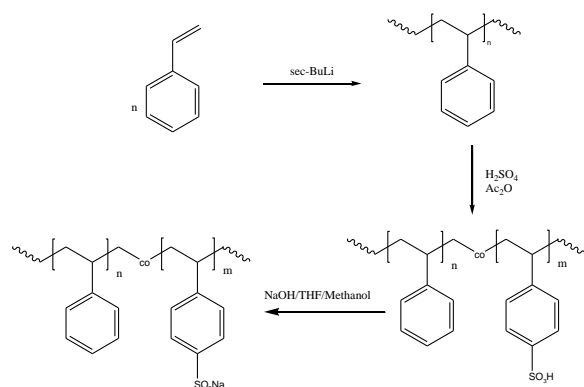


**Composition:**

Mn x 10 <sup>3</sup>	Mole% of SO <sub>3</sub> H	PDI
10.5	20 %	1.06

**Synthesis Procedure:**

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



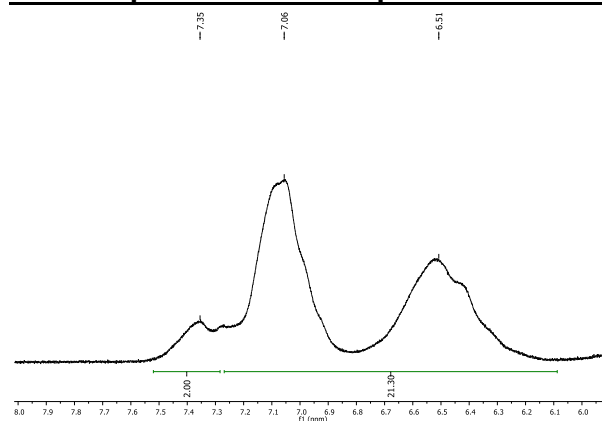
**Characterization:**

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

**Solubility:**

The polymer is soluble in CHCl<sub>3</sub>, acetone, DMSO and methanol depending on the sulfonation degree.

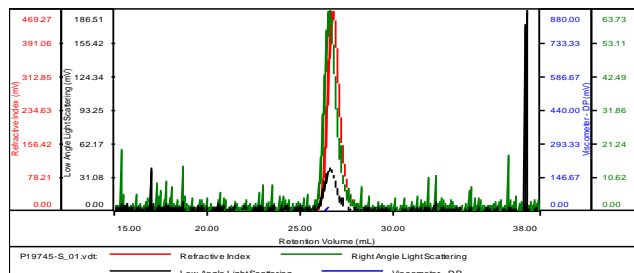
**<sup>1</sup>H NMR spectrum of the Sample runs in DMSO:**



**SEC elugram of Polystyrene used for sulfonation process:**

Sample ID: P19845-S

Concentration (mg/mL)	4.7309
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-April-18-2016-0001.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Rh (nm)	Ret Vol (mL)
P19745-S_01.v dt	8,940	9,477	1.060	0.1640	3.60	26.770