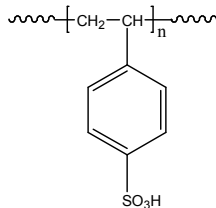


Sample Name: Poly (4-styrene sulfonic acid)
Or Poly (styrene sulfonic acid)

Sample #: P40411-SSO3H
dialysed form

Structure:

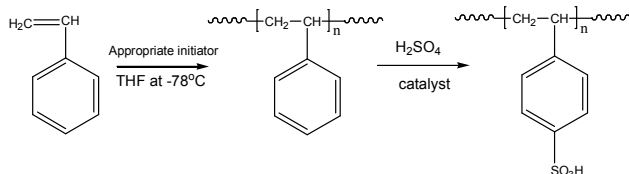


Composition:

Mn x 10 ³	PDI
35.0	1.12

Synthesis Procedure:

Poly (styrene sulfonic acid) is obtained from the sulfonation of polystyrene. Polystyrene was obtained by anionic living polymerization. The molecular distribution of the obtained polystyrene sulfonic acid remains same as of the parent polymer. Furthermore the HNMR and FTIR spectroscopy of the polymer shows the sulfonation is predominately at par position of phenyl group. The reaction scheme is illustrated below:



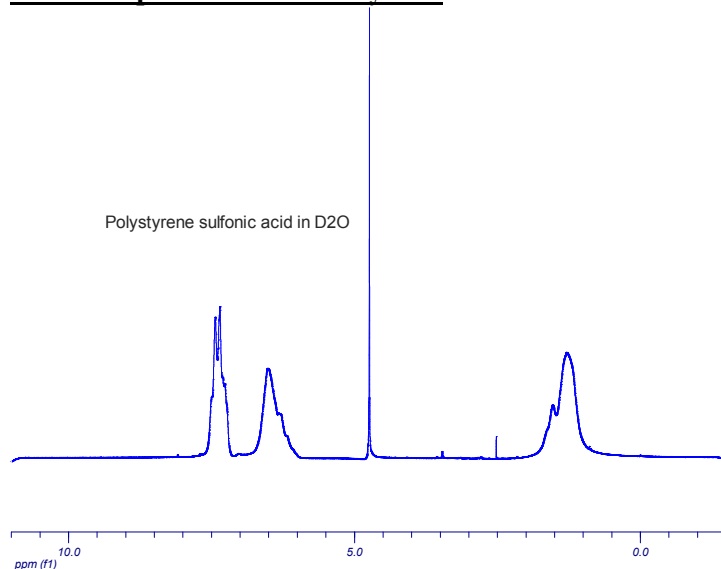
Characterization:

The molecular weight and polydispersity index (PDI) of poly (styrene sulfonic acid) are obtained by size exclusion chromatography. The degree of sulfonation is determined by acid/base titration and by elemental analysis.

Solubility:

Poly (styrene sulfonic acid) is soluble in methanol, water and precipitated out from the hexane, THF, toluene.

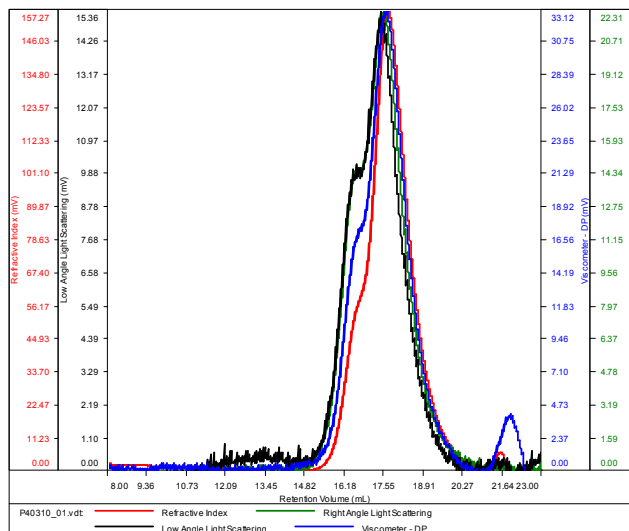
¹HNMR Spectrum of the Polymer:



SEC of Homopolymer used for the sulfonation

P40310-S

Conc (mg/mL)	10.0773
dn/dc (mL/g)	0.1650
Method	PS80k_December:2016-0004.vcm
Solvent	DMF w 0.023M LiBr
Column	PSS



Sample	Mn	Mw	Mp	Mw/Mn	IV
P40310_01.vdt	20,006	22,478	18,394	1.124	0.0684