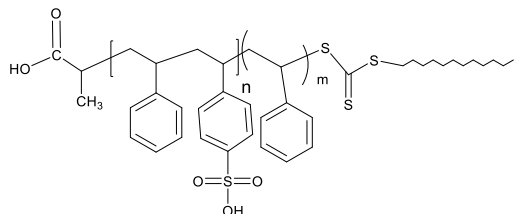


Sample Name:
Poly(styrene-co-Styrene sulfonic acid -b-Styrene)

Sample #: P42596-SSSO3Hran-b-S

Structure:

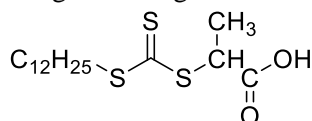


Composition:

Mn $\times 10^3$ SSSO3Hran-b-S	Mw/Mn (PDI)
34.5-b-64.0	1.65
Sulfonation in the first block	15.0 mole%

Synthesis Procedure:

The polymer is prepared by RAFT polymerization process using following RAFT reagent:



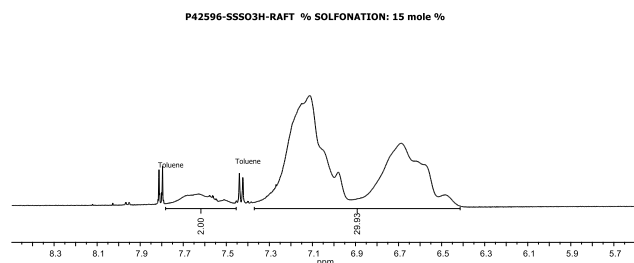
Characterization:

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

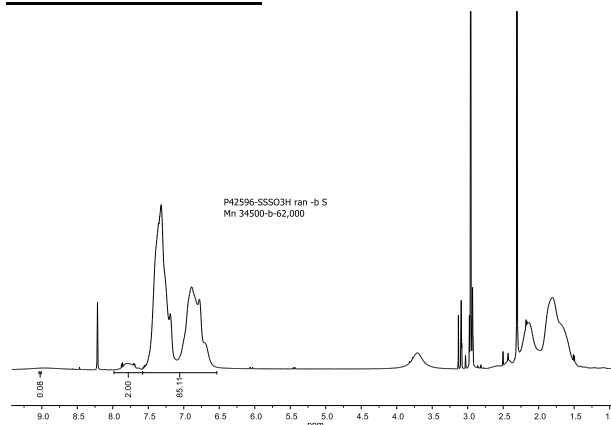
Purification:

Diblock copolymer was precipitated in hot acetone. In acetone PSSSO3H ran copolymer is soluble that eliminate unreacted homopolymer from the deblock copolymer. Diblock copolymer is insoluble in acetone and soluble in DMF.

^1H -NMR Spectrum of the Polymer SSSO3Hran in d6Acetone:

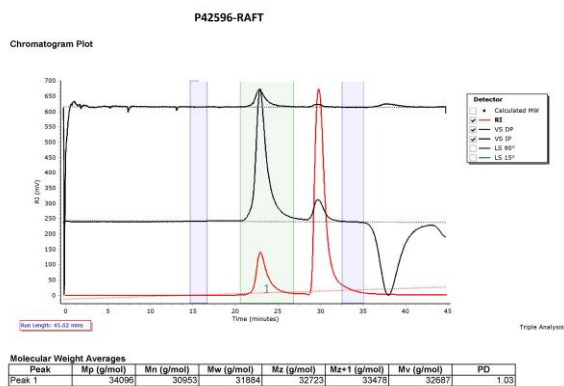


^1H -NMR spectrum of the Diblock copolymer carried out in DMF:



SEC profile of the PS-RAFT starting polymer:

Agilent GPC/SEC Software

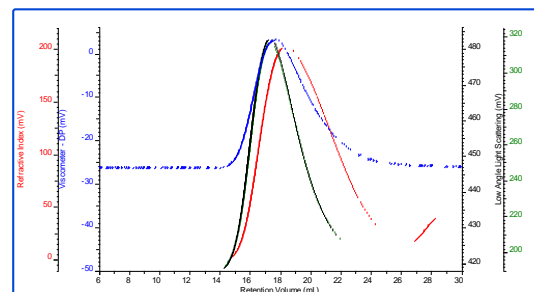


% sulfonation: 15% Mn: 34,500

SEC profile after Extension of PS block:

P42596- SSSO3Hran-b-S

dn/dc	0.1677
Flow Rate	0.7000
Solvent	DMF with LiBr
Method	PSS column-PMMA60K-Jan3-2019-0013.vcm



Sample	Mn	Mw	Mp	Mw/Mn
P42596-2_1_2020-08-18	96,423	159,500	178,598	1.654

Mn calculated from its HNMR composition. SEC profile demonstrate absence of First random block polymer.