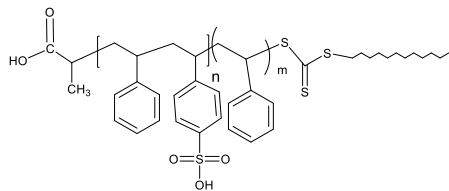


Sample Name:
Poly(styrene-co-Styrene sulfonic acid -b-Styrene)

Sample#: P42608A-2-SSSO3Hran-b-S

Structure:

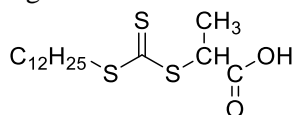


Composition: Sulfonation in the first block: 28%

Mn × 10 ³ SSSO3Hran-b-S	Mw/Mn (PDI)
34.5-b-38.0	1.6
% sulfonation in the first Block	28%

Synthesis Procedure:

Polymer is prepared by RAFT process. Following RAFT reagent was used:



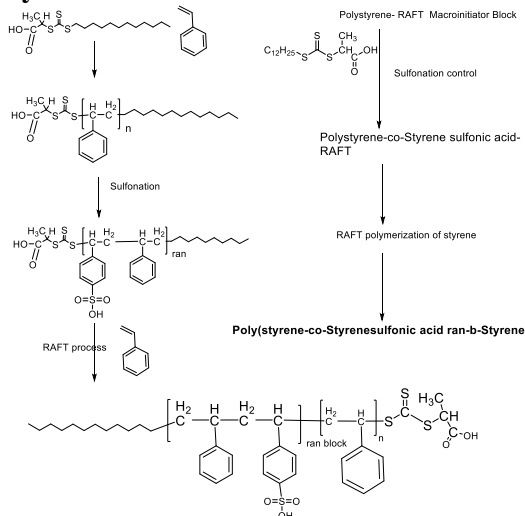
Characterization:

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

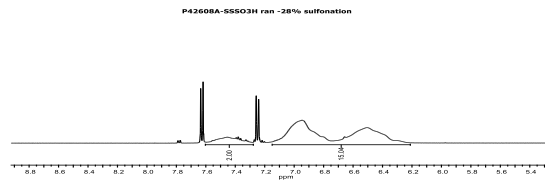
Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

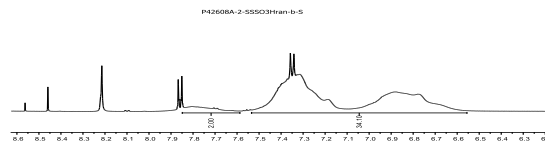
Synthesis route:



¹H-NMR spectrum of the Polymer (First random block):

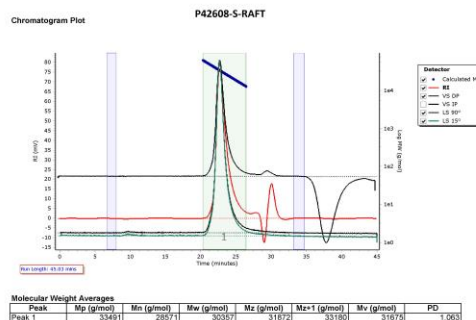


¹H-NMR spectrum of PSSSO3Hran-b-S in DMF:



SEC profile of the PS-RAFT starting polymer:

Agilent GPC/SEC Software

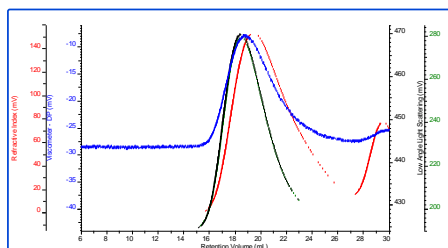


% sulfonation: 28% Mn 34,500

SEC profile after Extension of PS block:

P42608A2- SSSO3Hran-b-S

dn/dc	0.1670
Flow Rate	0.7000
Solvent	DMF with LiBr
Method	PSS column-PMMA60K-Jan3-2019-0013.vcm



Sample	Mn	Mw	Mp	Mw/Mn
P42608-A-2_1_2020-08-25	95,887	153,149	172,583	1.597

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