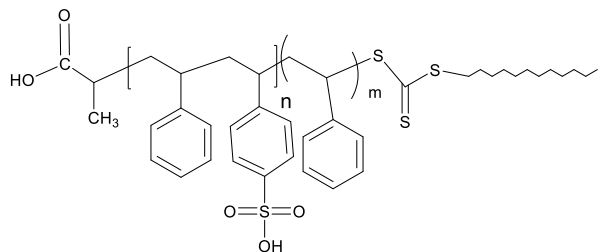


Sample Name:
Poly(styrene-co-Styrene sulfonic acid -b-Styrene)

Sample#: P42596E2-SSSO3Hran-b-S

Structure:

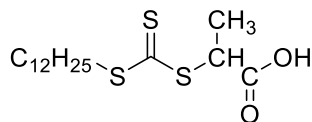


Composition:

Mn $\times 10^3$ SSSO3Hran-b-S	Mw/Mn (PDI)
37.5-b-27.0	1.45
Sulfonation in the first block	20 mole%

Synthesis Procedure:

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



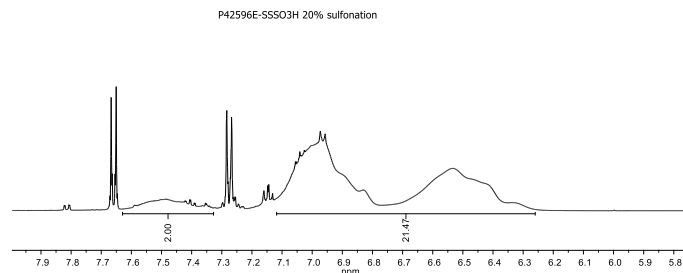
Characterization:

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

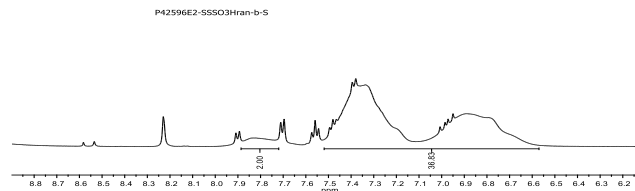
Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of $10^\circ\text{C}/\text{min}$. 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).

^1H -NMR spectrum of the Polymer SSSO3H ran in d6Acetone:

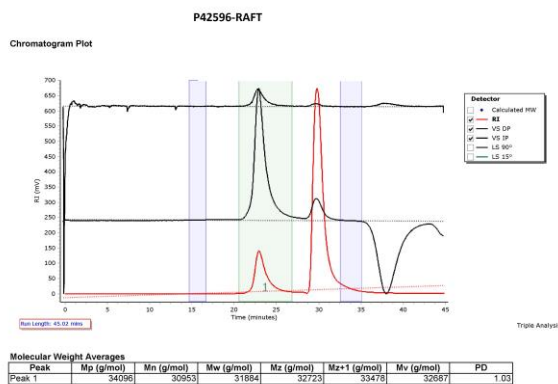


^1H -NMR spectrum of the Polymer SSSO3Hran-b-S in DMF:



SEC elugram of the PS-RAFT starting polymer:

Agilent GPC/SEC Software



% sulfonation: 20% Mn: 37,500

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