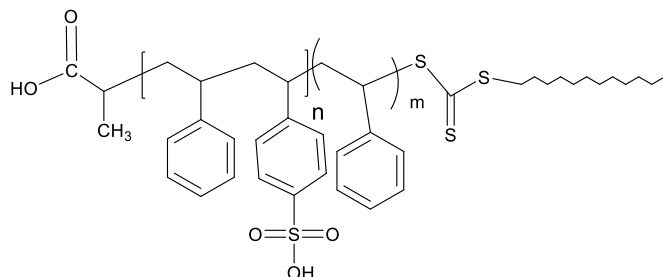


Sample Name:

Poly(styrene-co-Styrene sulfonic acid -b-Styrene)

Sample#: **P42558B-SSSO3Hran-b-S**

Structure:

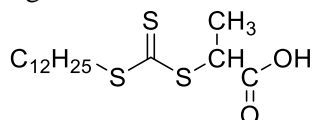


Composition: Sulfonation in the first block: 5%

$M_n \times 10^3$ SSSO3Hran-b-S	M_w/M_n (PDI)
30.0-b-4.0	1.43
Sulfonation	5%

Synthesis Procedure:

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



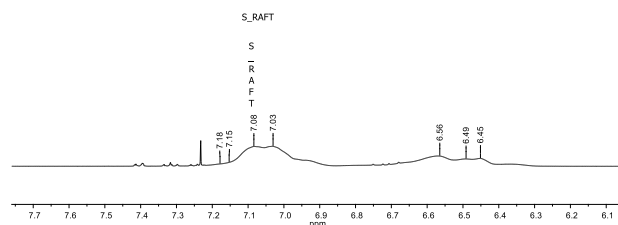
Characterization:

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

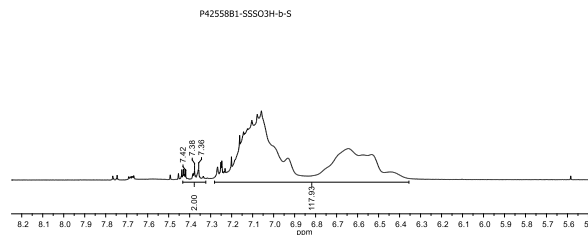
Thermal analysis:

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).

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

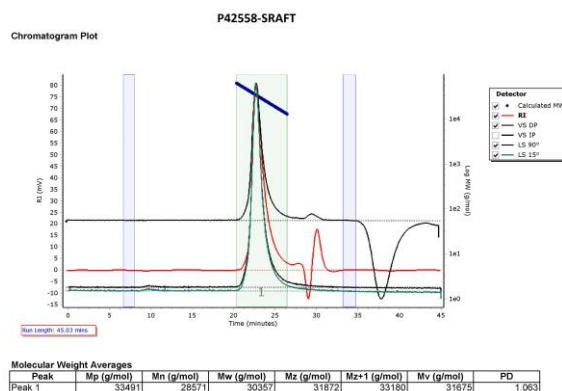


¹H-NMR spectrum of the sample:



SEC profile of the PS-RAFT starting polymer:

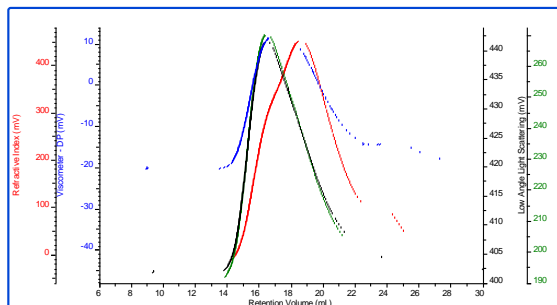
Agilent GPC/SEC Software



SEC profile after Extension of PS block:

P42658B- SSSO3Hran-b-S

dn/dc	0.1656
Flow Rate	0.7000
Solvent	DMF with LiBr
Method	PSS column-PMMA60K-Jan3-2019-0013.vcm



Sample	M_n	M_w	M_p	M_w/M_n
P42558-B_1_2020-08-03	34,751	49,690	36,429	1.430

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