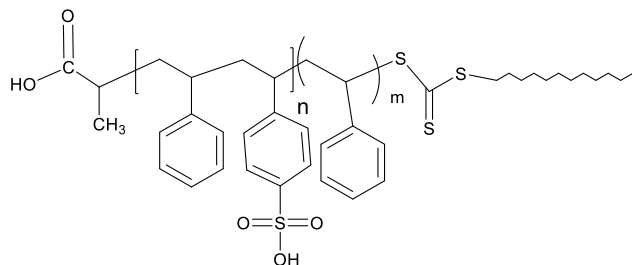


**Sample Name:**  
**Poly(styrene-co-Styrene sulfonic acid -b-Styrene)**

**Sample #:** P42596B2-SSSO3Hran-b-S

**Structure:**

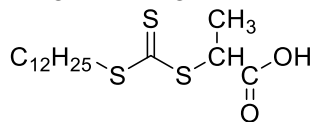


**Composition:**

Mn × 10 <sup>3</sup> SSSO3Hran-b-S	Mw/Mn (PDI)
36.0-b-47.0	1.55
Sulfonation in the first block	36.0 mole%

**Synthesis Procedure:**

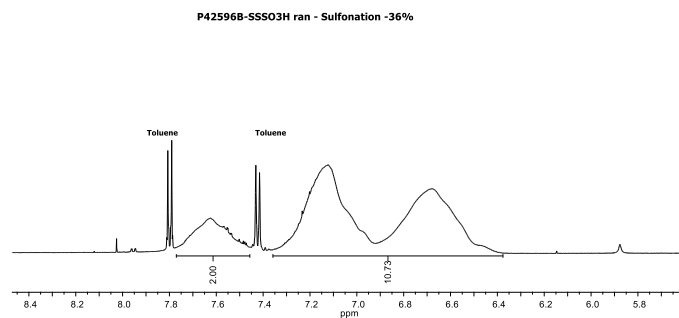
The polymer is prepared by RAFT polymerization process using following RAFT reagent:



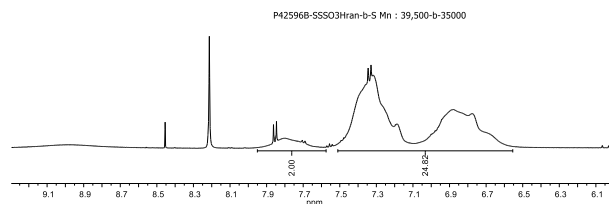
**Characterization:**

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

**<sup>1</sup>H-NMR spectrum of the Polymer SSSO3Hran in d6Acetone:**

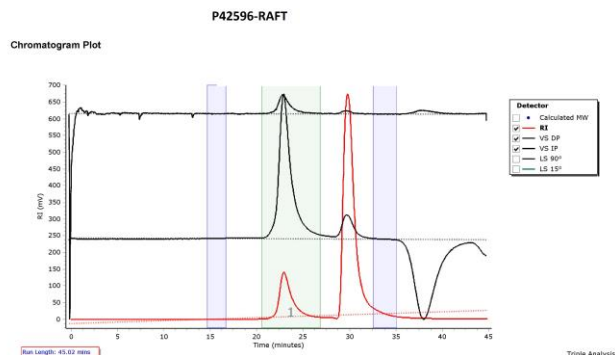


**<sup>1</sup>H-NMR spectrum of P42596B2-SSSO3Hran-b-S in DMF:**



**SEC profile of the PS-RAFT starting polymer:**

Agilent GPC/SEC Software



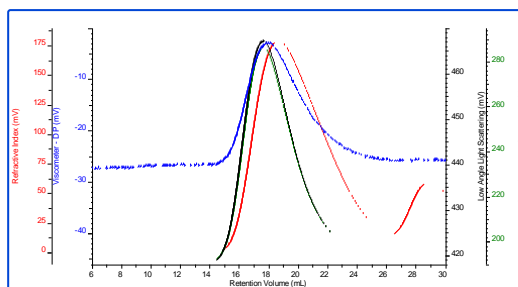
Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
1	34096	30953	31884	32723	33478	32887	1.03

36% sulfonation Mn 36,000

**SEC profile after Extension of PS block:**

P42596B2- 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
P42596-B2_1_2020-08-18	90,305	141,262	155,751	1.564

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