

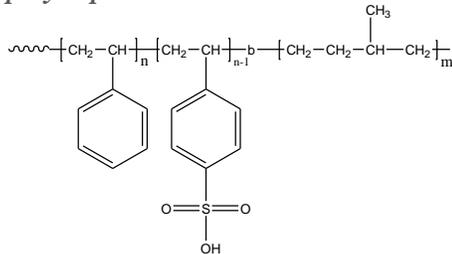
**Sample Name: Poly (4-styrene sulfonic acid)-b-poly (2-methyl butylene)**

Polymer obtained by the hydrogenation of (Poly (styrene -b- isoprene rich in 1,4-addition) and its sulfonation on Polystyrene fraction

**Sample #: P41837B-SSO3HMB**

**Structure:**

*1,4-rich microstructure for hydrogenated polyisoprene block:*



**Composition:**

Mn x 10 <sup>3</sup> SSO3H-b-MB	Mw/Mn (PDI)
15.5-b-10.5	1.08

% of sulfonation	50%
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**Synthesis Procedure:**

Poly(styrene-b-isoprene) is prepared by living anionic polymerization in non-polar solvent with sequence addition of styrene followed by isoprene and catalytic hydrogenation, followed by sulfonation.

**Characterization:**

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

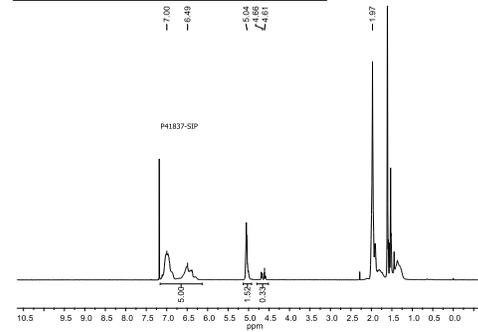
**Sample:** P41837-B

Analysis	Method	Result	Basis	Sample Amount Used
C : Carbon	GLI Procedure ME-14	62.97 %	As Received	1.116 mg
H : Hydrogen	GLI Procedure ME-14	8.28 %	As Received	2.083 mg
O : Oxygen	GLI Procedure E8-4	22.43 %	As Received	1.457 mg
S : Sulfur	GLI Procedure E16-3	6.29 %	As Received	26.648 mg

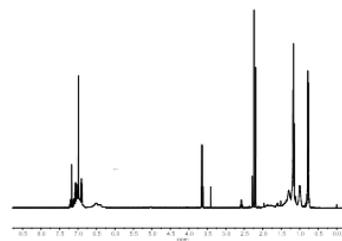
**Solubility:**

Poly (SSO3H-b-hydrogenated isoprene) is soluble in THF.

**<sup>1</sup>H-NMR Spectrum of the block copolymer Poly (styrene-b-isoprene)**

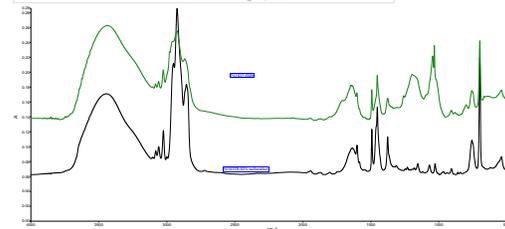
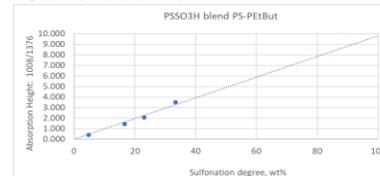


**<sup>1</sup>H-NMR Spectrum of the block copolymer Poly (styrene-b-isoprene) after Hydrogenation:**

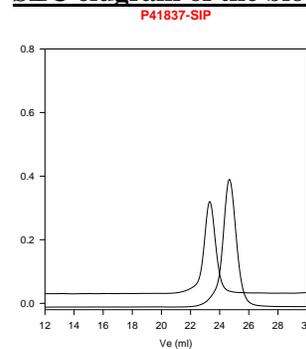


**FTIR of the SSO3H-MB**

**Calibration of FTIR:**



**SEC elugram of the block copolymer:**



Size exclusion chromatography of polystyrene-b-polyisoprene<sub>1,4-addition</sub>  
 — Polystyrene, M<sub>n</sub>=11,500, M<sub>w</sub>=12,500 PDI=1.09  
 — Block Copolymer: PS-IP(11,500)-b-PI(10,500), PDI=1.08 (by H NMR)