

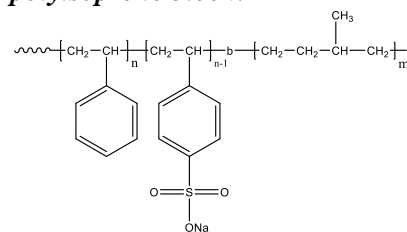
Sample Name: Poly (4-styrene sulfonic acid)-b-poly (2-methyl butylene)

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

Sample #: P41839-SSO3HMB

Structure:

1,4-rich microstructure for hydrogenated polyisoprene block:



Composition:

Mn x 10 ³ SSO3H-b-MB	Mw/Mn (PDI)
12.0-b-10.5	1.08

% of sulfonation	70%
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Synthesis Procedure:

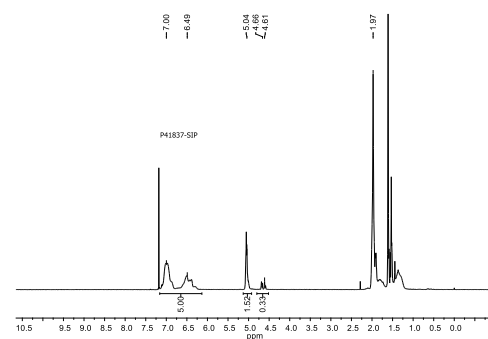
Poly(styrene-b-isoprene) is prepared by living anionic polymerization in non-polar solvent with sequence addition of styrene followed by isoprene and catalytic hydrogenation, followed by sulfonation.

Characterization:

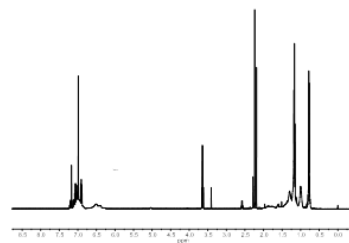
The product was characterized by size exclusion chromatography (SEC), ¹H NMR and FTIR.

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

¹H-NMR Spectrum of the block copolymer Poly (styrene-b-isoprene)

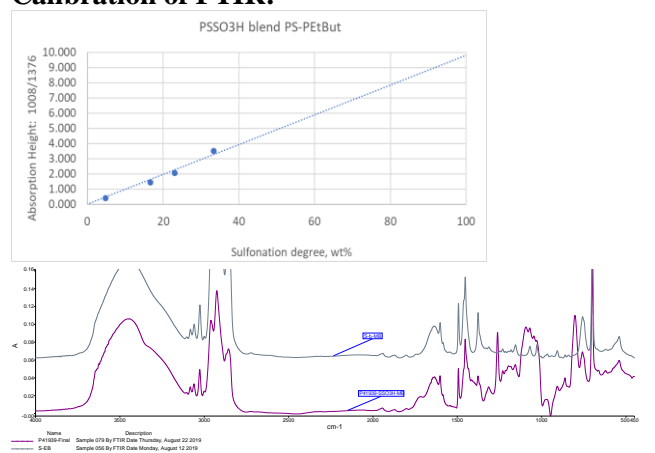


¹H-NMR Spectrum of the block copolymer Poly (styrene-b-isoprene) after Hydrogenation:



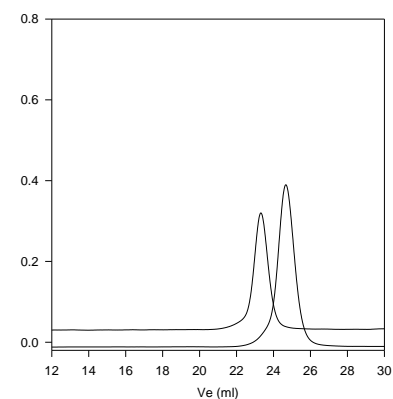
FTIR of the SSO3H-MB

Calibration of FTIR:



SEC elugram of the block copolymer:

P41837-PI



Size exclusion chromatography of polystyrene-b-polyisoprene_{1,4} addition
 — Polystyrene, M_n=11,500, Mw=12,500 PI=1.09
 — Block Copolymer: PS-IP(11,500)-b-PI(10,500), PI=1.08 (by H NMR)