

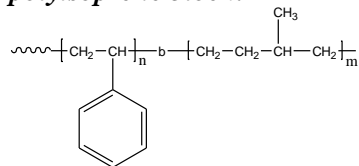
Sample Name: Poly(styrene)-b-poly (ethylene propylene)

Synonym: Poly(styrene)-b-poly (2-methyl butylene)

From Hydrogenation of (Poly (styrene -b- isoprene rich in 1,4-addition)

Sample #: P41839A-SMB

1,4-rich microstructure for hydrogenated polyisoprene block:

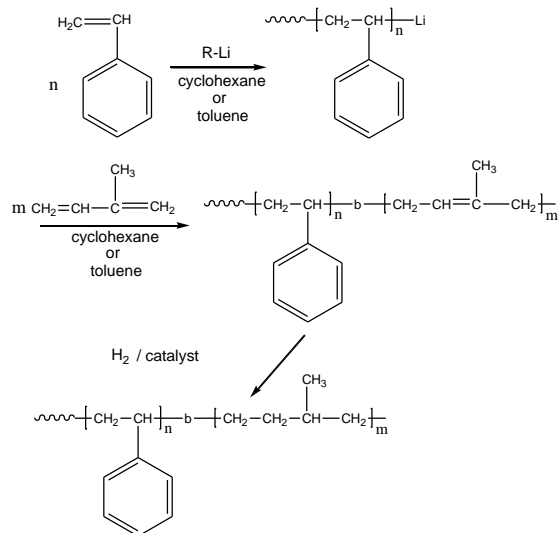


Composition:

Mn x 10 ³ S-b-MB	Mw/Mn (PDI)
12.0-b-11.5	1.02

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. The scheme of the reaction is illustrated below:



Characterization:

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

Solubility:

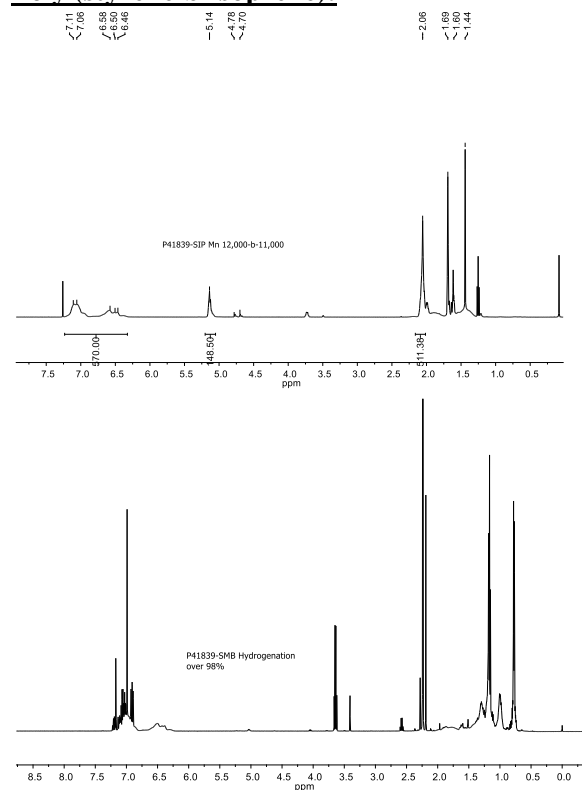
The polymer is soluble in THF, CHCL3 and toluene.

Purification:

Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

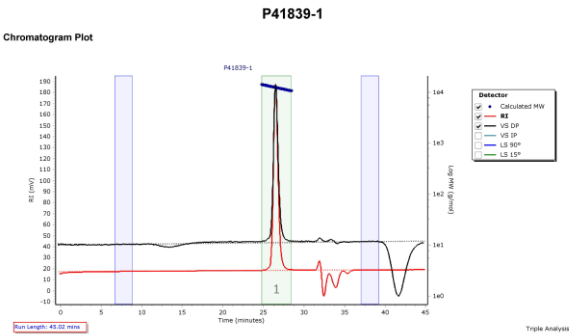
1. Dissolved the polymer in warm toluene and Solution filtered and then passed through a column packed with basic silica at +40 oC. .
2. Solution concentrated precipitated in ethanol.
3. Polymer redissolved in toluene and passed again through the silica packed column till get a light color solution. Polymer was recover and dissolved in benzene and filter through a filter paper and the solution freeze dried from benzene. Final dried under vacuum for 48h at 50°C.

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

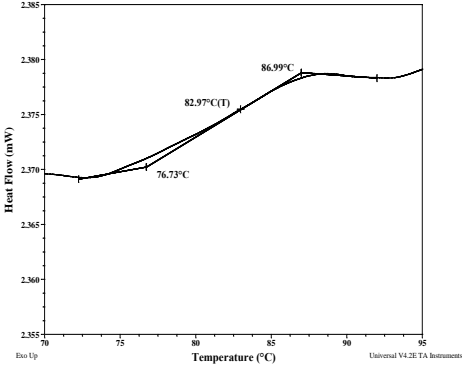


SEC elugram of the first Block:

Agilent GPC/SEC Software



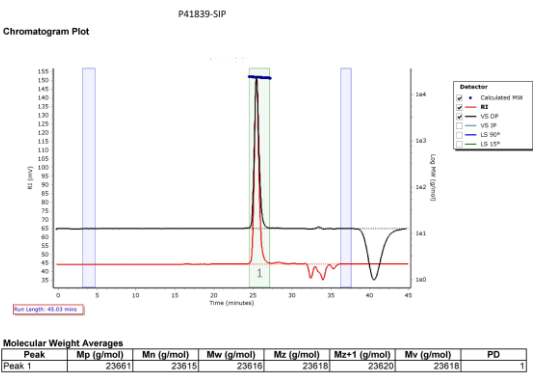
DSC thermogram for PS block:



After Hydrogenation:

SEC of Sample of the block copolymer:

Agilent GPC/SEC Software



DSC thermogram for Ip block:

