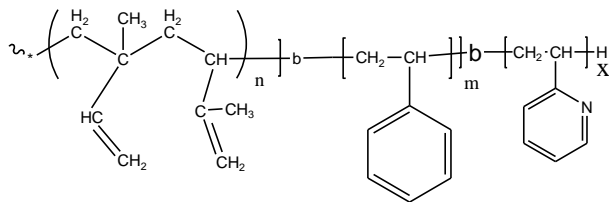


**Sample Name:**

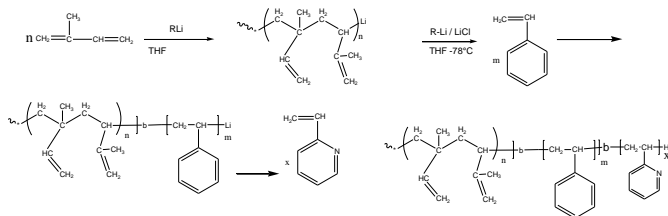
Poly(Isoprene (1,2 AND 3,4) rich -b-styrene-b-2vinyl pyridine)

**Sample #: P11360-IPS2VP****Structure:****Composition:**

Mn x 10 <sup>3</sup> IP-b-S-2VP	PDI
23.0-45.0-b-67.0	1.8

**Synthesis Procedure:**

By living anionic polymerization with sequence addition of isoprene (polymerization in polar solvent) than styrene, followed by addition of 2 vinyl pyridine (2VP). The scheme of the reaction is illustrated below:



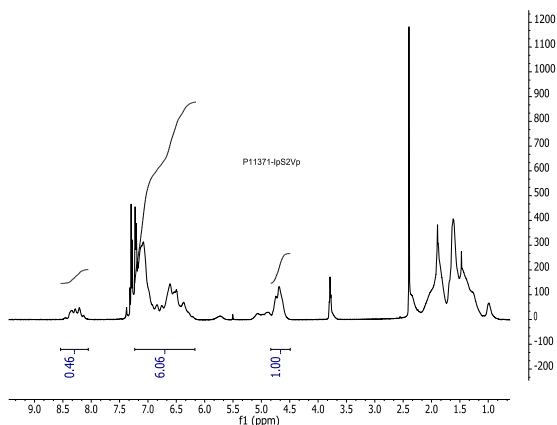
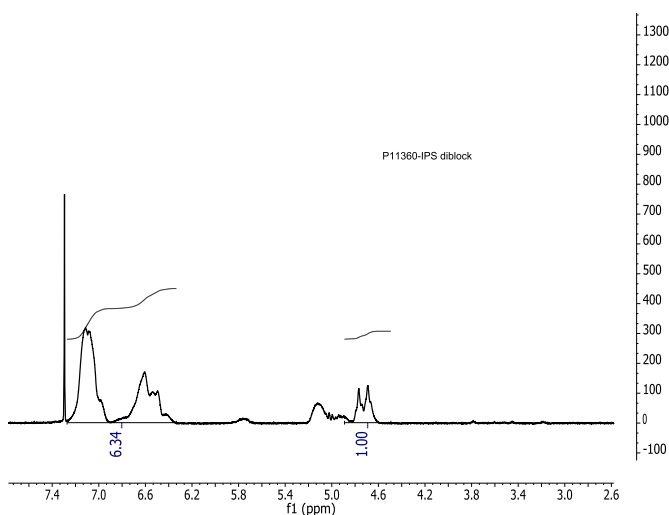
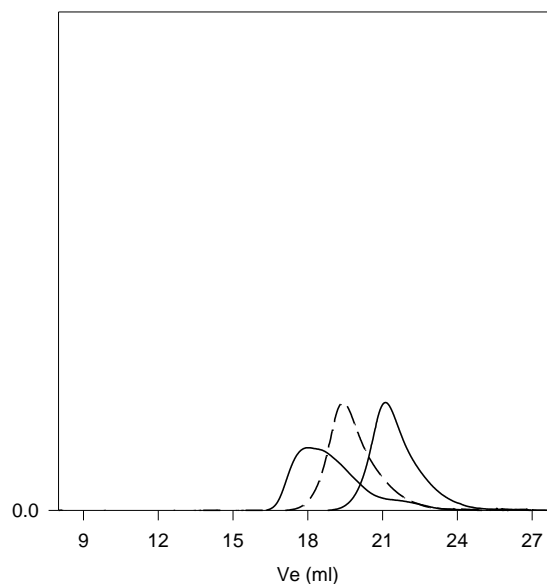
**Purification of the final Polymer:** The traces amount of any di-block copolymer was removed by stirring the polymer in hot hexane and decanting the soluble fraction any. This ensure the high purity of ABC tri block copolymer.

**Characterization:**

size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF as the eluent. The chemical composition was extracted from proton NMR, which was recorded from Varian 500MHz instrument using CDCl<sub>3</sub> as solvent.

**Solubility:**

Polymer is soluble in THF, toluene, and CHCl<sub>3</sub>. The polymer readily precipitates from cold hexanes/ethanol mixture. .

**<sup>1</sup>H-NMR Spectrum of the polymer:****SEC for the polymer AT DIFFERENT STAGES OF POLYMERIZATION :****P11360-IPS2VP****Size exclusion chromatography of poly(IP-b-S-b-2VP)**

- PIP (rich in 1, 2 and 3,4 addition), M<sub>n</sub>=23,000, M<sub>w</sub>=32,200, Mw/Mn=1.4
- Poly(Ip-b-S): Ip(23,000)-b-S(45,000) Mw/Mn=1.45
- Triblock copolymer: P(Ip)23,000-b-S(45,000)b-2VP(67,000): Mw/Mn=1.8

Composition from <sup>1</sup>H NMR dn/dc in THF at 35°C: 0.138ml/g;