

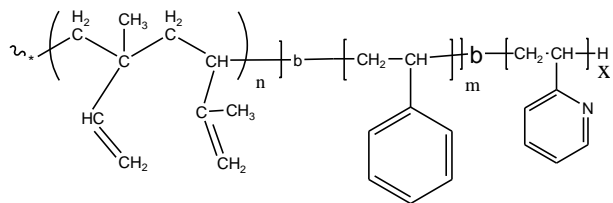
¹H-NMR Spectrum of the polymer:

Sample Name:

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

Sample #: P11398-IPS2VP

Structure:

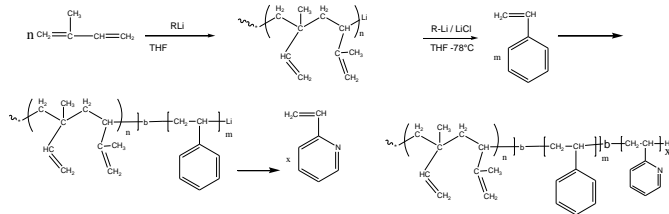


Composition:

Mn x 10 ³ IP-b-S-2VP	PDI
25.5-47.0-b-26.0	1.13

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:



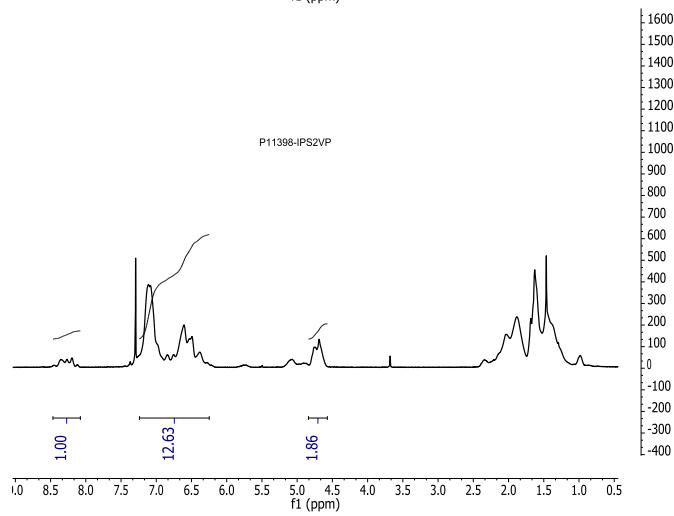
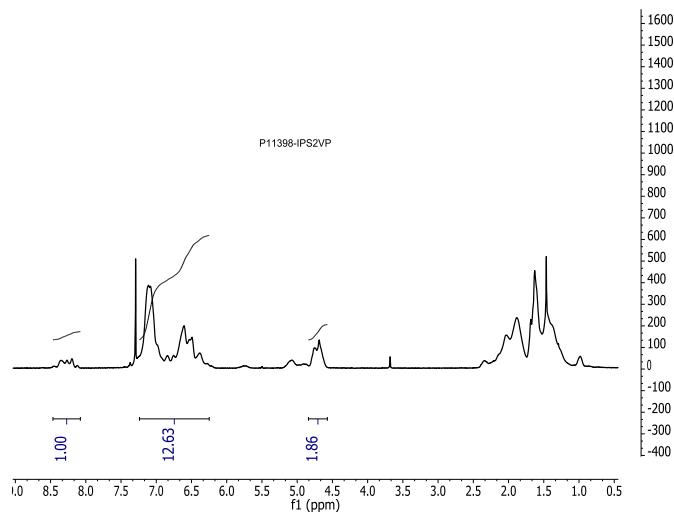
Characterization:

First Block: 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 CDCl₃ as solvent. The polydispersity index of block copolymer was obtained by SEC as described above.

Solubility:

Polymer is soluble in THF, toluene, and CHCl₃. The polymer readily precipitates from cold hexanes/ethanol mixture.

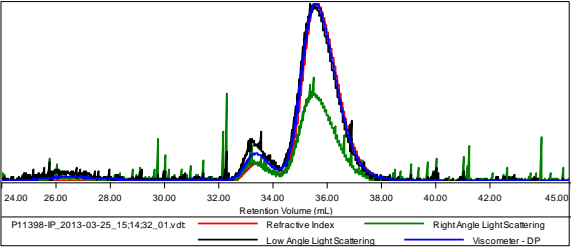
Purification of the final Polymer: The traces amount of any di-block copolymer was removed by stirring the polymer in hot hexane and decanting the soluble fraction any. This ensure the high purity of ABC tri block copolymer



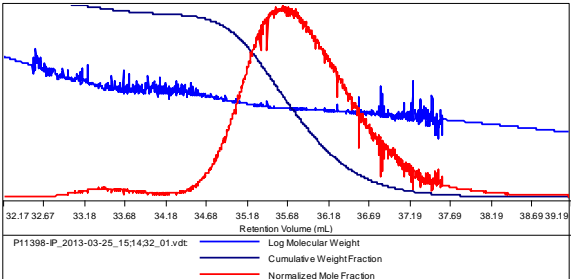
SEC for the polymer AT DIFFERENT STAGES OF POLYMERIZATION :

Sample ID: P11398-IP

Concentration (mg/mL)	12.2426
Sample dn/dc (mL/g)	0.1250
Method File	PS80K-Mar-2013-0002.vcm
Column Set	3x PL 1113-6300
System	System 1

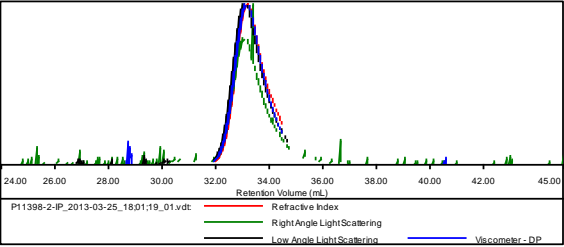


Sample	Mn	Mw	Mp	Mw/Mn	IV
P11398-IP_2013-03-25_15:14:32_01.v	25,271	27,339	24,801	1.082	0.4899

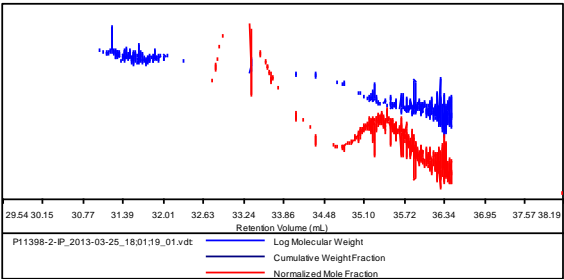


Sample ID: P11398-IPS

Concentration (mg/mL)	7.3116
Sample dn/dc (mL/g)	0.1550
Method File	PS80K-Mar-2013-0002.vcm
Column Set	3x PL 1113-6300
System	System 1

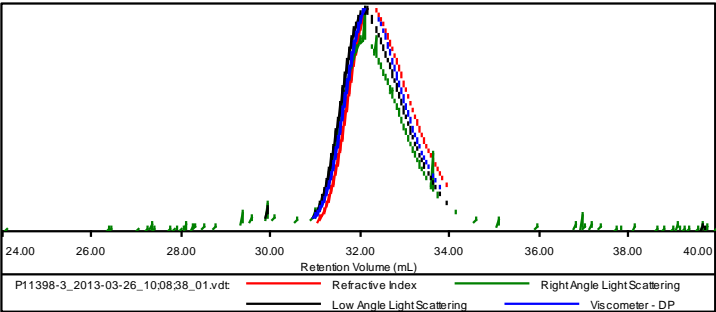


Sample	Mn	Mw	Mp	Mw/Mn	IV
P11398-2-IP_2013-03-25_18:01:19_01	71,892	85,191	91,751	1.185	0.6288



Sample ID: P11398-3-IPS2VP

Concentration (mg/mL)	8.2329
Sample dn/dc (mL/g)	0.1630
Method File	PS80K-Mar-2013-0002.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P11398-3_2013-03-26_10:08:38_01.vc	99,162	112,075	115,309	1.130	0.7409

