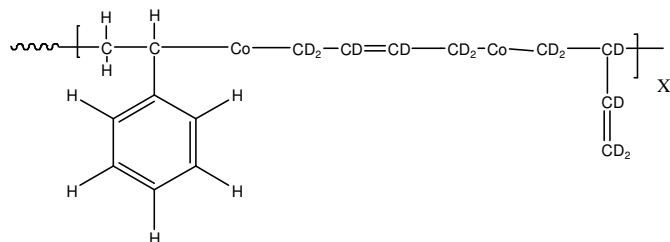


Sample Name: Random Copolymer
Poly(Styrene-co-deuterated Butadiene (d6))

(Note: PS block is protonated, PBd block is deuterated.)

Sample # P18630-PSdBdran

Structure:



Composition: dPs : 25 wt%

$M_n \times 10^3$ SdBdran	PDI
50.5	1.23

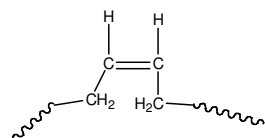
T_g	-24°C
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Synthesis:

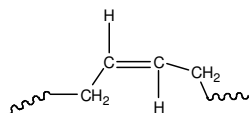
By anionic polymerization in the presence of t-BuOLi and TEMEDA at 60°C.

Characterization:

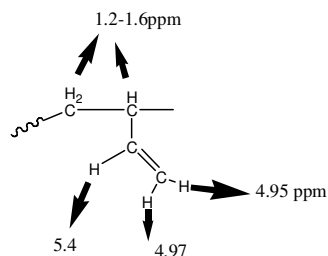
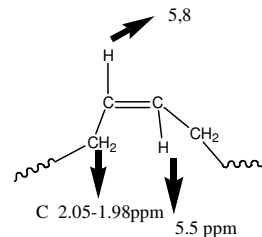
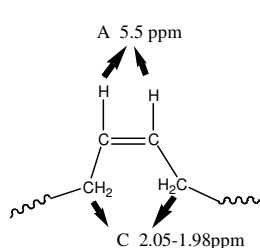
Size exclusion chromatography (SEC): Varian liquid chromatograph equipped with light scattering detector and refractive detector (Viscotek model 270) .



Cis 1,4 addition

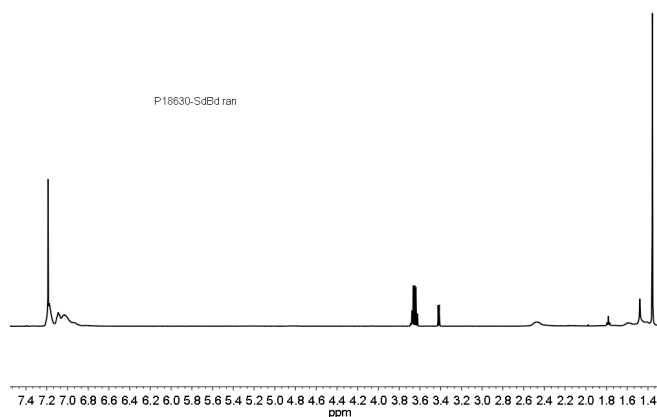
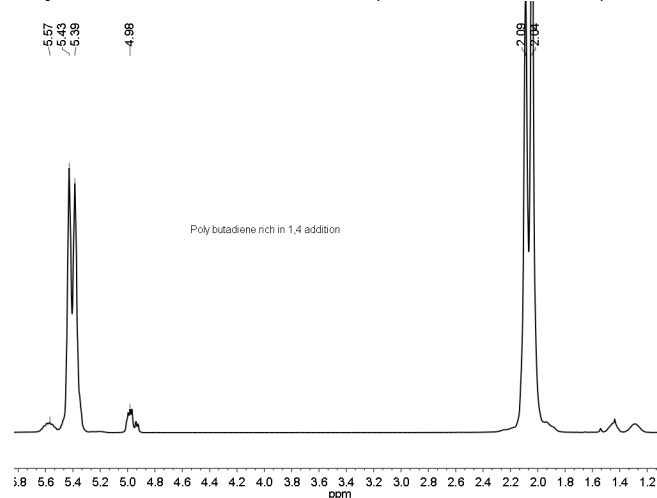


Trans 1,4 addition



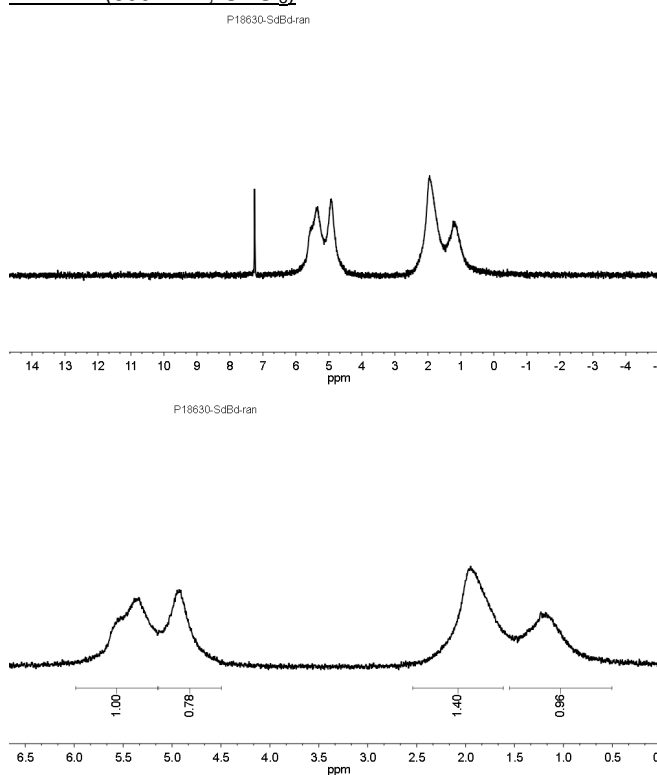
¹H NMR spectra (500 MHz, CDCl₃):

PolyButadiene rich in 1,4 addition (used for calculations):



Cis 1,4 addition : 35% Trans 1,4 addition <1%

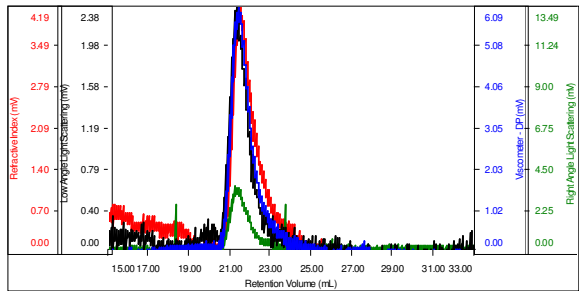
²H NMR (500 MHz, CHCl₃)



SEC elugram ofPS-d₆Bd random copolymer:

Sample ID: P18630-SdBd ran

Concentration (mg/mL)	0.3830
Sample dn/dc (mL/g)	0.1370
Method File	PS80K-Apr15-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mh	Mw	Mp	Mw/Mh	IV
P18630-SdBd_ran_01.vdt	50,756	62,510	67,084	1.232	0.3363

DSC:

Size: 13.4000mg

DSC

