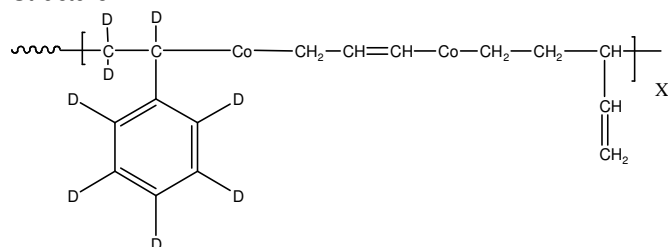


Sample Name: Random Copolymer
Deuterated Poly(Styrene (d8)-co-Butadiene)
 (Note: Polybutadiene block is protonated.)

Sample # P18629-dPSBdran

Structure:



Composition: dPs : 25 wt%

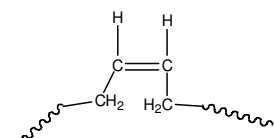
Mn x 10 ³ dPSPBdran	PDI
37.0	1.06

Tg	-21°C
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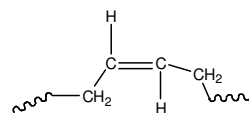
Synthesis: By anionic polymerization in the presence of t-BuOLi and TEMEDA at 60°C.

Characterization:

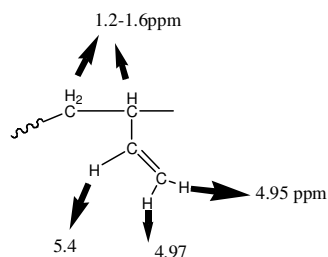
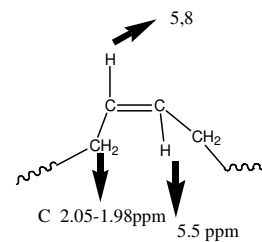
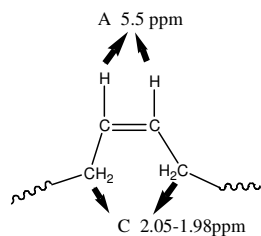
Size exclusion chromatography (SEC): Varian liquid chromatograph equipped with light scattering detector and refractive detector (Viscotek model 270) .



Cis 1,4 addition

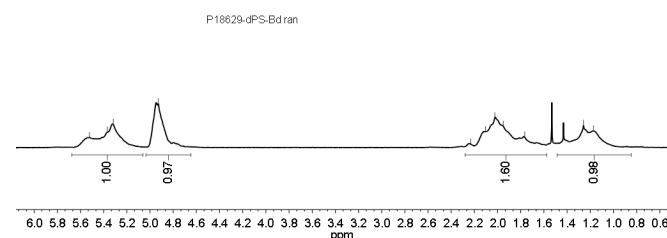
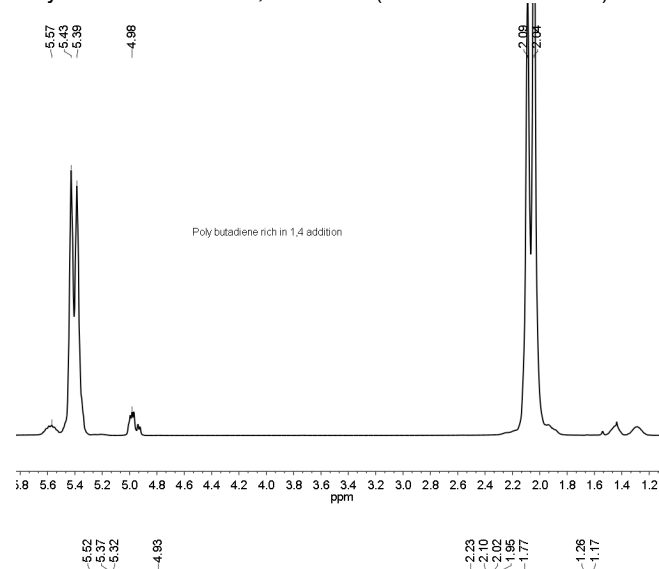


Trans 1,4 addition

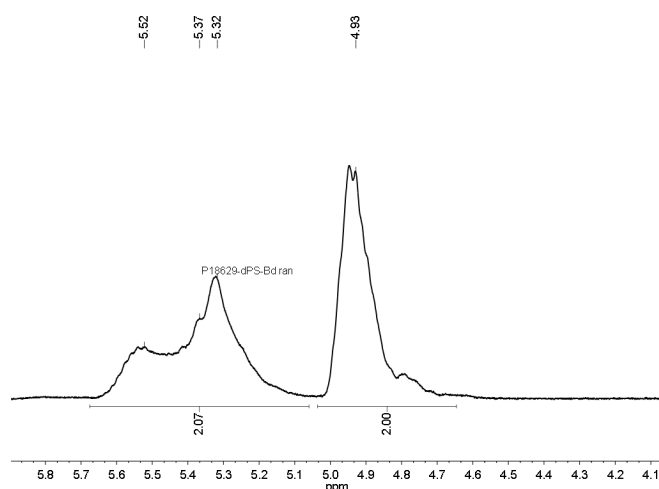


¹H NMR spectra (500 MHz, CDCl₃):

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

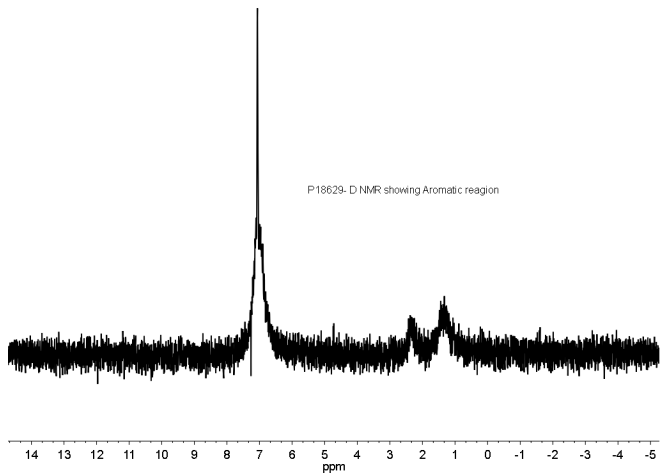


1,2 addition : 66%



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

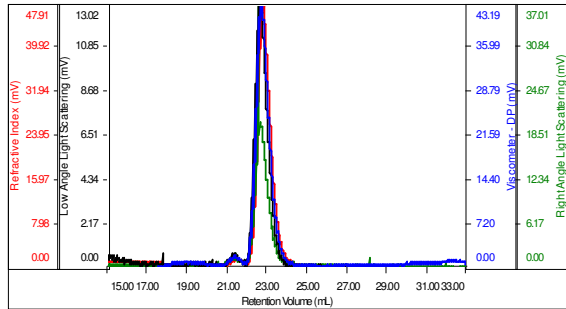
²H NMR (500 MHz, CHCl₃)



SEC elugram of d₈PS-Bd random copolymer:

Sample ID: P18629-DpsBd ran

Concentration (mg/mL)	2.9356
Sample dilute (mL/g)	0.1310
Method File	PS80K-Apr15-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mh	Mw	Mp	Mw/Mh	IV
P18629-dPSBd_ran_01.vdt	37,048	39,326	38,311	1.061	0.2232

DSC:

