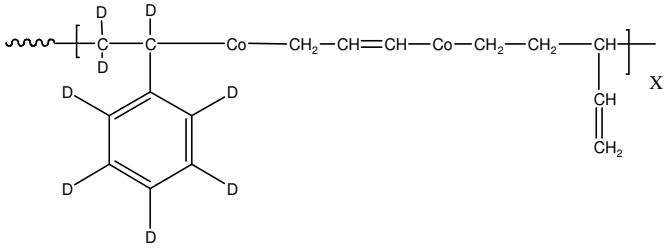
Sample Name: Random Copolymer
Deuterated Poly(Styrene(d8)-*co*-Butadiene)
(Note: Polybutadiene block is protonated.)

Sample # P18631-dPSBdran

Structure:



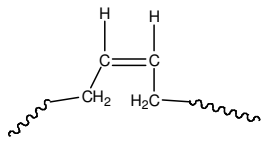
Composition: dPs : 25 wt%

Mn x 10^3 dPSdPBdran	PDI
32.7	1.06

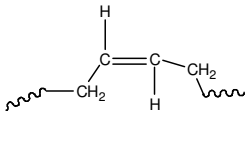
Glass Transition Temperature	T_g = –21°C

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

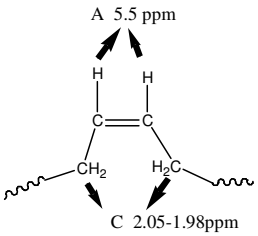
Characterization:
Size exclusion chromatography (SEC): Varian liquid chromatograph equipped with light scattering detectore and refractive detector (Viscotek model 270) .

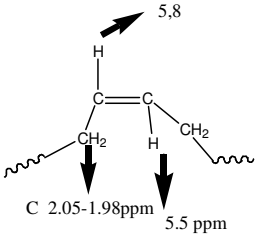


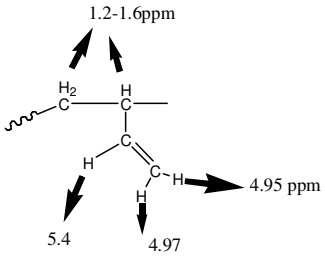
Cis 1,4 addition



Trans 1,4 addition

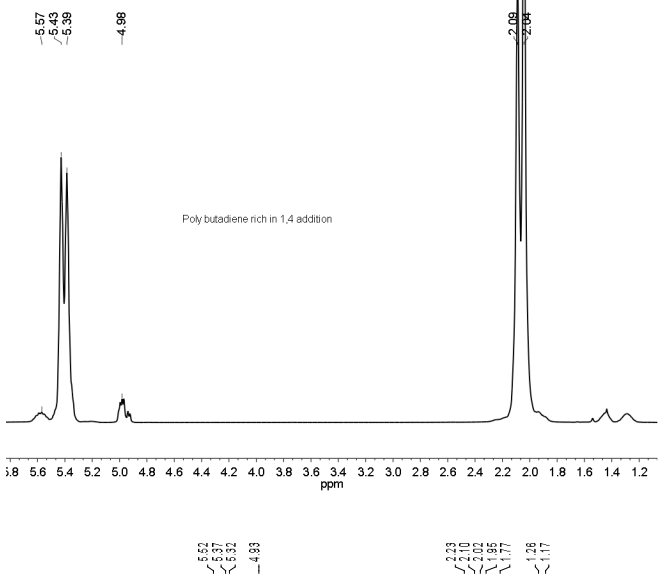


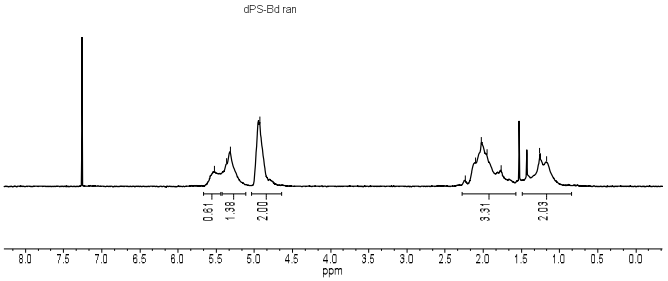




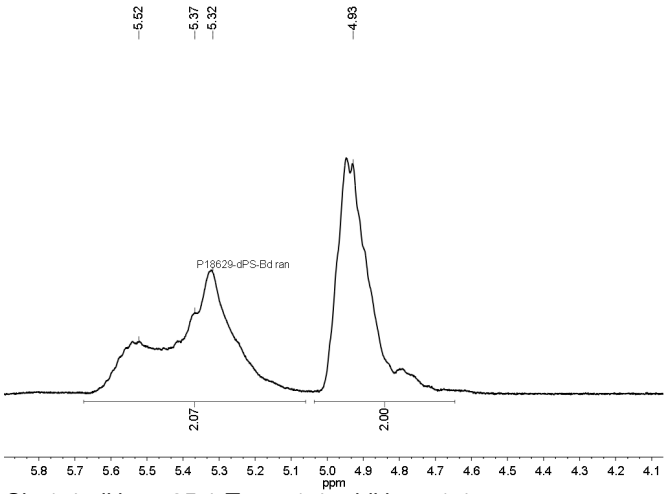
^{1}H NMR spectra (500 MHz, $CDCl_3$):

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



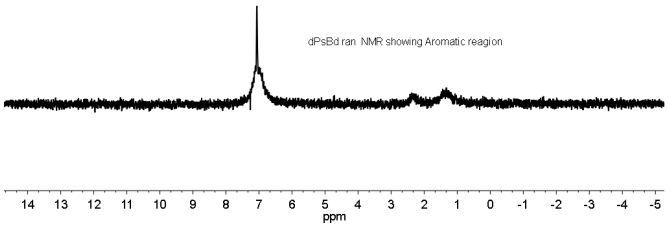


1,2 addition : 65%



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

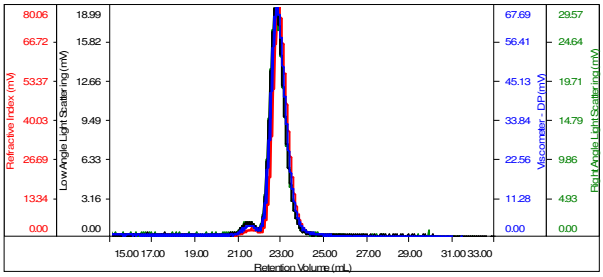
^{2}H NMR (500 MHz, $CHCl_3$)



SEC elugram of d_8PS-Bd random copolymer:

Sample ID: P18631-dPSBdran

Concentration (mg/mL)	5.0971
Sample dn/dc (mL/g)	0.1310
Method File	PS80K-Apr15-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18631-dPS_Bd_ran__01.vdt	32,740	34,822	33,736	1.064	0.2070

DSC: