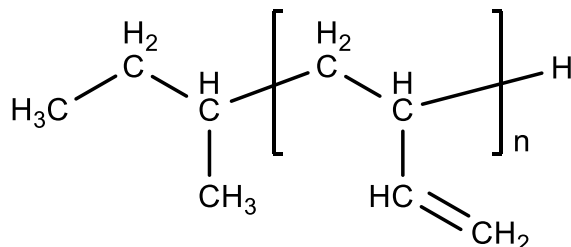


Sample Name: **Polybutadiene (1,2-addition)**

Sample #: **P19663-Bd**

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup>	PDI
1.5	1.09
PBd 1,4-addition	<4 %
PBd 1,2-addition:	96 %

**Synthesis procedure:**

1,2-addition polybutadiene was prepared by anionic living polymerization of butadiene in non-polar/polar media.

**Characterization:**

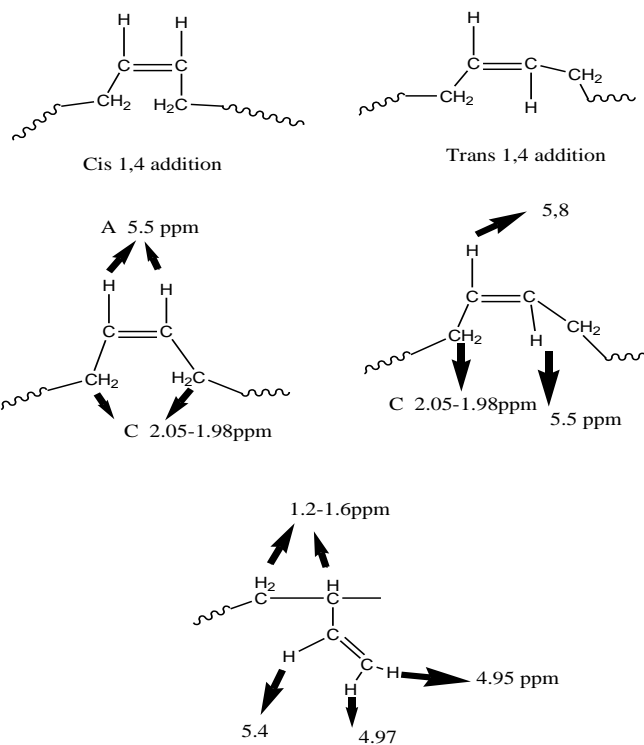
The ratio between 1,4- and 1,2-addition was calculated by <sup>1</sup>H NMR spectroscopy. Molecular weight and polydispersity index were determined by size exclusion chromatography (SEC).

**Thermal analysis:**

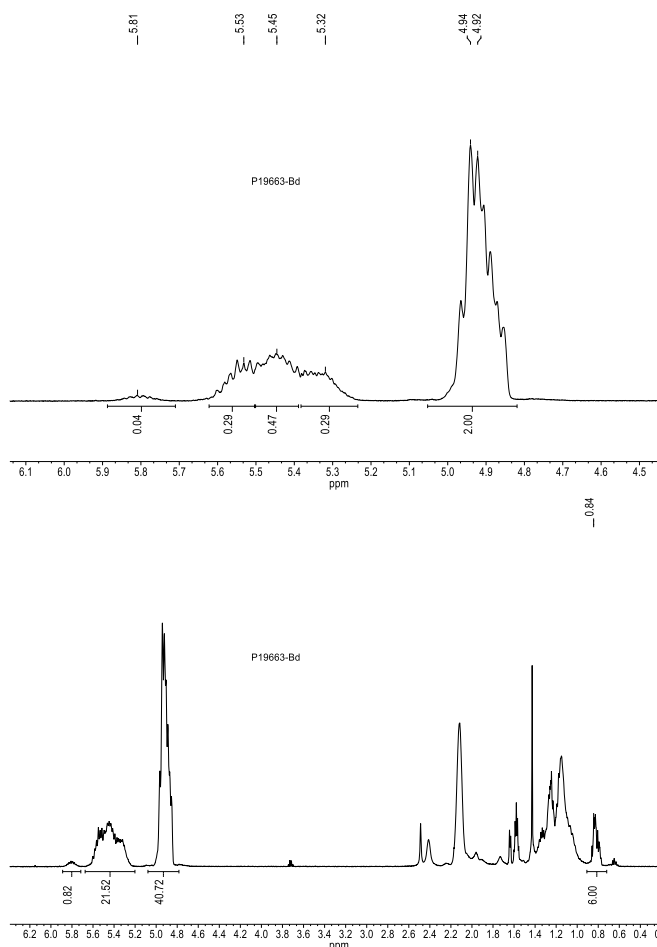
Thermal analysis of the copolymer was performed on a TA Q100 differential scanning calorimeter (DSC) at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T<sub>g</sub>).

**Solubility:**

Polybutadiene is soluble in DMF, THF, toluene, hexane, cyclohexane and CHCl<sub>3</sub>. It precipitates from methanol, ethanol and water.



**<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) of polybutadiene:**



## SEC elugram of the Sample:

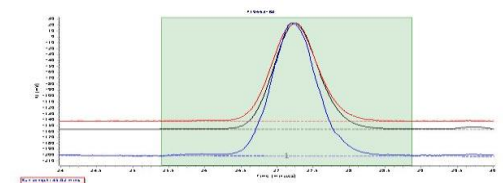
Agilent GPC/SEC Software

P19663-Bd

### Sample Properties

Sample name: P19663-Bd  
 File name: ICF\_11\_07\_2019-0002.sample  
 Collected by: Polymer Source at 11:39:15 AM on July-11-19  
 Instrument name: Agilent 2

### Chromatogram Plot



## Reference: Thermal transition of PBd.

Polybutadiene ( $M_n=2.2-2.4 \times 10^3$ )	T <sub>g</sub>
1,2-addition: <b>78 %</b>	-35°C
1,2-addition: <b>89 %</b>	-29°C
1,2-addition: <b>99 %</b>	-27°C