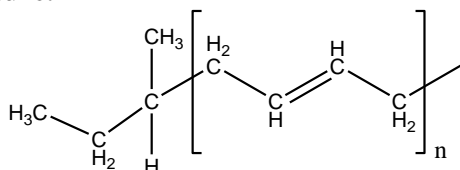


**Sample Name:** Polybutadiene (1, 4-rich microstructure)

**Sample #:** P42214-Bd

**Structure:**



**Composition:**

Mw x 10 <sup>3</sup>	Mn x 10 <sup>3</sup>	Mw/Mn	IV
2,176.0	1,710.0	1.2	10.3

1,4 addition	>92%
--------------	------

**Synthesis Procedure:**

The 1,4-addition polybutadiene was prepared by anionic living polymerization of butadiene in non-polar media.

**Characterization:**

The following is a listing of the conditions used in this study.

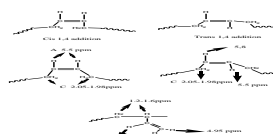
Parameter	Condition Used
Dissolution Solvent	THF Overnight @ -20C
Sample Concentration	0.5 mg/mL
Filtration	0.2 µm Teflon syringe filter
Mobile Solvent	THF
Columns	Agilent Columns
Flow Rate	1.0 mL/min
System Back Pressure	200 psi
Injection Volume	100 µL
Column Temperature	30°C
Detector Temperature	30°C

**Microstructure:**

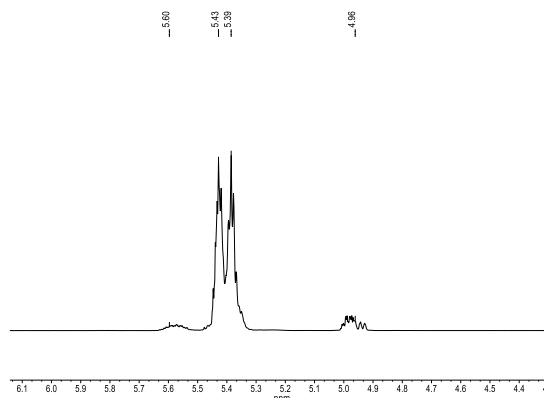
The ratio between 1,4- and 1,2-addition was calculated by <sup>1</sup>H NMR spectroscopy.

**Solubility:**

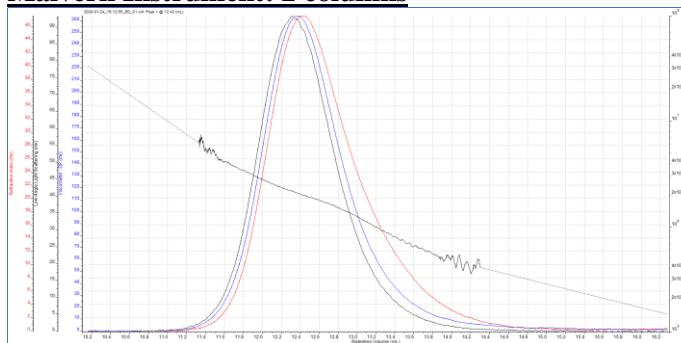
The polybutadiene is soluble in THF, toluene, hexane, cyclohexane and CHCl<sub>3</sub>. It precipitates from methanol, ethanol and water.



**<sup>1</sup>H NMR spectrum of the polymer:**

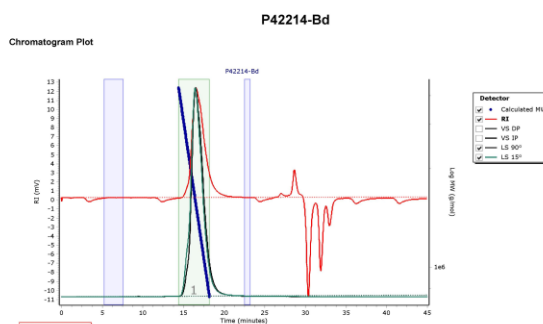


**SEC elugram of the polymer in THF at 30 °C:**  
**Malvern Instrument: 2 columns**



**SEC elugram of the polymer in THF at 30 °C:**  
**Agilent Instrument using 3y columns.**

Agilent GPC/SEC Software



Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	2113259	1612518	1918827	2264448	2637723	2184493	1.19

Processing Parameters  
Method: Last modified by GPC Agilent2 at 10:21:28 AM on July-23-19  
Concentration Detector Used in: RI  
Analysis: 100.00  
Injection volume (µL): 1.00  
Flow rate (mL/min): Calculate Sample Concentration from Entered Sample Properties  
Concentration options: 0.124  
Entered dilution (mL/g):