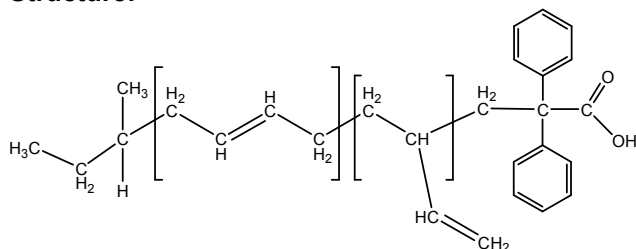


Sample Name: Carboxy-terminated Polybutadiene (1,4-rich microstructure)

Sample #: P19258-BdCOOH

Structure:



Composition:

Mn x 10 ³	PDI
2.3 2.0 (HNMR)	1.04
COOH functionality:	> 98 %
PBd 1,4-addition:	92 %

Synthesis Procedure:

1,4-addition carboxy-terminated polybutadiene was prepared by anionic living polymerization of butadiene in non-polar media, followed by termination of the polymerization with dried CO₂ in presence of THF to avoid any linking reaction with CO₂.

Characterization:

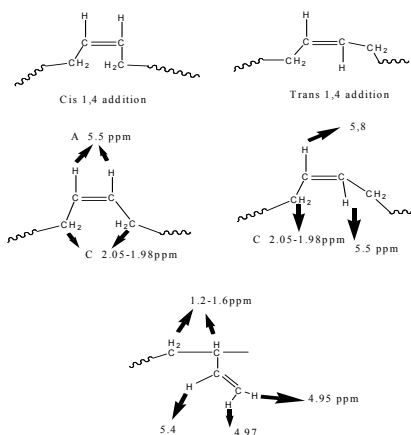
By GPC and HNMR. .

Functionality: The degree of polymer functionality was determined by acid-base titration.

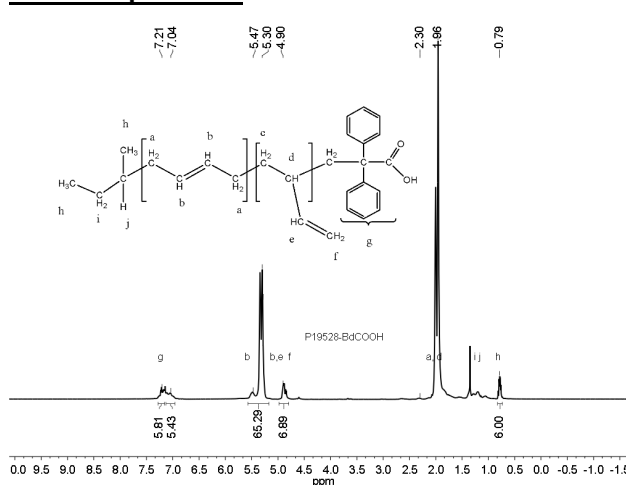
Microstructure: The ratio between 1,4- and 1,2-addition was calculated by ¹H NMR spectroscopy.

Solubility:

COOH terminated polybutadiene is soluble in DMF, THF, toluene, hexane, cyclohexane and CHCl₃. It precipitates from methanol, ethanol and water. FTIR of the polymer:



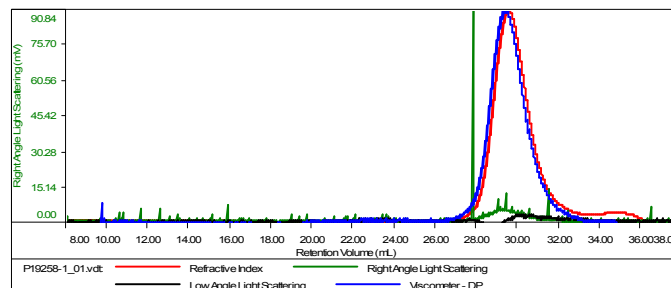
¹H NMR spectrum:



SEC elugram:

Sample ID: P19258-BD before termination with CO₂

Concentration (mg/mL)	5.0131
Sample drydc (mL/g)	0.1270
Method File	PS80K-April 13-2015-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P19258-1_01.vdt	2,321	2,416	2,571	1.041	0.2134