

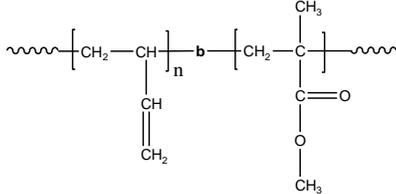
Sample Name: Poly(butadiene -b- methyl methacrylate)

Polybutadiene rich in 1,2 microstructure

Sample #: P2295-BdMMA

Structure:

1,2-rich microstructure:



Composition:

$M_n \times 10^3$ Bd-b-MMA	PDI
155.0-b-4.0	1.15
T_g for Bd block: -12°C	T_g for MMA block: not detected

Synthesis Procedure:

Poly(butadiene (1,2 addition)-b-methyl methacrylate) is prepared by living anionic polymerization with sequence addition of butadiene (Bd) followed by methyl methacrylate monomer (MMA). Poly butadiene macroanions were end capped with a unit of diphenyl ethylene.

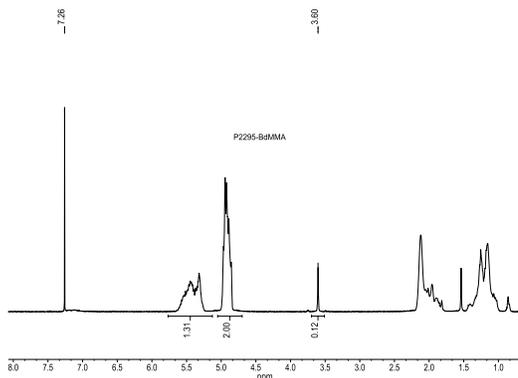
Characterization:

The product was characterized by size exclusion chromatography (SEC) and ^1H NMR.

Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of $10^\circ\text{C}/\text{min}$. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

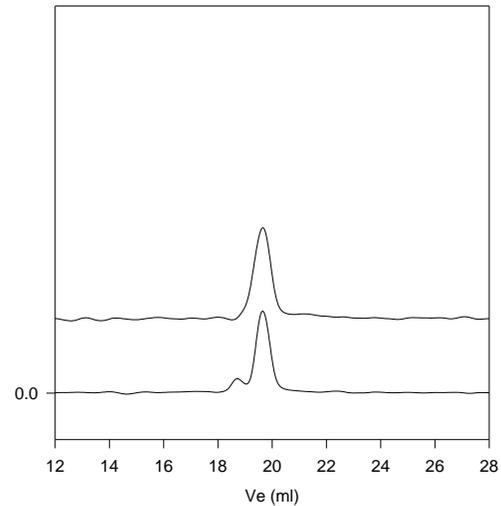
HNMR spectrum of the polymer:



SEC of the block copolymer:

P2295-BdMMA

Poly butadiene rich in 1,2 addition



SEC profile of the Block copolymer:

— Polybutadiene, $M_n=155,000$, $M_w=162,000$, $PI=1.08$
— Diblock Copolymer PBd(155,000)-b-PMMA(4000), $PI=1.15$

DSC thermogram for Bd block:

