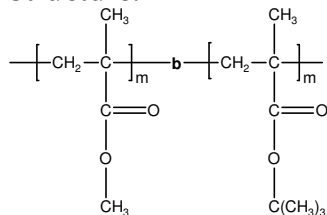


Sample Name: **Poly(methyl methacrylate-b-t-butyl methacrylate)**

SEC of the block copolymer:

Sample #: **P1199-MMA<sub>t</sub>BuMA**

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> PMMA-b-PtBuMA	PDI
3.2-b-3.8	1.11
MMA block	89°C
t-BuMA block	Not distinct

**Synthesis Procedure:**

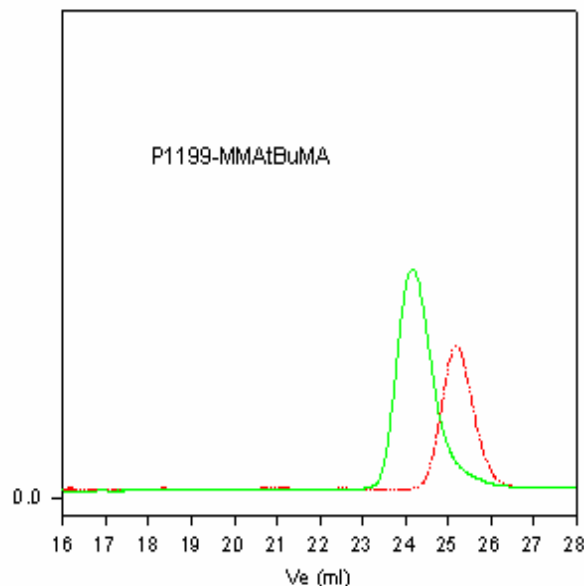
Poly(methyl methacrylate -b- t-butyl methacrylate) is prepared by living anionic polymerization by sequence addition of methyl methacrylate followed by addition of t-butyl methacrylate.

**Characterization:**

An aliquot of the anionic poly(methyl methacrylate) block was terminated before addition of t-butyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the t-butyl methacrylate protons at about 1.43 ppm with the peak area of the methyl methacrylate protons at about 3.6 ppm. Copolymer PDI is determined by SEC.

**Solubility:**

Poly(methyl methacrylate-b-t-butyl methacrylate) is soluble in THF, CHCl<sub>3</sub>, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.



Size exclusion chromatography of poly(methyl methacrylate-b-t-butyl methacrylate)  
[Precursor of P1199-MmMNa]:  
----- Poly methyl methacrylate,  $M_n=3200$ ,  $M_w=3400$ ,  $P=1.06$   
----- Block Copolymer D<sub>1</sub>: PMMA(30 units)-b-PtBuMA(27 units),  $PI=1.11$   
----- Block Copolymer D<sub>2</sub>: PMMA(30)-b-PMANa(27),  $PI=1.11$

**DSC thermogram for MMA block:**

